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# FEASIBILITY ANALYSIS OF A PUBLIC STREET LIGHTING PROJECT BASED ON SOLAR POWER PLANT IN JERAMBAH GANTUNG, PANGKALPINANG CITY

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**Abstract:** Solar Public Street Lighting refers to a public street lighting system that uses electrical power from solar energy. In this system, the lights are powered independently by energy generated from sunlight, which is collected through solar panels or solar cells, and then converted into electricity through the photovoltaic process. The advantages of solar street lighting are energy-efficient and have high durability. This study aims to evaluate the planning of solar-based public street lighting in the Jerambah Gantung area, Pangkalpinang City. Currently, along the Jerambah Gantung road in Pangkalpinang City, there is no public street lighting system, although the road is often used by residents of Balunijuk Village as an access point to Pangkalpinang City. To consider the safety aspects of road users, it is necessary to plan public street lighting that utilizes energy from renewable sources, namely solar energy.

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## Introduction

In the city of Pangkalpinang, precisely from Jerambah Gantung road to Balunijuk Village, community activities where (location) the center of activity can be done in many ways, namely using motorized transportation or private cars, public transportation, or on foot. Pangkalpinang City, precisely on Jalan Jerambah Gantung, Gabek District, is facing major challenges in ensuring effective and sustainable public lighting. Street lighting is an important aspect of urban infrastructure, affecting public safety, social activity and traffic efficiency. To meet these needs, while contributing to environmental protection, the idea of solar power plant-based public lighting (PLTS) emerged as a promising solution. In particular, the PLTS-based street lighting project along the Jerambah Gantung road in Pangkalpinang city attracted

attention. Jalan Jerambah Gantung is not only a strategic location with abundant solar energy potential, but also an important symbol of urban infrastructure in the city of Pangkalpinang. The use of solar energy for public lighting in the region is a wise step in achieving the Sustainable Development goals.

The use of solar energy as a renewable energy source has been widely implemented, especially because solar energy can be produced in an environmentally friendly manner. The basic principle of solar energy involves the conversion of sunlight into electrical energy through the use of solar panels (Caroko et al., 2022). The electricity generated by solar panels depends on the intensity of sunlight and the operational temperature of solar panels. Fluctuations in weather conditions and changes in the location of sunlight

cause the output power of solar panels to be irregular or variable, and is not always maintained at maximum capacity conditions (appendix 1, Material Specifications, n.d.). Adopting solar energy as an alternative energy source is very suitable for public lighting. The great potential of sunlight can be converted into electrical energy, making it an environmentally friendly option. In addition, solar-based street lighting systems can be specifically designed without the need for cabling that interferes with visual aesthetics (Sumadi et al, 2019).

Previous research conducted by (Agriawan et al., 2021) in a study entitled "Automatic Street Lighting Based on Light Intensity and the Presence of Fog or Smoke" Solar street lighting is a cheap and economical alternative to be used as a source of lighting power because it uses a free and unlimited energy source from nature, namely solar power.

Previous research conducted by (Rumbayan et al., 2020) in a study entitled "Appropriate Technology Lighting Based on Renewable Energy in Kiama village, Taulad Islands Regency" this research was motivated because the coastal communities of the Talaud islands have limited access to electricity from the PLN network, so there is no street lighting in Kiama village. The electricity crisis is also an important problem in finding solutions for coastal communities in border areas.

Previous research conducted by (Sujono et al., 2022) In a study entitled "Solar and LED-Based Public Street Lighting (PJU) Assistance in Jatiwates Village, Tembelang District", this research was conducted because one of the problems faced by Jatiwates Village is that the lack of community skill level in the maintenance and operation of PJU does not affect the operation of PJU. as it should be. Therefore, support is needed so that the community can operate PJU properly.

Thus, we will explore the concept of PLTS-based street lighting, why it is important for the city of Pangkalpinang, the benefits and potential that can be expected from this invention and the analysis of the costs that will be incurred. In this way, we can understand the great potential of this project to create a greener, more efficient, and safer city for its citizens.

## Literature Review

1. Previous research conducted by (Rumbayan et al., 2020) in research entitled "Information on Appropriate Technology Based on Renewable Energy in Kiama Village, Taulad Islands Regency" was based on the background of this research because the coastal communities of the Talaud Islands have limited access to electricity from the PLN network.

So there is no street lighting in Kiama village. The electricity crisis is also an important problem in finding solutions for coastal communities in the border area of Kiama village who need electricity for public lighting. Based on research and analysis of the current situation, it is possible to form priority problems that need to be resolved through this community service activity, namely the ability of the Kiama Village community to access electricity is still limited, so that the public road infrastructure does not yet have electricity. PLN network. Then there is a lack of understanding by community partners in Kiama village about utilizing the village's energy potential to produce electricity on a small scale without relying on electricity from the State Electricity Company (PLN).

So the conclusion of this research is that the implementation of community service activities in Kiama Village, Talaud Islands, has enabled the introduction and dissemination of appropriate renewable energy-based technology in the form of solar street lights and wind turbines, which can be a solution to this problem. about the electrical energy crisis in the island region. Through the socialization and application of renewable energy technology in the form of solar and wind power, Kiama village residents can increase their knowledge about renewable energy, an energy source that has great potential to be utilized by island communities who are facing the problem of an electrical energy crisis.

2. Previous research conducted by (Sujono et al., 2022) in research entitled "Solar and LED Based Public Street Lighting (PJU) Assistance in Jatiwates Village, Tembelang District" this research was

carried out because one of the problems faced by Jatiwates Village was The lack of community skill levels in maintaining and operating PJUs does not affect the operation of PJUs. as it should be. Therefore, support is needed so that the community can operate PJUs well.

The aim of this activity is to improve community awareness skills and operate PJU street lights independently based on solar and LED power without the help of electricity. This activity was carried out on October 10 2022 in Jatiwates village, Tembelang subdistrict, Jombang Regent. The method used in this activity is Participatory Action Research (PAR) which consists of three stages, namely planning, implementation and evaluation. The results of this activity demonstrate the community's ability to operate PJU in accordance with the support provided to the community.

The result of this operation is a ready-to-use product in the form of solar energy-based PJU. The conclusion of this research is that based on the presentation of the results, it can be concluded that this mentoring activity helps improve community skills in maintaining and operating PJU-based street lights. Solar and LED lights are independent without the help of electricity. The response from the Jatiwates village community was very good and open to this mentoring activity. This can be seen from the enthusiasm of the community during the activity.

3. Previous research conducted by (Artiyasa et al., 2021) in research entitled "Installation of Solar Powered Street Lights for Village Street Lighting in Cibolang Kaler Village" Fossil energy which will be used up is used as the basis for Nusa Putra University's HME activities for educational purposes , as well as carrying out technology transfer that provides direct benefits to the community in the form of Solar Powered Village public lighting facilities (PJD).

Based on the survey results, not all public lighting facilities are available at the village entrance, so that community activity decreases at night and also causes accidents. From the results of this activity, two important things were

obtained for the public to understand renewable energy and energy efficiency to reduce the environmental impact of fossil fuel power plants that dominate Indonesia. Second, with support in the form of solar-powered PJD lights, the community is greatly helped in carrying out nighttime activities and also creates safer conditions in the Cibolang Kaler community. The conclusion of this journal is that PKM activities or community collaboration programs related to the socialization and use of renewable energy are accompanied by the installation and community understanding of renewable energy and also bring real benefits to the residents of Cibolang Kaler Village by installing solar-powered PJDs. This activity also allows for direct and reciprocal relationships that are beneficial for the ulama and the community, especially the residents of Cibolang Kaler, Cisaat District.

The PKM program is implemented in addition to establishing direct relationships between schools and the community, it also contributes to local governments in building and developing craft villages. Based on the activities carried out by HME 20 students, it is hoped that the PKM group can carry out activities to install village street lights using solar cells for public lighting in other villages that do not yet have a public lighting system so that everyone in the village we visited can feel the benefits and can use and maintain it well.

4. Previous research conducted by Poliama, et al (2021) in research entitled "Design and Construction of Solar Powered Public Street Light Monitoring System Tools Based on Lo - Ra Technology" this research was conducted because public lighting and problems often occur in solar powered street lighting ( solar cell) goes out during working hours due to damage stored in the battery. This distance This in itself will be a problem if applied Check regularly. Currently, sensing and synchronization of public lighting equipment will be more effective if done remotely.

In this research, DI succeeded in creating a public road light monitoring system using solar energy based on Lo-

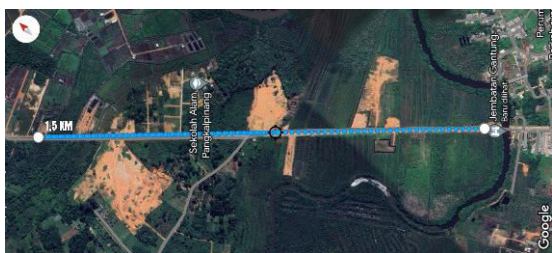
Ra technology. From this research, data and LED current values can be monitored by the LDR sensor, battery voltage, lamp voltage and all data sent in real-time. Apart from tracking data, the lighting control system also implements an energy saving system, namely at night the lights will only turn on when an approaching human object is detected. The lights use a PIR sensor. The method of sending some data from the public lighting control center Server uses data analysis. The data transmission distance between two Lo-Ra modules is used effectively up to a maximum distance of 300 meters.

Based on the research results, a monitoring system for solar powered street lights was designed based on LoRa technology. We can conclude that: Monitor current sensor data and voltage on public street lights using Lo-Ra technology can be sent up to a distance of 300 meters with an RSSI value of 110, send some data : Time, date, battery voltage, lamp voltage, lamp current, LDR value can be sent using data analysis methods.

## Method

In this study, quantitative descriptive methods are used that describe or explain research objects or phenomena using statistical data or numbers. This quantitative method involves a systematic investigation of a phenomenon with the collection of measurable data using statistical, mathematical, or computational techniques. (Maswaty, 2013).

Descriptive method is a way of research used to describe, analyze, and understand a phenomenon without changing or manipulating the variables. This approach is useful in describing certain characteristics, conditions, or situations, especially in the development of projects aimed at explaining them. (Melorose et al., 2015).



## Research Location

Jerambah Gantung Village is one of the areas in Gabek sub-district, Pangkalpinang City, Bangka Belitung Islands Province. Jerambah Gantung Village as the name implies has a bridge that connects the village with Balunijuk Village, Merawang District. If you pass the road, it is still half the journey covered with asphalt and the rest is still red soil that raises dust. Along this road there are still no street lights available so that this road access is often used during the day only because it will pose a great risk if you pass it at night.

## Stages of Research

### a. Data Preparation and Collection Phase

The preparatory phase includes steps such as identifying and formulating problems, conducting literature studies, as well as preparing methodologies and planning projects.

In collecting this research data, secondary data is used which is information that has been collected, compiled, and analyzed by other parties. Secondary data is a type of information that is not directly obtained by researchers from original sources or personal experience, but rather comes from pre-existing sources (Eko Ihsanto, 2016).

### Observation

In the observation process, the object of research was observed to understand the initial condition of the location of the hanging girder road and the current installation of public street lighting

### Documentation

The use of documentation is carried out to collect specific data, especially regarding road segments and their length for planning public street lighting with the use of solar panels.

### b. Data Processing and Analysis Stage

Existing data is then processed using data examination techniques, classification, verification, and conclusion. Continued with the analysis calculation technique as follows:

#### 1. NPV (Net Present Value)

Net Present Value (NPV) is a method in financial planning that measures the profitability of a project investment plan by considering the time value of money. NPV is used to evaluate projects by taking into

account the present value of expected future cash flows by applying a discount using the relevant interest rate. (Artiyasa et al., 2021).

$$NPV = \sum_{t=0}^n \frac{CF_t}{(1+r)^t} - C_0 \dots 1.1$$

- CF<sub>t</sub> : cash flow in the period t
- r : discount rate
- n : number of years (economic life) of the project
- C<sub>0</sub> : initial investment

If the NPV shows a positive number, it indicates that the project being carried out is considered feasible because it has the potential to provide benefits. Conversely, if the NPV is negative, it indicates that the project is not worth continuing because it has the potential to result in losses. When the NPV value is equal to zero, it means that the projected investment value does not cause significant gains or losses.

## 2. IRR (Internal Rate Of Return)

The internal rate of return, otherwise known as the internal rate of return (IRR), refers to the interest rate of a project over a certain period. The IRR approach is used to assess whether an investment is worth it by finding an interest rate that makes the present value of expected gains equal to the present value of the cost of capital (NPV = 0). In this method, the time value aspect of money has been considered by basing cash flow on the cost of capital or interest rate applied. Projects with an internal rate of return that exceeds the discount rate or financial policy of the enterprise are considered profitable.

$$IRR = i_t + \frac{NPV_1}{NPV_1 + NPV_2} \times (i_2 - i_1) \dots 2.1$$

Where:

- NPV<sub>1</sub> : NPV at interest rate i<sub>1</sub>
- NPV<sub>2</sub> : NPV at interest rate i<sub>2</sub>
- i<sub>1</sub> : Discount rate that results in NPV<sub>1</sub>
- i<sub>2</sub> : Discount rate resulting in NPV<sub>2</sub>

## 3. BCR (Benefit Cost Ratio)

Benefit cost ratio (BCR) is a ratio used in economic analysis to compare the benefits of a project. BCR, or Benefit-Cost Ratio, is a common method of analysis in project selection that is done easily, namely

by comparing the benefits with the costs involved.

$$BCR = (\text{Total benefit}) / (\text{Total cost}) \dots 3.1$$

Total benefit : the value of benefits resulting from the project

Total cost : Total costs incurred to carry out the project

If the BCR value is greater than 1, it indicates that the benefits obtained outweigh the costs incurred, so the project is considered to have viable or profitable economic value. If the BCR is less than 1, it means the benefits are less than the costs, and the project is considered uneconomical or considered unprofitable. If the BCR is equal to 1, it means that benefits equal costs, so the project is considered "break-even" in terms of economics.

## 4. PP (Payback Period)

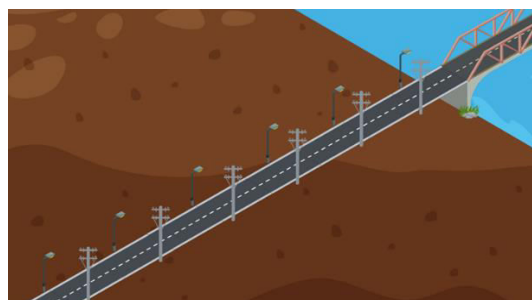
Payback period is the duration of time it takes to return capital or investment calculated based on net cash flow. This net cash flow is the difference between revenue and expenses each year. Usually, the payback period is expressed in units of years.

$$PP = (\text{nilai investasi}) / \text{pendapatan} \times 1 \text{ tahun} \dots 4.1$$

To calculate the analysis of this financial aspect, use the current interest rate of 5% per year.

## Results and Discussion

### Project Design



The planned street lighting for the Pangkalpinang City Hanging Jerambah is 1,500 meters long using 30 light poles with a distance of 50 meters per pole.

The use of solar energy as renewable energy has been widely done to produce environmentally friendly energy. Solar energy has the principle to convert sunlight into electrical energy using solar panels. The electricity generated by solar panels depends on the intensity of sunlight and the operating temperature of solar panels. The electricity generated by solar panels also depends on weather conditions and the location of sunlight which often changes, causing the output power of solar panels to fluctuate or show conditions and conditions are not fixed or varied and do not always maintain at maximum capacity conditions. Solar cells can be the same as devices with two terminals or connections, where conditions are dark and bad.

## A. Financial Analysis

### 1. Net Present Value (NPV)

Table 3.1 Net Present Value (NPV) 10%

Year	Cash Flow	Present Value
Year 0	IDR 855,700,000	IDR 855,700,000
Year 1	IDR 496,306,000	IDR 451,187,273
Year 2	IDR 470,635,000	IDR 388,954,545
Year 3	IDR 487,749,000	IDR 366,453,043
Year 4	IDR 453,521,000	IDR 309,760,945
Year 5	IDR 444,964,000	IDR 276,287,636
	Total PV	IDR 1,792,643,442
	NPV 10%	IDR 936,943,442

Source : Data Processed (2023)

Table 3.2 Net Present Value (NPV) 15%

Year	Cash Flow	Present Value
Year 0	IDR 855,700,000	IDR 855,700,000
Year 1	IDR 496,306,000	IDR 431,570,435
Year 2	IDR 470,635,000	IDR 355,867,675
Year 3	IDR	IDR

	487,749,000	320,702,885
Year 4	IDR 453,521,000	IDR 259,302,104
Year 5	IDR 444,964,000	IDR 221,225,749
	Total PV	IDR 1,588,668,847
	NPV 15%	IDR 732,968,847

Source : Data Processed (2023)

### 2. Internal Rate of Return (IRR)

Known

$$i_1 = 10\% \quad NPV_1 = \text{IDR } 936,943,442$$

$$i_2 = 15\% \quad NPV_2 = \text{Rp } 732,968,847$$

$$IRR = i_1 + \frac{NPV_1}{NPV_1 + NPV_2} \times (i_2 - i_1)$$

$$IRR = 10\% + \frac{\text{Rp } 936,943,442}{\text{Rp } 936,943,442 + \text{Rp } 732,968,847} \times$$

$$(15\% - 10\%)$$

$$IRR = 10\% + \frac{\text{Rp } 936,943,442}{\text{Rp } 1,669,912,289} \times 5\%$$

$$IRR = 10\% + 0.56 \times 5\%$$

$$IRR = 10\% + 2.8\%$$

$$IRR = 12.8\%$$

### 2. Benefit Cost Ratio (BCR)

$$\text{Benefits} = \sum PV \text{ manfaat } (1 - 5)$$

$$= \text{IDR } 1,792,643,442$$

$$\text{Cost} = \text{IDR } 855,700,000$$

$$B/C = \frac{\text{Benefit}}{\text{Cost}} = \frac{\text{Rp } 1,792,643,442}{\text{Rp } 855,700,000}$$

$$B/C = 2.09$$

### 3. Payback Peroid (PP)

Known

$$\text{Investment Value} = \text{IDR } 855,700,000$$

$$\text{Income} = \frac{\text{Rp } 2,353,175,000}{5}$$

$$= \text{IDR } 470,635,000$$

$$PP = \frac{\text{Nilai Investasi}}{\text{Pendapatan}} \times 1 \text{ year}$$

$$PP = \frac{\text{Rp } 855,700,000}{\text{Rp } 470,635,000} \times 1 \text{ year}$$

$$PP = 1.18$$

Operating expenses are work plans that cover all the main activities of the company in obtaining revenue in a certain period. Therefore, the operating budget includes:

- Preparatory Costs are costs incurred prior to Construction. The required preparation fee is IDR 14,500,000.
- Operating costs are costs incurred to pay for labor, electricity, water and telecommunications, hygiene and consumables. Operational costs in this

construction amounted to Rp 306,600,000.

- c. Investment costs are the costs incurred to make investments such as the purchase of assets. The required investment cost is IDR 13,600,000.
- d. The renewal/replacement fee is an additional cost in the development process. The required renewal fee is IDR 400,000,000.

From the calculation of the financial feasibility analysis of the Street Lighting Construction project in Jerambah Gantung Pangkalpinang City, that in the construction of this project was declared financially feasible using Net Present Value (NPV) analysis with an interest rate of 10% getting a result of IDR 936,943,442 and an interest rate of 15% getting a result of IDR 732,968,847, and an Internal Rate of Return obtained a value of 12.8%, and Benefit Cost Ratio (BCR) with benefits of IDR 1,792,643,442 and costs of IDR 855,700,000 resulting in a value of 2.09. In the Payback Period calculation, the result is 1.18. So within a period of 1.18 years, the investment capital from the solar power plant public street lighting project along Jalan Jerambah Gantung Pangkalpinang City can be returned.

The installation of lighting along Jerambah Gantung aims to make it easier for road users and vehicle drivers to see clearly the road or terrain that will be passed at night. This is expected to improve traffic safety and security of road users from potential accidents and criminal activities. In addition, the existence of street lighting also helps facilitate access to economic activities.

## Conclusion

Based on the calculation of the financial feasibility analysis of the PLTS public street light construction project along the Hanging Jerambah Pangkalpinang City using NPV (net present value), IRR, the construction of the project is declared feasible from all financial aspects (internal rate of return), BCR (benefit-cost ratio) and PP (return period of investment).

The budget used to plan the construction project of public street lighting solar power plant on Jalan Gantung Jerambah Pangkalpinang City uses funds from the 2024

Pangkalpinang City Regional Budget of Revenue and Expenditure.

## Acknowledgement

Praise be to the presence of Allah SWT for his guidance which has guided our steps in completing the article entitled "Feasibility Analysis of a Public Street Lighting Project Based on a Solar Power Plant in the Hanging Jerambah, Pangkalpinang City".

The author would like to express his thanks and appreciation to his friends and supervisors who have helped in the process of completing the writing of this article.

## Conflict of Interest

The author conducted research as a road user who needs access to lighting. In this case, the author as a designer provides the feasibility of a street lighting project.

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## **THE ROLE OF RURAL AND URBAN LAND AND BUILDING TAX THROUGH EFFECTIVENESS AND CONTRIBUTION TO LOCAL REVENUE (CASE STUDY IN AIR SALEMBA VILLAGE, PANGKALPINANG CITY)**

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**Abstract:** The purpose of this research is to analyze the level of effectiveness and contribution of the role of rural and urban land and building tax in Air Salemba Village. This research uses descriptive quantitative methods. Descriptive method is a research method that serves to provide an overview or description of the object under study through data or samples that have been collected, without analyzing and making conclusions that apply to the public. The data used in this study are mixed data, namely primary data obtained from Air Salemba Village related to the realization of revenue and the target of rural and urban land and building tax revenue. As for secondary data obtained from data from the central statistics agency, reports, journals, and other sources related to the realization of PAD revenue. The results showed that the effectiveness and contribution of PBB-P2 to PAD in Air Salemba Village, Pangkalpinang City in 2022, can be concluded that the level of effectiveness is categorized as less effective. Although, the level of effectiveness is categorized in effective criteria because the realization of revenue is in accordance with the predetermined revenue target. The level of PBB-P2 contribution to PAD is still categorized as less. Air Salemba Village is one of the highest PBB-2 tax revenues in Gabek Sub-district but its contribution to PAD is not significant.

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### **Introduction**

According to Law Number 28 Year 2007 on General Provisions and Tax Procedures, tax is an obligation that must be given to the state by individuals or entities, which is mandatory based on the law without getting direct rewards. This tax is used to fulfill the needs of the state for the prosperity of the people and is managed directly by the government for public and development purposes, aiming to provide welfare and prosperity to the people. In addition to the

central government, local governments also have the authority to impose local taxes and levies (PDRD). In the Pangkalpinang City Regional Regulation on Regional Taxes, it is explained that local taxes are an obligation for taxpayers, both individuals and entities, which must be deposited with the local government. This tax is coercive in accordance with legal provisions without getting direct rewards, and is intended to finance regional development with the aim of improving the welfare of the community. (Mu'min Al-Mukhlisin, 2021).

The success of a country in its national development efforts is highly dependent on its ability to improve the welfare of its people. In Indonesia, regions have the right and responsibility to organize and manage their own government, as a step in building an independent economy. Resources are then focused at the regional level, both through the expansion of the tax base and the allocation of balancing funds. This concept is in line with the concept of fiscal decentralization, which gives regions the authority to manage their own finances, especially through local own-source revenue (PAD) derived from local taxes and levies. (Taufik Wibisono, 2019).

Land and Building Tax for Rural and Urban Sector (PPB-P2), which was previously a central tax, was transferred to local tax, with various considerations. First, conceptually, Rural and Urban Land and Building Tax (PBB-PP) can be collected by the regions because it is more local, the tax object is tangible, immovable, and there is a close relationship between the taxpayer and the tax recipient. Second, the transfer of Rural and Urban Land and Building Tax (PBB-PP) to the regions is expected to increase Local Own Revenue (PAD) and improve the structure of the Regional Budget (APBD). Third, the transfer of the Land and Building Tax Rural and Urban sector (PBB-PP) to the regions can improve services to the community, and can improve the welfare of the community in aspects of transparency and accountability in its management (Lustig, 2020).

Revenue from various taxation sectors, including Land and Building Tax (PBB), includes a number of objects that contribute significantly to state and local revenues. Land and Building Tax is considered a source of revenue that has great potential, as well as contributing to local revenues. The success of Land and Building Tax in making this contribution can be explained by the scope of its object which involves all land and buildings located in the territory of the Republic of Indonesia. (Mulyani & Furqon, 2021). The presence of Land and Building Tax as one type of tax can be understood considering that land and buildings provide better economic and social benefits for individuals or legal entities that have rights or benefit from

the property.

Regional Original Revenue (PAD) is the right of the local government which is recognized as an increase in net worth. Meanwhile, regional revenue includes all cash receipts through the regional general cash account that increase the participation of current funds which is the right of the region in one fiscal year that does not need to be repaid by the region. (Yulianti et al., 2018).

Based on research (Tuti Wahyuni, 2018). Local Tax is one of the sources of Regional Original Income (PAD) which is very significant in supporting the financial implementation of local government. In accordance with the provisions of Law Number 28 of 2009 concerning Regional Taxes and Levies, which is an amendment to Law Number 34 of 2000 concerning Regional Taxes and Levies, it is stated that regional taxes and levies play an important role as one of the essential sources of regional income to finance various local government activities.

According to Pawel Felis, Henryk Roslaniec, Joanna Szlęzak-Matusiewicz (2019) in his journal entitled "Property Tax Policy Of Rural And Urban-Rural Municipalities In Poland" the results of the study state that tax policies in the cities investigated have differences, and in certain situations, can create a positive impact on revenue derived from rural and urban property taxes. (Felis et al., 2019).

In addition, this research is also almost the same as research conducted by MunawirSyahroni et al in 2019, which shows that the effectiveness of the system for collecting funds from land and building taxes in the Banjarmasin City Government is still low, which is reflected in the low realization of revenue after being implemented in 2013. The causes involve less than optimal collection of mandatory taxes, limited payments, weak law enforcement in implementation, and a complicated and time-consuming process of filing tax objections. (Munawir Syahroni et al., 2019). The difference lies in the contribution made, in Kelurahan Air Salemba 76.9% of the community is aware of rural and urban land and building taxes.

According to Mutmainah Maulida, M. Wimbo Wiyono, Muhammad Mudhofar in his

journal entitled "Analysis of the Effectiveness of Rural and Urban Land and Building Tax (PBB-P2) Revenue and Its Contribution to Local Taxes in Lumajang Regency in 2014 - 2017" the results of the study state that although the effectiveness of PBB-P2 revenue is very high, it is included in the effective quota for one year because it does not achieve the predetermined goals. On the other hand, although the amount of realization continued to increase, the amount of contribution decreased from year to year, especially in 2017. This decline is due to a relatively large increase in the target this year. Therefore, local governments continue to explore potential tax sources in line with the increase in targets set each year. The higher the revenue of Provincial and Municipal Land and Building Tax (PBB-P2), the greater the contribution of Provincial and Municipal Land and Building Tax (PBB-P2) to local taxes, saying that profit is achieved.

### **Literatur Review**

According to Aulia Tiara Syafitri and Alistraja Dison Silalahi in their journal titled "Analysis of the Effectiveness of Rural and Urban Land and Building Taxes in Increasing Local Revenue (PAD) in Medan City," the research results indicate that the growth rate of Rural and Urban Land and Building Taxes (PBB-P2) from 2016 to 2020 was only 5.67%, categorizing it as "unsuccessful." In terms of effectiveness, the average effectiveness of rural and urban land and building taxes from 2016 to 2020 was 88.11, placing it in the highly effective category. The increase in the year 2020 was 94.50% due to the rise in the number of taxpayers resulting from the reimplementation of the Land and Building Tax Penalty Waiver Program.

According to Tasha Nurafifah and Arry Irawan in their journal titled "The Influence of Rural and Urban Land and Building Tax (PBB-P2) and Land and Building Rights Acquisition Duty (BPHTB) on Local Tax Revenue in Bandung City," the research results indicate that PBB-P2 has a significant impact on local tax revenue. However, the issue lies in revenue realization. PBB-P2 has not yet reached the target set initially in 2016. This is due to the low awareness of taxpayers in paying taxes.

According to Mutmainah Maulida, M.

Wimbo Wiyono, Muhammad Mudhofar in their journal titled "Analysis of the Effectiveness of Rural and Urban Land and Building Tax (PBB-P2) and Its Contribution to Local Taxes in Lumajang Regency 2014 – 2017," the research results state that despite the high effectiveness of PBB-P2 revenue collection, it falls within the effective quota for only one year because it does not achieve the set goals. On the other hand, although the realization amount continues to increase, its contribution has been decreasing from year to year, especially in 2017. This decline is attributed to a relatively large increase in the target for that year. Therefore, the local government continues to make efforts to explore potential tax sources in line with the increasing annual targets. The higher the revenue of Provincial and City Land and Building Tax (PBB-P2), the greater the contribution of Provincial and City Land and Building Tax (PBB-P2) to local taxes, indicating that the benefits are achieved.

### **Method**

The method used in this research is descriptive quantitative method. The descriptive method serves as a picture or description of the object to be studied through the data or samples that have been collected. In this method, the researcher only describes the object under study as it is, without manipulating or influencing the object. The quantitative research method is a research method that relies on objective measurements and mathematical (statistical) analysis of data obtained from interviews with the Head of the Development Division in Air Salemba Village (Putra, 2013).

Descriptive quantitative method that explains the object to be studied. The object used in this research is rural and urban land and building tax in Air Salemba Village, Pangkalpinang City for the period 2022. The type of data used in this study is in the form of primary data and secondary data. (Yulis Kharuniawati, 2017).

Primary data obtained from Air Salemba Village relates to revenue realization and PBB-P2 revenue targets. While secondary data is obtained from data from the central statistics agency, reports, journals and other sources related to the

realization of PAD revenue. Data analysis was carried out using the following formula:

### Effectiveness of PBB-P2

$$\text{Efektivitas PBB} - \text{P2} = \frac{\text{Realisasi Penerimaan PBB} - \text{P2}}{\text{Target Penerimaan PBB} - \text{P2}} \times 100\%$$

After knowing the level of effectiveness in percentage form, the next step is to evaluate the effectiveness value criteria. The higher the percentage of effectiveness, the higher the expected results. The following is the process of measuring effectiveness criteria:

**Table 1.** Effectiveness Criteria

Effectiveness Value Interpretation Table	Percentage criteria
More than 100%	Highly Effective
90-100%	Effective
80-90%	Effective Enough
60-80%	Less Effective
Less than 60%	Ineffective

Source: Ministry of Home Affairs, Kepmendagri Number 690.900.327 Year 1996

### Contribution of PBB-P2 to PAD

The formula used to assess the contribution of Rural and Urban Land and Building Tax (PBB-P2) to Local Original Revenue (PAD) is as follows:

$$\text{Kontribusi PBB} - \text{P2} = \frac{\text{Realisasi Penerimaan PBB} - \text{P2}}{\text{Realisasi Penerimaan PAD}} \times 100\%$$

**Table 2.** Classification of Contribution Criteria

Effectiveness Value Interpretation Table	Performance Percentage
0,00-10%	Very Less
10,10-20%	Less
20,10-30%	Medium

30,10-40%	Good enough
40,10-50%	Good
Less than 50%	Very good

Source: Research and Development Team of the Ministry of Home Affairs- Fisipol UGM 1991

## Results and Discussion

**Table 3.** Target and Realization of PBB-P2 in Air Salemba Village

Year	Target	Realization
2022	IDR 459,867,834	IDR 354,098,232

Source: Set of Tax Assessment & Payment 2022

Based on the data in table 3, the target revenue of Land and Building Tax of Air Salemba Village (PBB-P2) in 2022 is Rp 459,867,834, while for the realization of Rural and Urban Land and Building Tax Revenue (PBB-P2) in 2022 is Rp 354,098,232.

### Realization of PAD in Air Salemba Village

**Table 4.** Realization of Local Revenue of Air Salemba Village

Year	Realization
2022	IDR 3,281,176,047

Source: Set of Tax Assessment & Payment 2022

Based on the data in table 4 above, the Regional Original Revenue of Air Salemba Village, Pangkalpinang City in 2022 is Rp 3,281,176,047. This means that the Regional Original Revenue or PAD in Kelurahan Air Salemba has a fairly large realization rate, in accordance with the number of residents, businesses, and the high level of public awareness to pay Rural and Urban Land and Building Tax (PBB-P2).

### Calculation of Effectiveness of PBB-P2 Revenue

**Table 5.** Effectiveness Level of PBB-P2 Revenue in Air Salemba Village

Year	Target	Realization	Effectiveness	Criteria
2022	IDR 459,867,834	IDR 354,098,232	76,9%	Less Effective

Source: Data processed (2023)

Based on the data in table 5 above, it shows that in 2022 the achievement of Land and Building Rural and Urban Tax (PBB-P2) revenue has not reached the predetermined target. Based on Kepmendagri No. 690.900.327 of 1996, the effectiveness in 2022 was 76.9%, so the performance can be categorized as less effective. The role of PBB P-2 towards Local Own Revenue (PAD) in Air Salemba Village in 2022 is considered less than optimal and has not reached the expected level of effectiveness.

### Analysis of the Contribution of Rural and Urban Land and Building Taxes (PBB-P2) to the Regional Original Revenue (PAD) of Air Salemba Village

**Table 6.** Contribution Rate of PBB-P2 to the PAD of Air Salemba Village

Year	Realization of PBB-P2	PAD Realization	Contribution	Criteria
2022	IDR 354,098,232	IDR 3,281,176,047	11%	Less

Source: Data processed (2023)

Based on the data in table 6 above, it shows that in 2022, the contribution of PBB-P2 to the Regional Original Revenue (PAD) of Air Salemba Village is 11%, meaning that it is included in the criteria of Less in the contribution of PBB-P2 in the Regional Original Revenue (PAD). This factor can be influenced by annual budget requirements, development progress, and the availability of infrastructure in supporting PBB-P2 collection activities.

### Conclusion

From the results and discussion of the effectiveness and contribution of PBB-P2 to PAD in Air Salemba Village, Pangkalpinang City in 2022, it can be concluded that the level of effectiveness is categorized as less effective. Although, the level of effectiveness is categorized as effective criteria because the realization of revenue is in accordance with the predetermined revenue target. The level of PBB-P2 contribution to PAD is still less effective. Kelurahan Air Salemba is one of the highest PBB-2 tax revenues in Gabek Sub-district but its contribution to PAD is not significant.

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## **ANALYSIS OF THE INFLUENCE OF PEPPER PLANTATIONS ON ECONOMIC GROWTH BANGKA BELITUNG ISLANDS PROVINCE**

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**Abstract:** With abundant natural resources, Bangka Belitung Province is one of many provinces in Indonesia with a developing economic sector. One of the influences is white pepper, where the aim of this research is to examine the development of pepper production on the economy of Bangka Belitung. With a qualitative descriptive method using note-taking techniques and library techniques to accumulate data. The object of this research is pepper. In particular, in the Bangka Belitung Islands, pepper is known by the nickname sahang by the local community. Bangka Belitung pepper has a level of spiciness that exceeds the standards of other regions and a distinctive smell, namely the strong smell of essential oils. Based on the data obtained. From the results of this research, the Bangka Belitung Islands experience unstable developments in the pepper plantation sector every year, where production experiences significant increases and decreases.

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### **Introduction**

Bangka Belitung generally has plantation land which is dominated by dry land and the soil type is podzolic so it lacks nutrients, and results in low fertility levels and is less suitable for plantation land. However, white pepper is one of the spices that people usually use to add a spicy and savory taste to food. People use pepper as a herbal and anti-bacterial medicine. White pepper in Bangka Belitung is one of the largest and best producers of quality pepper in Indonesia. Pepper is a plantation product that is quite dominant in the people of Bangka Belitung, because of its high marketability and different taste.

Judging from the interest of the people of Bangka Belitung who are predominantly involved in the pepper plantation business, Indonesia as a primary producer on the world market is included in

the group of traditional producers (Indonesia, Malaysia, India and Brazil). The white pepper or sahang typical of the Bangka Belitung Islands region which was issued by the Ministry of Law and Human Rights of the Republic of Indonesia Number 000000004 on April 28th 2010 has been certified as a Geographical Indication (IG). Therefore, it is not uncommon for white pepper to be produced in Kep. Bangka Belitung is an area that has high appeal for several countries in the world. With a distinctive spice taste and high quality, it has attracted many people from around the world. Kep's specialty white pepper. Bangka Belitung has piperine (spiciness level) which is quite high, namely 5-7% and a strong aroma of essential oils. However, it is very unfortunate that the land that was previously used for pepper plantations has now changed its function to become an

unconventional tin mine (TI). Because of this, the area of pepper plantations continues to decrease from year to year.

Based on data from the Mining, Plantation and Livestock Service of the Bangka Belitung Islands Province, South Bangka Regency has a pepper plantation area of 23 hectares in Bangka Belitung, 7 hectares in Bangka Regency, 7 hectares in Belitung, 5 hectares in West Bangka Regency, 3 hectares in East Belitung. land, and Central Bangka covering an area of 2 hectares. The community's activities from growing pepper have shifted to tin mining, which has affected the lifestyle of the people of the Bangka Belitung Islands province. Now, it is not uncommon for some people in Kep. Bangka Belitung, which previously shifted direction to unconventional tin mining (TI), has shifted back to the plantation or agricultural sector. This factor is caused not only by the price of pepper being relatively stable and not causing damage to nature, but also because the supply of tin is starting to decrease day by day, followed by the price of tin which tends to continue to decline and is even unstable, becoming one of the considerations for the community to change their livelihoods from mining to mining. plantation or agriculture.

## Literature Review

Ginting, (2020:1) stated that the Bangka Belitung Islands are an area whose main area is pepper production, where the pepper produced is Kep. Bangka Belitung is a white pepper known by the brand image name Muntok white pepper. However, in (2002-2008) the level of pepper production in Babylon experienced a drastic decline. Bangka Belitung's involvement in pepper production and planting area was recorded in (Department of Agriculture and Forestry of Bangka Belitung Islands Province) as reaching 64,572 Ha, however this decreased to 45,834 Ha (2004), and fell again to 40,720 Ha (2006).

Ginting, (2020:1), there are 3 main problems related to the decline in pepper production in Bangka Belitung, namely the selling price of pepper at the grower level, business opportunities other than pepper, and the implementation of maintenance technology by farmers. These three main problems have a significant influence on

pepper production. So at that time Bangka district will be designated as the location for research objects on the decline in pepper production (2004-2008).

Pepper is a plant that takes quite a long time to harvest, it takes around 3 years from the beginning of the planting process to the time of harvest, after the harvest period once then the pepper can be harvested once a year regularly, depending on the age of the pepper plant itself can only last around 6-7 years depending on the growth care. White pepper in Bangka Belitung is the best pepper with an aroma that can be smelled from afar because it contains high levels of essential oils, while black pepper from Lampung is a reference for quality pepper.

## Method

The research method that will be used in this research is a qualitative research method. Qualitative research is used to describe and analyze phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of people individually and in groups. Qualitative research methods are used to research the conditions of scientific objects, (as opposed to experiments) where the researcher is the key instrument, data collection techniques are carried out by triangulation (combination) data analysis is inductive or qualitative, and the researcher's qualitative results emphasize meaning rather than generalization. This research is to analyze the influence of pepper plantations on the economic growth of the Bangka Belitung Islands Province.

## Results and Discussion

Pepper is a major commodity that has a very important position in Indonesian history. Indonesia has been an important supplier for the world pepper trade, since the end of the 16th century. Indonesia is the third country in the world with the largest pepper plantations. Even today, pepper is still the largest foreign exchange contributor. Sourced from the Central Statistics Agency, the export value of pepper in the 2018-2022 era reached USD 775 million. Where in that period the average trading volume reached 45 thousand tons.

Pepper production in 2022, carried out by People's Plantations (PR) and Large Private Plantations (PBS), will produce 89.28

thousand tons of pepper. The majority of pepper production in Indonesia comes from the Bangka Belitung and Lampung Islands with respective contributions of 37.48% and 17.61% (average of the last five years), while other provinces only have less than 10% involvement. In 2023, pepper production in Indonesia is predicted to produce 83.70 thousand tons of pepper. This production is estimated to continue to increase until it reaches 84.44 thousand tons in 2026. Over the next few years (2022-2026) average production is estimated at 0.55% per year.

Based on data obtained in 2022, in Central Bangka district the area of pepper plantations reached 3,554.48 ha with a production capacity of 2,896.87 tons, and the average pepper harvest was 1.8 tons per hectare. Talking about the Bangka Belitung Islands province, apart from being popular for its beautiful tourist attractions, one of which is the beach, it is not uncommon for many people to say that Kep. Bangka Belitung is a tin commodity. In fact, Bangka Belitung's natural wealth is not only in tin mines, but the area known as Serumpun Sebalai is also famous for its spice, namely white pepper.

This white pepper typical of Bangka Belitung is famous for its quality throughout the world, because of its unique characteristics that do not exist in other areas, such as Lampung, Bengkulu, Kalimantan and Sulawesi. It is not surprising that pepper is one of the leading commodities that has become rapidly popular on the market. The pepper produced by the Bangka Belitung Islands province is a superior agricultural product of high quality and has been a crop for generations among the people of Bangka Belitung.

Yulia & Bahtera, (2020:2) Pepper has become a symbol and genetic resource of the Bangka Belitung Islands which is famous for its MWP (Muntok White Pepper). The white pepper or sahang typical of the Bangka Belitung Islands region which has been issued by the Ministry of Law and Human Rights of the Republic of Indonesia Number 000000004 dated January 21 2010 has been certified as a Geographical Indication (IG). The characteristic quality and taste of white pepper differentiates it

from other regions. Therefore, it can attract great attention in several countries around the world. Babylonian white pepper contains 5-7% piperine (spiciness level) which is quite high and has a distinctive aroma because of its pungent essential oil.

Pepper is one of the spices that people often use, for example to add a spicy taste, as a food flavoring and to eliminate the fishy smell of food. Bangka Belitung is one of the highest pepper producing provinces, followed by Lampung, West Kalimantan, East Kalimantan, Papua, West Nusa Tenggara, North Maluku and Yogyakarta. Even though pepper is of high quality and is the largest producer in Indonesia, in Bangka Belitung the presence of pepper has decreased from year to year, both in area and production. In 2018-2022, based on data from the Bangka Belitung Provincial Agriculture Service, in 2019 there was an increase, but in 2020-2022 there was a quite sharp decline in pepper product output, both in surface area and output.

The pepper planting area in 2018 reached 51,404 hectares and increased the pepper planting area to 52,688 hectares in 2019. However, the pepper planting area decreased to 52,192 hectares in 2020. This decline did not stop in 2020 but will continue in 2021. 49,465 hectares and will decrease again in 2022 to 44,548 hectares. If we look at the output, it is comparable to the pepper planting area, where in 2018 the pepper harvest reached 32,810 tons and increased to 33,458 tons in 2019. Meanwhile, pepper output tended to decline in 2019. 2020 was 29.44 tons and will continue. In 2021, pepper production will only be 27,167 tons, while in 2022 pepper production will only be 26,408.82 tons. The decline in land and pepper production was caused by the spread of the Covid-19 outbreak and the price of pepper on the global market.

The decline in pepper plantation area and production in the Bangka Belitung Islands is due to pepper farmers preferring to work as tin miners and palm oil plantations, this is also accompanied by a decline in the price of white pepper. Based on developments in the last few years, pepper prices have increased and also decreased. In 2018 to 2019 the price of pepper was around IDR 50,000- IDR 60,000. And it will continue to decline in 2020. The

price of pepper will start to increase rapidly in 2021-2023 now. Currently, the price of pepper is in accordance with Bappetti regarding information on the price of white pepper commodities, especially Bangka, at IDR 83,000.

The Bangka Belitung area is filled with pepper plantations. Where the pepper that grows in the Bangka Belitung Islands has a very important role or has a very big influence on the economy of the people of Bangka Belitung. However, it is very unfortunate, pepper plantations, which were previously occupied by many people, are now decreasing day by day because many people have switched jobs to become tin miners or switched to palm oil plantations. This is because the price of pepper is often unstable. If this continues, pepper production in the Bangka Belitung area will continue to decline every year and the pepper commodity population will decrease or even become scarce.

Pepper is a spice plant that plays a very important role in the Indonesian economy, this is because pepper is used as a source of foreign exchange for the country. The Bangka Belitung Islands are an area that contributes foreign exchange. There is no need to doubt the quality of the pepper produced in Bangka Belitung, the level of spiciness of the pepper exceeds the standard, this is what makes Bangka Belitung pepper superior.

Pepper is one of the most important spices among other spices, this is seen from the aspect of its very unique importance. The prospects for the pepper commodity in Indonesia can be seen from the potential of the domestic market with the increasing development of the food industry, health and cosmetics industry, as well as other industries that use pepper as a raw material. If pepper production in Bangka Belitung Province decreases, the amount of foreign exchange will also decrease. Of course, this really affects the economy of the people of Bangka Belitung. Pepper plantations are one of the main livelihoods of the community. If the pepper population continues to decline and even becomes scarce, the community will find it difficult to find a livelihood, this could result in the community having difficulty meeting their daily needs. Because of this, pepper plays a very important role

and even has a big impact on local communities.

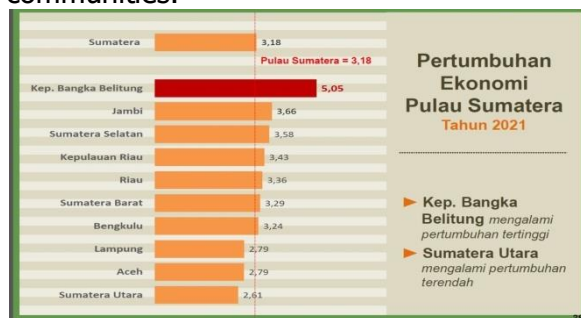


Figure 1. Economic growth of Sumatra Island

Dwi Retno Wilujeng Wahyu Utami (Head of BPS Babel) said that "Economic growth on the island of Sumatra in 2021 will grow by 3.18 percent. "The Bangka Belitung Islands experienced the highest growth in all of Sumatra Island and North Sumatra experienced the lowest growth".

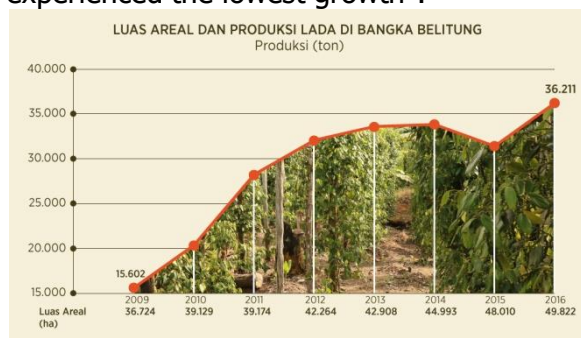


Figure 2. Plantation area and pepper production in Bangka Belitung

The picture shows the development of area and pepper production in Bangka Belitung in the period 2009 to 2016. In 2016 Bangka Belitung was recorded as the largest national pepper producer with production of 31,408 tonnes and productivity of 1.26 tonnes per hectare. However, behind the development of pepper production there are several obstacles experienced by the local community. Even though pepper plants have a fairly high selling value, the expansion of pepper plantations in Bangka Belitung is experiencing a slowdown. The obstacle is the very high investment costs in pepper, such as using dead poles to propagate pepper plants, around 2,000 stems per hectare, reaching IDR 50 million. These poles only last around 2-3 years, therefore the poles used must be replaced frequently.

## Conclusion

Based on the results of the discussion, it can be concluded that most of the land in the Bangka Belitung Islands, especially Central Bangka Regency, is suitable for cultivating pepper plants with a plantation area of 3,554.48 ha and a production capacity of 2,896.87 tonnes, and the average pepper harvest produced is as much as 1.8 tons per hectare. And judging from the results of observations of farmers' income and the feasibility of businesses that are still profitable to continue developing pepper plantations. From the calculation of marketing margins, farmer's share and profitability index parameters, it has been indicated that the marketing performance of white pepper commodities is relatively efficient.

The Bangka Belitung Islands Province, especially Central Bangka Regency, needs to immediately carry out plans to build a pepper processing factory by bringing in investors, considering that in this area there is a fairly large availability of raw materials to improve the regional economy. This needs to be done to anticipate the decline in pepper prices in the international market which is integrated into the domestic market to increase the role of extension workers and activate farmer groups in the community to increase the quantity and quality of pepper produced to increase the bargaining position of farmers in the pepper marketing business in Bangka Belitung.

## Acknowledgement

Thank you to JAMBE: Jurnal Akuntansi Manajemen Bisnis dan Ekonomi for accepting and publishing our article. Hopefully this article can provide benefits for writers and readers.

## Conflict of Interest

The author has published this article because in the author's opinion, with abundant natural resources, Bangka Belitung Province is one of the many provinces in Indonesia whose economic sector is developing. One influence is white pepper, where the aim of this research is to examine the development of pepper production on the economy of Bangka Belitung.

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## THE CAUSALITY RELATIONSHIP OF STATE SUKUK WITH ECONOMIC GROWTH IN INDONESIA AND MALAYSIA

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**Abstract:** Economic growth is an indicator of the success of a country's development. The higher the economic growth, the higher the welfare of society. Issuance of State Sharia Securities (SBSN) or State Sukuk as one of the APBN sources and is used to finance economic development in order to increase Gross Domestic Product (GDP). This research aims to determine the causality and long-term relationship between Government Sukuk (SBSN) and Economic Growth (GDP) in Indonesia and Malaysia. The method used in this research is the Vector Autoregression (VAR) model with quarterly data from 2009 to 2018. It is concluded that the relationship between SBSN and Indonesia's GDP is a unidirectional relationship where State Sukuk influences Indonesia's GDP. There is no causal relationship, either unidirectional or bidirectional, between Government Sukuk and Malaysian GDP. There is a long-term relationship between Government Sukuk and GDP in Indonesia and Malaysia. The importance of developing sukuk encourages financial inclusion, stimulates investment and economic growth.

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### Introduction

In increasing economic growth, each country invests in various things, not only increasing the production of goods and services from year to year, but also investing in other things such as educational development, technological development, improvements in health, improvements in available infrastructure and improvements in community income and prosperity. Therefore, economic development includes various aspects of changes in economic activity.

Economic growth is an indicator of the success of a country's development. The higher the economic growth, the higher the social welfare (Sukirno, 2000: 13). Therefore, economic growth requires investment in economic development. Capital investment activities produce

investments that will continue to increase the capital stock. Increasing the capital stock will increase productivity as well as production capacity and quality, which in turn can encourage economic growth and increase labor absorption and improve the welfare of society.

Theoretically, the level of economic growth is positively correlated with investment as stated by the classical economist Adam Smith, namely the process of capital accumulation (Jhingan, 2007: 82). Smith considers the cultivation of capital to be an absolute condition for economic development, thus the problem of economic development broadly is human ability to save and invest more capital. Thus the level of investment will be determined by the level of savings and fully invested savings.

The opinion of other economists regarding economic growth, such as John Stuart Mill, considers economic development as a function of land, labor and capital (Jhingan, 2007: 105). Josep Alois Schumpeter believes that economic development is primarily created by the initiative of innovative entrepreneurs or entrepreneurs (Sukirno, 2007: 251). Keynes suggested that the government increase spending because it viewed the government as an independent agent capable of stimulating the economy through public works. During a recession, an increase in government spending (G) will encourage consumption (C) and investment (I), and therefore increase national income (Y) (Jhingan, 2003: 133-134).

The economic growth of each country can usually be seen from its national income, which means the value of goods and services produced in a country in a particular year and conceptually this value is called gross domestic product (GDP). This value can be calculated according to current prices (i.e. prices in effect in the year in which GDP is calculated) and according to fixed prices, i.e. prices in effect in the base year.

By calculating according to fixed prices, real national income calculated from year to year describes the actual development of production of goods and services in the economy. Thus, the level of economic growth describes the development of economic activities that occur in a particular year. It describes the extent to which goods and services have increased in a particular year when compared with the previous year.

Indonesia and Malaysia, as countries with predominantly Muslim populations, are trying to develop sharia-based investments in an effort to increase their economic growth. As a Muslim and a country with a Muslim majority population, of course the government must facilitate the needs of its people in making transactions and investing in accordance with Islamic law in order to avoid usury, gharar, maysir and other things that are prohibited in Islam.

One of the investment instruments issued by the Indonesian and Malaysian governments to support their economic growth is state sharia securities or state

sukuk. State Sharia Securities, hereinafter abbreviated as SBSN, or can be called State Sukuk, are SBN issued based on sharia principles, as proof of participation in SBSN assets, both in rupiah and foreign currency (PBI No.17/19/PBI/ 2015). The issued state sukuk becomes one of the sources of the APBN to be used later in the development of a country with the hope of increasing economic growth and improving the welfare of its people.

In the issuance of State Sukuk (SBSN), there are several important elements, including 1) The parties involved in the issuance, including; government, third parties who facilitate the issuance (Special Purpose Vehicle), Sharia Compliance Endorsement (SCE) to guarantee that SBSN complies with sharia principles, SBSN holders which are investors and Bank Indonesia as paying agent responsible for receiving and paying funds from the SBSN issuance. 2) Object of publication, which includes; State Property (BMN)/project and SBSN transaction funds. Lastly, 3) Agreements based on contracts which function as the basis for transactions (underlying transactions) (Amin, 2016).

One of the most important elements in the issuance of State Sukuk (SBSN) is the object of issuance, whether in the form of state property (BMN)/projects or SBSN transaction funds. This is what makes SBSN interesting because it contains objects to be transacted (underlying assets). Sukuk issued by the state are usually used for infrastructure development such as bridges, freeways (toll roads), Hajj dormitories, railway lines, and many others for the benefit of society in general.

The development of state sukuk in Indonesia after the issuance of Law no. 19 of 2008 concerning Government Sharia Securities in early 2009, the government issued retail Government Sukuk (SBSN) series SR-001 and global sukuk SNI 14. For the issuance of global Government Sukuk (SBSN) amounting to 650 million US dollars, it was over subscribed up to 7 times fold or 4.7 billion US dollars. Meanwhile, corporate sukuk issuance in 2009 amounted to IDR 2.070 trillion. An increase of 34.94 percent compared to 2008 of IDR 1.534 trillion.

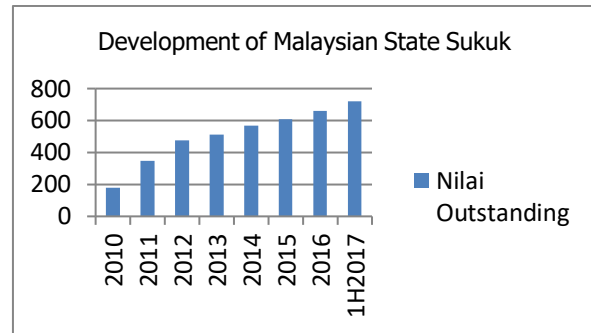


Source: Financial Services Authority 2019

**Figure 1.1:** Development of Indonesian Sovereign Sukuk

As of the end of December 2016, the number of Government Sukuk (SBSN) in circulation was 53 or 32.70% of the 159 total outstanding government securities. If viewed from the nominal value side, the outstanding value of Government Sukuk (SBSN) reached IDR 411.37 trillion with a proportion reaching 14.82% of the total outstanding value of government securities of IDR 2,775.93 trillion. From year to year, the development of state sukuk shows positive movements. With this increase in state sukuk issuance, Indonesia is included in the top five sukuk issuing countries in the global market (OJK, 2019).

In Malaysia, the development of sukuk has been very rapid in financing Malaysia's economic development, starting with the issuance of RM 125 million by Shell MDS Sdn. Bhd. In 1990, the Malaysian sukuk market continued to grow in terms of volume and experience. Malaysia is a leading country in the development of sharia finance. Malaysia has become the largest sukuk market considering the fact that almost 70% or \$62 billion of the total global sukuk issuance until the end of 2007 was issued in Malaysia. Meanwhile, the total issuance of corporate sukuk until 2007 had reached RM 30 billion (Financial Stability and Payment Systems Report, 2007).



Source: IIFM Sukuk Report 2018

**Figure 1.2:** Development of Malaysian Sovereign Sukuk

The Sukuk market in Malaysia continues to grow supported by Malaysia's conducive issuance environment, facilitative policies for investment activities and comprehensive Islamic financial infrastructure. Malaysia maintained its leadership by country with a market share of 28.8% in the first half of 2017. Malaysia recorded RM138.7 billion (+20.6% yoy) of sukuk issuance at the end of October 2017. This growth was led by increased issuance by quasi-government (+ 32.2% or RM 38.2 billion), government (+ 17.7% or RM 46.5 billion) and corporate sector (+ 17.7% or RM 54.0 billion). Malaysia not only leads the sukuk market in terms of its volume, but also in terms of innovative and competitive variations in sukuk structures in order to attract a wider range of investors (IIFM Sukuk Report, 2018).

The availability of financing sources is very important in a country's economic development. Sharia financing sources are increasingly developing over time, in fact the development is not only in areas dominated by Muslim-populated countries, the development of sharia financing sources now covers a world scale. This is because the development of sharia finance has become a driver of economic development that connects the financial sector and the real sector. Sukuk, which in transactions require an underlying asset that is required to have economic value, allows sukuk to stimulate growth in the financial sector and the real sector which will increase Indonesia's Gross Domestic Product (GDP).

Houcem and Salem (2017) explain that the development of the sukuk market has encouraged financial inclusion, which stimulates investment and economic growth. Bidisha, Rudra and Mete (2011) in their

research explained that there is a significant influence between financial development and economic growth in Indonesia, Singapore, the Philippines, China and India, while Thailand has a two-way influence between financial development and economic growth. Kassim (2016) explains that Islamic finance is starting to make an important contribution to the real economy by carrying out the role of financial intermediation to collect and channel funds for investment activities.

Investment in State Sharia Securities (SBSN) or commonly known as State Sukuk is the government's effort in several ways, including 1) Expanding the base of state budget financing sources; 2) Encourage the development of sharia financial markets; 3) Creating benchmarks in the Islamic financial market; 4) Diversification of investor base; 5) Developing alternative investment instruments; 6) Optimizing the use of State Property; and 7) Utilizing public funds that have not been captured by the conventional banking system.

This research tries to prove empirically that State Sukuk (SBSN) has a two-way relationship with Economic Growth, especially in the world's largest Muslim countries so that in the long term the government can use State Sukuk (SBSN) as an alternative source of state financing that avoids continuous usury. continuously so that it can replace the Government Securities (SBN) that have been used so far, and as an investment option for both Muslim and non-Muslim communities.

## Literature Review

To find out the extent of this research, the researcher collected several previous studies related to this research. This research tries to look at the causality and long-term relationship between State Sharia Securities or Government Sukuk and Economic Growth in Indonesia and Malaysia using the Vector Autoregression (VAR) analysis tool.

Previous research conducted by Smaoui and Nechi (2017), investigated the impact of sukuk market development on economic growth using a sample consisting of all sukuk issuing countries in the 1995-2015 period. This research suggests that the development of the sukuk market is

conducive to economic growth, even after controlling for various measures of financial market development, institutional quality, and classical determinants of economic growth. This research concludes that the development of the sukuk market has encouraged financial inclusion, which stimulates investment and economic growth.

Bidisha, Rudra and Mete (2011) investigated the causal relationship between financial development and economic growth for Thailand, Indonesia, Malaysia, the Philippines, China, India and Singapore in the period 1979-2009. This research shows that in the cases of Indonesia, Singapore, the Philippines, China and India financial development influences economic growth, while in the case of Thailand there is a two-way causal relationship between variables. The results further show that in the case of Malaysia financial development does not affect economic growth.

Rihab and Gazdar (2014) tried to compare the effects of Islamic financial developments and conventional financial developments on economic growth for five GCC countries (Bahrain, Kuwait, Qatar, Saudi Arabia and the UAE). Using generalized least squares, OLS, and panel data framework for the period 1996-2011. This research shows that Islamic finance leads to growth in five GCC countries, but no significant relationship is observed between the development of conventional finance and economic growth. The findings of this research suggest the need to accelerate financial reforms for Islamic finance and to increase the efficiency of the Islamic financial system as well as to stimulate savings/investment and, in the long term, influence economic growth.

Zirek, Duygu, Fusun and Hassan (2016) investigated the impact of Islamic banking variables on economic growth in 14 member countries of the Organization of Islamic Countries during the period 1999-2011. This research looks at short-term and long-term relationships using the VAR panel method. The results of this research show a positive and significant relationship between Islamic finance and economic growth. This relationship is related to several macroeconomic variables such as capital stock, unemployment, inflation, and government spending. This research shows

that increasing the share of Islamic deposits, assets and loans in total banking instruments results in increased economic growth. In the long term, economic growth responds positively to shocks to Islamic instruments, namely deposits, investment and sharia measures.

Nader and Shawkat (2016) investigated the dynamics of co-movement and the causal relationship of returns on GCC sukuk (Islamic bonds) with global financial difficulties and various uncertainty factors (including financial markets, commodities and economic policy uncertainty indices), this study uses quantile regression analysis. The empirical results show that these global financial, economic and oil policy uncertainties have a negative impact and causality effect on GCC sukuk returns, which are limited to lower quantiles. Global financial distress has a negative impact and causality effect on GCC sukuk but only for the top quantile (when sukuk returns are high). Interestingly, GCC sukuk returns are not affected by conventional bond market and gold market uncertainty. For comparison purposes, this study examines the impact of global financial stress and uncertainty factors on the global sukuk index, which is much broader than the GCC index, and finds that this index is mainly affected by global conventional bond market uncertainty. The results of this study indicate that GCC sukuk are more sensitive to global uncertainty factors, especially in the tail distribution, which offers investors different investment alternatives and portfolio diversification opportunities.

Widodo (2018) tries to see the influence of the sharia capital market on Indonesia's economic growth. The methods used are Vector Autoregressive (VAR) and Vector Error Correction Model (VECM). The results of this research are that sharia shares have a significant positive effect on GDP in the long term, but have no effect in the short term with a contribution to GDP of 30%. Sukuk have a significant positive effect on GDP in the short term, but have no effect in the long term with a contribution of 14% to GDP. Sharia mutual funds have no effect on GDP, both short and long term.

This research is a development research from previous research, especially those related to State Sukuk and Economic

Growth. Previous studies have looked more at the unidirectional influence of each macroeconomic variable, such as the influence of macroeconomic variables on demand for Sovereign Sukuk. Meanwhile, this research is about the two-way influence between the State Sukuk variable and Economic Growth in Indonesia and Malaysia. The reason for this research stems from the researcher's self-awareness of the development of Sharia Economics in general, especially in Indonesia and the researcher's interest in the characteristics of sukuk issued by each country.

## Method

Judging from the nature of the data, the type of research used in this research is a quantitative research method. Quantitative research is a research approach that requires a lot of use of numbers, starting from data collection, interpretation of that data, and the appearance of the results (Arikunto, 2006: 11). The data that has been collected is then processed through a process in such a way as to produce information that is useful for decision making. This research explains the causal relationship between State Sukuk (SBSN) and Economic Growth in Indonesia and Malaysia. The analytical tool used in this research is the Vector Autoregression (VAR) model with the help of Eviews 7 software. The population in this research is the State Sukuk (SBSN) issued by Indonesia and Malaysia and the Economic Growth of the two countries.

The sample is a portion of the population. The sample consists of a number of members selected from the population. In other words, some, but not all elements of the population form the sample (Sekaran, 2017: 54). The sample for this research is the outstanding State Sukuk (SBSN) of Indonesia and Malaysia, as well as the economic growth of Indonesia and Malaysia for the quarterly period from 2009 to 2018.

The analysis uses quantitative methods to see the interdependence between existing variables using Vector Autoregression (VAR), according to the opinion of Widarjono (2007: 372) who says "VAR is a model that is able to analyze the interdependence relationship of time series variables. The VAR model assumes that all economic

variables are interdependent with each other."

This model is often used as a forecasting system related to time series data and to analyze the dynamic impact of random disturbances on system variables. The VAR approach is carried out by forming a model structure by treating each endogenous variable in the system as a function of all the lagged values of the endogenous variables in the system (Sugiyanto, 2007: 7.15).

## Results and Discussion

### 1. Descriptive analysis

Descriptive analysis is used to see the development of a variable used in the research studied by the author. This research uses Vector Autoregression (VAR) research, where each variable is assumed to be an independent variable. The variables used in the research that the author wants to examine are State Sukuk (SBSN) and Economic Growth in Indonesia and Malaysia. Before conducting further research using Vector Autoregression (VAR), the data will first be presented using descriptive statistics. Descriptive statistics is a part of statistics that studies how to collect data and present it in a form that is easier and quicker to understand (Subagyo & Djarwanto, 2005). Descriptive statistics can be presented in the form of average values (mean), standard deviation, maximum and minimum values (Ghozali, 2011). The following are the data characteristics of the two variables:

**Table 4.1:** Descriptive Statistics Results for SBSN and GDP Variables Indonesia.

Variabel	SBSN (Milyaran Rupiah)	GDP (Milyaran Rupiah)
Mean	228126,6	2073984,
Median	168786,5	2081092,
Maximum	650798,5	2684194,
Minimum	8404,000	1317409,
Std. Dev.	201116,5	359414,5
Skewness	0,729559	-0,266860
Kurtosis	2,223128	2,308052
Observations	40	40

From table 4.1 we can see that the average Government Sukuk (SBSN) in Indonesia for the period 2009 to 2018 was 228,126.6. Then for the maximum value of 650,798.5 the minimum value is 8,404.0 and with a standard deviation of 201,116.5.

As for the GDP variable, the average value from 2009 to 2018 was 2,073,984. The maximum value is 2,684,194. Meanwhile, the minimum value is 1,317,409 with a standard deviation of 359,414.5.

**Table 4.2:** Descriptive Statistics Results for SBSN and GDP Variables Malaysia.

Variabel	SBSN (RM Million)	GDP (RM Million)
Mean	9362.352	241560.2
Median	8846.050	246147.0
Maximum	21122.90	322600.0
Minimum	1056.000	128259.0
Std. Dev.	6435.317	50045.17
Skewness	0.272263	-0.767910
Kurtosis	1.678984	3.238553
Observations	40	40

Source: Eviews 7 Sports Results, 2019

The output of the processed data shows that the average value of the State Sukuk (SBSN) variable in Malaysia in the period 2009 to 2018 was 9,362,352. Then the highest value is 21,122.90. the lowest value was 1,056.0 with a standard deviation of 6,435.317.

For data on the GDP variable from 2009 to 2018, it shows that the average value is 241,560.2. The highest value for the GDP variable is 322600.0. The lowest value is 128,259.0 with a standard deviation value of 50,045.17.

### 2. Data Stationarity Test

Stationary is a condition of time series data where the average, variance and covariance of these variables are completely unaffected by time (Juanda & Junaidi, 2012). The stationarity and unit root testing methods that will be used here are three types of methods, including Augmented Dickey Fuller (ADF), Dickey-Fuller (DF), and Philips-Perron (PP). The procedure for finding out whether data is stationary or not is by comparing the t-statistic value with the critical value. If the t-statistic statistical value is greater than the critical value then the data is stationary, but if the t-statistic value is smaller than the critical value then the data is not stationary.

**Table 4.3:** Results of the Stationarity Test of Indonesian Government Sukuk (SBSN) Data

Uji	Prob	ADF	Test critical values
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Augmented Dickey Fuller		test statistic	1% Level	5% Level	10% Level
ADF Pada Level	0.99	-0.14	-4.22	-3.53	-3.20
ADF Pada 1st Difference	0.00	-7.22	-4.22	-3.53	-3.20
Uji Dickey Fuller	Prob	DF test statistic	Test critical values		
DF Pada Level	-	-1.39	-3.77	-3.19	-2.89
DF Pada 1st Difference	-	-6.96	-3.77	-3.19	-2.89
Uji Philip Pheron	Prob	PP test statistic	Test critical values		
PP Pada Level	0.99	-0.21	-4.21	-3.52	-3.19
PP Pada 1st Difference	0.00	-11.81	-4.21	-3.53	-3.19

From table 4.3, the results of the stationarity test of Indonesian Government Sukuk (SBSN) data, it can be seen that the Indonesian SBSN variable is not stationary at level level in several types of tests that researchers carried out with the statistical probability value having to be <0.05 and with the t-statistic value having to be more greater than MacKinnon's critical value. The SBSN variable requires a unit root test again at the 1st difference level and it can be seen that the statistical probability value is smaller than 0.05. It can be concluded that the government sukuk (SBSN) data is stationary at the 1st difference level.

**Table 4.4:** Results of the Stationarity Test of Indonesian Economic Growth Data (GDP).

Uji Augmented Dickey Fuller	Prob	ADF test statistic	Test critical values		
ADF Pada Level	0.96	0.15	-3.63	-2.94	-2.61
ADF Pada 1st Difference	0.00	-3.96	-3.63	-2.94	-2.61
Uji Dickey Fuller	Prob	DF test statistic	Test critical values		
DF Pada Level	-	2.09	-2.63	-1.95	-1.61
DF Pada 1st Difference	-	-2.76	-2.63	-1.95	-1.61
Uji Philip Pheron	Prob	PP test statistic	Test critical values		
PP Pada Level	0.59	-1.98	-4.21	-3.52	-3.19
PP Pada 1st Difference	0.06	-3.41	-4.21	-3.53	-3.19
PP Pada 2nd Difference	0.00	-7.81	-4.22	-3.53	-3.20

PP Pada Level	0.25	-2.07	-3.61	-2.93	-2.60
PP Pada 1st Difference	0.00	-6.75	-3.61	-2.94	-2.60

In table 4.4 above for the Indonesian GDP variable it turns out that it is not stationary at level level in several types of stationary tests that were carried out and the test was carried out again at the 1st difference level. It can be concluded that the Indonesian GDP variable is stationary at the 1st difference by looking at the statistical probability value which is smaller than 0.05 or comparing the t-statistic value which is greater than the critical value.

**Table 4.5:** Stationarity Test Results for Malaysian Government Sukuk Data (SBSN).

Uji Augmented Dickey Fuller	Prob	ADF test statistic	Test critical values		
ADF Pada Level	0.38	-2.38	-4.25	-3.54	-3.2
ADF Pada 1st Difference	0.01	-4.21	-4.24	-3.54	-3.20
Uji Dickey Fuller	Prob	DF test statistic	Test critical values		
DF Pada Level	-	-2.79	-3.77	-3.19	-2.89
DF Pada 1st Difference	-	-3.37	-3.77	-3.19	-2.89
Uji Philip Pheron	Prob	PP test statistic	Test critical values		
PP Pada Level	0.59	-1.98	-4.21	-3.52	-3.19
PP Pada 1st Difference	0.06	-3.41	-4.21	-3.53	-3.19
PP Pada 2nd Difference	0.00	-7.81	-4.22	-3.53	-3.20

The Malaysian Government Sukuk (SBSN) variable shows that it is stationary at the 1st difference level in the Augmented Dickey Fuller and Dickey Fuller test types, but in the Philip Pheron test it is only stationary at the 2nd difference. It can be concluded that the data is stationary at the 1st difference by looking at the probability value which is smaller than 0.05 and can also be seen by looking at the t-statistic value which is greater than the critical value.

**Table 4.6:** Stationarity Test Results for Malaysian Economic Growth Data (GDP).

Uji Augmented Dickey Fuller	Prob	ADF test statistic	Test critical values		
			1% Level	5% Level	10% Level
ADF Pada Level	0.86	-0.55	-3.63	-2.94	-2.61
ADF Pada 1st Difference	0.00	-4.30	-3.63	-2.94	-2.61

Uji Dickey Fuller	Prob	DF test statistic	Test critical values		
			1% Level	5% Level	10% Level
DF Pada Level	-	1.49	-2.63	-1.95	-1.61
DF Pada 1st Difference	-	-4.51	-2.63	-1.95	-1.61

Uji Philip Pheron	Prob	PP test statistic	Test critical values		
			1% Level	5% Level	10% Level
PP Pada Level	0.18	-2.27	-3.61	-2.93	-2.60
PP Pada 1st Difference	0.00	-6.72	-3.61	-2.94	-2.60

The Malaysian GDP variable when testing the unit root test was also not stationary at the level level and the test was carried out again at the 1st difference level. Results were obtained which showed that the data was stationary at the 1st difference level, by looking at the probability value which was smaller than 0.05 and could also by looking at the t-statistic value which is greater than the critical value.

To estimate VAR/VECM, stationary data is needed at the same level between variables, both data for Indonesia and Malaysia. Looking at the results of the stationary test above, this research uses data at the stationary level of the 1st difference. Determining what model to use on this data will then be subjected to a cointegration test to see the long-term relationship between variables so that conclusions can be drawn on the model used.

### 3. Optimal Lag Test

Determining the optimal lag is very important in the Vector Autoregression (VAR) model, this is because a variable is also influenced by the variable itself, apart from being influenced by other variables. The first step in this test is to form the VAR equation to get the optimum lag.

The information criteria for determining the appropriate lag length is to use the Final Prediction Error (FPE) model selection criteria, Akaike Information Criteria (AIC), Schwarz Information Criteria (SIC), and Hannan-Quinn Information Criterion (HQ). Selection of lag using these criteria will be seen from the presence of stars (\*) in the model criteria and at what lag.

**Table 4.7:** Optimal Lag Test Results on SBSN and Indonesian GDP variables

Lag	FPE	AIC	SC	HQ
0	3.57	53.00	53.08	53.03
1	4.78	46.38	46.64	46.47
2	4.62	46.34	46.78	46.50
3	2.70*	45.80*	46.41*	46.01*

Source: Eviews 7 Sports Results, 2019

**Table 4.8:** Optimal Lag Test Results on SBSN and Malaysian GDP variables.

Lag	FPE	AIC	SC	HQ
0	6.02	44.31	44.39	44.34
1	1.66	40.72	40.98	40.81
2	1.30*	40.47*	40.90*	40.62*
3	1.37	40.51	41.12	40.73

Source: Eviews 7 Sports Results, 2019

The Vector Auto Regression (VAR) model will be estimated with different lag levels and then the smallest value or the most asterisks will be used as the optimal lag value. From the table above we can see that the lowest values of FPE, AIC, SC, and HQ produced show lag 3 for Indonesian data and lag 2 for Malaysian data as shown by the asterisk (\*). From the test results it can be concluded that the optimal lags in this study are lag 3 and lag 2.

### 4. VAR Stability Test

The estimated system of Vector Autoregression (VAR) equations that has been formed needs to be tested for stability through a VAR condition stability check in the form of a roots of characteristic polynomial for all variables used multiplied by the number of lags of each VAR. Based on the test results, a VAR system is said to be stable if all the roots have a modulus smaller than one.

**Table 4.9:** VAR Stability Test

Indonesia	
Root	Modulus
0.936851	0.936851

-0.033825 - 0.882402i	0.883050
-0.033825 + 0.882402i	0.883050
0.859567	0.859567
-0.135872 - 0.430596i	0.451524
-0.135872 + 0.430596i	0.451524
No root lies outside the unit circle. VAR satisfies the stability condition.	
Malaysia	
Root	Modulus
0.921518	0.921518
0.711302 - 0.353098i	0.794121
0.711302 + 0.353098i	0.794121
-0.104822	0.104822
No root lies outside the unit circle. VAR satisfies the stability condition.	

The results of VAR stability testing in Indonesia and Malaysia show that the VAR system built is stable. As we can see in the table above, the modulus value is below one.

### 5. Johansen Cointegration Test

Based on the lag length above, we carried out a cointegration test to find out whether there will be balance in the long term, that is, there will be similar movements and stability of the relationship between the variables in this study or not. In this research, the cointegration test was carried out using the Johansen's Cointegration Test method. The cointegration testing criteria in this study are based on trace statistics. If the trace statistic value is greater than the critical value of 5 percent then the alternative hypothesis stating the amount of cointegration is accepted so that it can be known how many equations are cointegrated in the system.

**Table 4.10:** Cointegration Test Results

Indonesia				
Hypothesized No. of CE(s)	Eigen value	Trace Statistic	0.05 Critical Value	Prob.*
None *	0.68	49.57	15.49	0.00
At most 1 *	0.18	7.56	3.84	0.00
Malaysia				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.*
None *	0.30	18.50	15.49	0.01
At most 1 *	0.13	5.16	3.84	0.02

Based on the trace statistic and maximum eigen statistic values which are greater than the critical value of 5 percent. From the table above we can see that between the

State Sukuk (SBSN) variable and the GDP variable in Indonesia and Malaysia there is a cointegration relationship or in other words there is a long-term relationship.

### 6. Granger Causality Test

The Granger Causality Test is carried out to see whether two variables have a relationship with each other. In other words, whether a variable has a two-way or only one-way relationship with other variables is significant, because each variable in the research has the opportunity to be an endogenous or exogenous variable. The bivariate causality test in this study used the VAR Granger Causality Test and used a significance level of five percent or <0.05.

**Table 4.11:** Granger Causality Test Results

Indonesia			
Null Hypothesis	F-Statistic	Prob.	Keterangan
GDP does not Granger Cause SBSN	2.79678	0.0571	H <sub>a</sub> ditolak
SBSN does not Granger Cause GDP	4.16401	0.0140	H <sub>a</sub> diterima
Malaysia			
GDP does not Granger Cause SBSN	0.33439	0.7182	H <sub>a</sub> ditolak
SBSN does not Granger Cause GDP	0.08873	0.9153	H <sub>a</sub> ditolak

The results of the Indonesian Granger Causality Test show that the GDP variable does not statistically influence the State Sukuk (SBSN) variable with a probability of 0.0571 so we reject the alternative hypothesis. The SBSN variable statistically significantly influences the GDP variable with a probability of 0.0140 so we accept the alternative hypothesis. Thus, it is concluded that there is only one-way causality between the SBSN variable and the GDP variable in Indonesia.

The results of the Malaysian Granger Causality Test show that the GDP variable does not statistically influence the State Sukuk (SBSN) variable and vice versa the SBSN variable does not statistically influence the GDP variable as evidenced by the respective probability values being greater than 0.05, namely 0.7182 and 0.9153. Both results accept the null hypothesis so it is concluded that there is no causality whatsoever for the two variables SBSN and GDP.

## 7. VECM Model Estimation

From the results of the cointegration test, it turns out that there is cointegration between the State Sukuk (SBSN) variable and Economic Growth in Indonesia and Malaysia. So this research was continued by using the Vector Error Correction Model (VECM) to determine the short-term behavior of a variable relative to long-term behavior.

**Table 4.12:** T-table results

T-tabel	
1%	2.42857
5%	1,68595
10%	1,30423

**Table 4.13:** VECM Estimation Results for Indonesian SBSN Variables in the Short Term

Variabel	Koefisien	t-Statistik
CointEq1	0.019818	0.75913
D(GDP(-1))	-0.031954	-0.64836
D(GDP(-2))	-0.108864	-2.61695*
D(GDP(-3))	0.026330	0.49109
D(SBSN(-1))	0.225059	1.28675
D(SBSN(-2))	-0.046885	-0.25636
D(SBSN(-3))	0.325118	1.75264*
C	13577.54	2.34479*

In table 4.13 above, we can explain statistically that the State Sukuk (SBSN) variable is influenced by the GDP (-2), SBSN (-3), and Constanta variables. Judging from the t-statistic value which is greater than the t-table value, the proposed model with the significance variable is:

$$D(SBSN) = 2.61695 * GDP(-2) - 1.75264 * SBSN(-3) + 2.34479 * C$$

**Table 4.14:** VECM Estimation Results for Indonesian GDP Variables in the Short Term

Variabel	Koefisien	t-Statistik
CointEq1	-0.400616	-6.67069*
D(GDP(-1))	-0.307140	-2.70904*
D(GDP(-2))	-0.617956	-6.45745*
D(GDP(-3))	-0.473469	-3.83882*
D(SBSN(-1))	0.655528	1.62922
D(SBSN(-2))	-0.115826	-0.27531
D(SBSN(-3))	0.329434	0.77199
C	65651.19	4.92854*

Based on table 4.14, we can see that the GDP variable is statistically influenced by the variables CointEq1, GDP (-1), GDP (-2), GDP (-3), and Constanta because the t-statistic value of the variable is above the t-table in the research This. The model that

will be proposed with the significance variable is:

$$D(GDP) = -6.67069 * CointEq1 - 2.70904 * GDP(-1) - 6.45745 * GDP(-2) - 3.83882 * GDP(-3) + 4.92854 * C$$

**Table 4.15:** Long-Term VECM Estimation Results for Indonesia's GDP Variable

SBSN	
Koefisien	-1.210472
t-Statistik	-10.2807*
C	-1831815.

In the table above we can see that the State Sukuk (SBSN) variable influences GDP in the long term with a t-statistic value of -10.2807 which is greater than the t-table value in this study. This means that if there is an increase in SBSN, it will cause a decrease in Indonesia's GDP by 10.2807.

**Table 4.16:** VECM Estimation Results for Malaysian SBSN Variables in the Short Term

Variabel	Koefisien	t-Statistik
CointEq1	-0.002253	-3.07123*
D(GDP(-1))	-0.016566	-0.49753
D(GDP(-2))	-0.010960	-0.32910
D(SBSN(-1))	0.495705	3.11208*
D(SBSN(-2))	0.251004	1.42609*
C	44.38501	0.09308

From table 4.16 above, we can see that there are several variables that influence the State Sukuk (SBSN) variable, namely the variables CointEq1, SBSN(-1), and SBSN(-2), known from the t-statistics of each of these variables which is greater than t-Table in this study. The model that will be proposed with the significance variable is:

$$D(SBSN) = -3.07123 * CointEq1 + 3.11208 * SBSN(-1) + 1.42609 * SBSN(-2)$$

**Table 4.17:** VECM Estimation Results for the Malaysian GDP Variable in the Short Term

Variabel	Koefisien	t-Statistik
CointEq1	-0.005466	-1.43101*
D(GDP(-1))	-0.148378	-0.85592
D(GDP(-2))	-0.256104	-1.47708*
D(SBSN(-1))	-0.174740	-0.21071
D(SBSN(-2))	0.393697	0.42963
C	7050.671	2.84005*

Based on table 4.17 above, we can conclude that the Malaysian GDP variable is statistically influenced by the variables CointEq1, GDP(-2), and Constanta, by looking at the t-statistics of each of these variables which is greater than the t-table in

this study . The model that will be proposed with significant variables is:

$$D(\text{GDP}) = -1.43101 * \text{CointEq1} - 1.47708 * \text{GDP}(-2) + 2.84005 * C$$

**Table 4.18:** Long-Term VECM Estimation Results for the Malaysian GDP Variable

	SBSN
Koefisien	97.26422
t-Statistik	3.52612*
C	-1203447

In table 4.18 above, we can see that the State Sukuk (SBSN) variable influences the GDP variable in the long term with the t-statistic value for the SBSN variable being 3.52612 which is greater than the t-table value in this study. This means that if there is an increase in SBSN, it will also cause an increase in Malaysia's GDP of 3.52612.

### 8. Impulse Response Function (IRF)

Carrying out the analysis by looking at the IRF output of the proposed VAR model will make it easier for us to interpret and reason about the VAR model. We need this IRF to find out how a variable responds to shocks from itself or from other variables. IRF describes the rate of shock of a variable on other variables so that through this IRF, we can know the duration of the influence of a shock on one variable on other variables.

The vertical axis in IRF analysis shows the standard deviation value which is used to measure how big a response a variable will give when a shock occurs to another variable. Meanwhile, the horizontal axis shows the future period of the response given to the shock. If the response is above the horizontal axis with a standard deviation value of 0.0 then the shock has a positive influence. And conversely, if it is below the horizontal axis, the effect is negative. The closer the line of observation is to the horizontal axis, the smaller the response that occurs due to shock and vice versa.



**Figure 4.1:** Impulse Response Function Indonesia

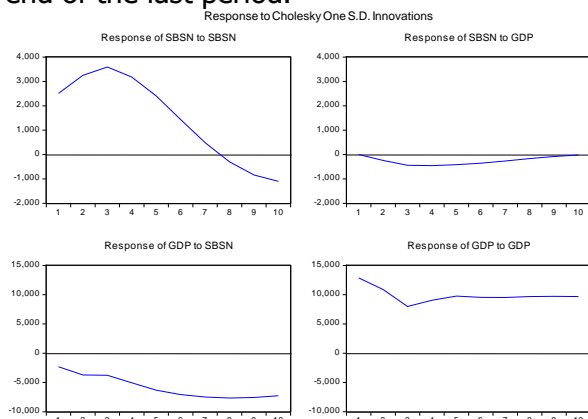
The Response of SBSN to SBSN Indonesia graph is the response given by the Government Sukuk (SBSN) to the variable shock itself. We can observe that the response of the SBSN variable to the variable shock itself at the beginning of the period has a positive impact between standard deviation values of 10,000 to 15,000, increasing until the second period and decreasing and increasing again until the end of the tenth period. The response of the SBSN variable to the variable shock itself is a positive response.

The Response of SBSN to GDP graph shows the response of the State Sukuk (SBSN) variable to the shock caused by the GDP variable in Indonesia. At the beginning of the movement, the negative impact of the SBSN response was slightly below the horizontal axis, until the highest negative impact was in the third period, and until the end of the SBSN variable response period there were positive, negative and finally positive again until the tenth period. The closer the line of observation is to the horizontal axis, the smaller the response that occurs due to shock.

The Response of GDP to SBSN graph shows the response of the GDP variable to the shock that occurred in the State Sukuk (SBSN) variable in Indonesia. The response of the GDP variable at the beginning of the positive period increased until the second period, decreased and leveled off until the fourth period, there was an increase again until the fifth and sixth periods, until the end of the tenth period the GDP response continued to increase which previously decreased in the eighth period.

The Response of GDP to GDP graph in Indonesia depicts the response of GDP to

the variable shock itself. The movement of the GDP variable towards the shock given by the variable itself had a high positive impact in the first period with a standard deviation value of almost 30,000, after that it decreased drastically and had a negative impact until the third period, increased sharply again from the fourth to the fifth period, there was another negative decline, and had a positive impact again until the end of the last period.



**Figure 4.2:** Impulse Response Function Malaysia

The Response of SBSN to SBSN Malaysia graph explains the response of State Sukuk (SBSN) to the shock caused by the variable itself. After we observe that in the first period the SBSN response was positive, increased until the third period and then decreased until the seventh period and responded negatively until the last period, namely the tenth.

The Response of SBSN to GDP graph shows the response of the State Sukuk (SBSN) variable to the shock that occurred in the Malaysian GDP variable. The shock given by the GDP variable does not have a big impact on the SBSN variable looking at the line pattern on the horizontal axis or trend line, until the ninth period the SBSN variable then responds negatively to the shock given by the GDP variable, and in the last period the response is still negative even though the value is small.

The Response of GDP to SBSN graph illustrates the impact of the shock given by the State Sukuk (SBSN) variable on the GDP variable. In the first period, the response from GDP due to the shock that occurred in the SBSN variable had a negative impact and the impact became increasingly negative until the end of the period.

As for the Response of GD to GDP Malaysia graph, it is the response of the GDP variable to the shock of the variable itself. The movement pattern of the GDP variable initially had a positive and high impact with a standard deviation value above 10,000, but decreased until the third period and in the final period the observation line pattern was horizontally positive until the end of the observation period.

## 9. Forecast Error Decomposition Variance (FEDV)

Forecast Error Decomposition of Variance (FEDV) analysis or often called variance decomposition is carried out to describe the relative importance of each variable in the VAR system due to shocks. Variance decomposition is useful for predicting the percentage contribution of variance for each variable due to changes in certain variables in the VAR system (Widarjono, 2009). Variance decomposition in the form of a graph or table can provide an overview of the variance of a variable due to surprises from other variables or itself.

**Table 4.19:** Forecast Error Decomposition Variance Test Results for Indonesian SBSN Variables

Priode	S.E	SBSN	GDP
1	12697.38	100.0000	0.000000
2	19725.57	99.97414	0.025859
3	24002.98	98.91165	1.088347
4	29426.70	99.27407	0.725930
5	35411.20	99.30224	0.697759
6	40130.36	99.45668	0.543317
7	44135.98	99.48013	0.519873
8	48120.54	99.53468	0.465315
9	52140.00	99.43959	0.560408
10	55721.15	99.47673	0.523274

From the table of FEDV Test results on the Indonesian Government Sukuk (SBSN) variable, we can see that the biggest contribution to the SBSN variable variance is the variant or shock of the variable itself.

The contribution of the SBSN variable at the beginning of the period was 100% influencing the variable itself. Meanwhile, during that period the GDP shock still had no effect. In the second period, the SBSN variable began to be influenced by the shock of the GDP variable, but not so much, only 0.025859%, and until the end of the observation period, the value of the SBSN variable was 99.47673%, only decreasing by 0.523274%, influenced by the shock of the GDP variable. Thus, this variable continues to dominate because the shock to the variable itself and the GDP variable only contributed 0.523274% at the end of the observation period.

**Table 4.20:** Forecast Error Decomposition Variance Test Results for Indonesian GDP Variables

Priode	S.E	SBSN	GDP
1	29209.34	19.92746	80.07254
2	35300.30	40.49372	59.50628
3	36892.99	42.64759	57.35241
4	37890.57	44.99533	55.00467
5	45920.18	49.70246	50.29754
6	52408.75	58.33644	41.66356
7	54992.14	60.90578	39.09422
8	56774.76	62.72567	37.27433
9	61760.37	65.29364	34.70636
10	67451.89	69.00294	30.99706

In the next analysis, movements in the GDP variable are dominantly influenced by the shock of the variable itself, namely 80.07254%. At the beginning of the shock observation period, the State Sukuk (SBSN) variable contributed 19.92746% to the GDP variable. However, the movement of the GDP variable decreased significantly in the second period to 59.50628% and the SBSN variable contributed 40.49372%. Until the end of the tenth period, the SBSN variable increased significantly, affecting the GDP variable, namely by 69.00294% and the GDP variable decreased to 30.99706%.

**Table 4.21:** Forecast Error Decomposition Variance Test Results on the SBSN Malaysia Variable

Priode	S.E	SBSN	GDP
1	2509.657	100.0000	0.000000
2	4111.030	99.65338	0.346618
3	5474.493	99.15367	0.846334
4	6347.586	98.86106	1.138941
5	6799.022	98.63306	1.366944
6	6957.713	98.43521	1.564790
7	6979.700	98.30368	1.696315
8	6988.003	98.25340	1.746597

9	7038.296	98.26568	1.734322
10	7123.648	98.30626	1.693738

In the first period, State Sukuk (SBSN) was strongly influenced by the variable shock itself by 100%, while in that period the GDP variable shock still had no effect. Next, starting from the second period the shock of the GDP variable affects SBSN only by 0.346618%, until the tenth period the proportion of the shock of the SBSN variable to the SBSN variable itself is still large with a contribution of 98.30626%, almost 100%, while the shock provided by the GDP variable is only 1.693738% only.

**Table 4.22:** Forecast Error Decomposition Variance Test Results on the Malaysian GDP Variable

Priode	S.E	SBSN	GDP RILL
1	13066.08	3.116642	96.88336
2	17407.45	6.334120	93.66588
3	19522.61	8.765584	91.23442
4	22108.36	12.06637	87.93363
5	24976.01	15.84143	84.15857
6	27651.73	19.44644	80.55356
7	30192.40	22.46811	77.53189
8	32621.50	24.77305	75.22695
9	34868.29	26.39287	73.60713
10	36910.58	27.42875	72.57125

In the table above we can observe that the GDP variable is influenced by the shock variable itself by 96.88336%, while the State Sukuk (SBSN) variable has contributed 3.116642%. It can be seen that in the following period the shock that occurred in the SBSN variable continued to increase but did not significantly affect the GDP variable and until the end of the period the shock that occurred in the GDP variable was still dominated by the variable itself at 72.57125%, while the SBSN variable only contributed 27.42875%.

### Analysis of the Causality Relationship between Government Sukuk (SBSN) and Economic Growth in Indonesia and Malaysia.

State Sharia Securities or commonly called State Sukuk are expected to increase the rate of Economic Growth and high Economic Growth is expected to bring prosperity to society so that it can increase demand for State Sukuk themselves. The following is the causal relationship between State Sukuk and Economic Growth in Indonesia and Malaysia.

## a. Indonesia

The results of the Granger causality test analysis show that the relationship between the development of State Sukuk (SBSN) and Economic Growth in Indonesia is a unidirectional relationship, where the development of State Sukuk (SBSN) significantly influences Economic Growth. This is shown by the results of the Granger causality test which shows that the development of SBSN affects GDP with a probability of 0.0140. Meanwhile, the influence of GDP on the development of Government Sharia Securities (SBSN) is not significant with a probability value of 0.0571. This result can also be seen from the results of the variance decomposition test. The results of the variance decomposition test show that the contribution of the SBSN variable to the GDP variable is greater than the contribution of the GDP variable to SBSN. The contribution of the SBSN variable to GDP is 69.00294%, while the contribution of the GDP variable to the SBSN variable is 0.523274%. We can conclude that in research on the causal relationship between Government Sukuk (SBSN) and Economic Growth in Indonesia there is only a unidirectional relationship, namely that the development of SBSN influences Economic Growth in Indonesia.

This research shows that Government Sukuk (SBSN) influences economic growth in Indonesia. This indicates that in Adam Smith's theory of economic development, capital plays an important role. According to this theory, capital accumulation will determine how fast or slow economic growth occurs in a country. This capital is obtained from savings made by the community. By accumulating capital generated from savings, economic actors can invest it in the real sector, in an effort to increase their income (Huda et al, 2017: 91). Investment has a dual role in that it can not only create income but investment can also increase production capacity in the economy (Boediono, 1999: 59). Investment is a commitment of a certain amount of funds or other resources made now, with the aim of obtaining profits in the future (Tandelilin, 2001: 21).

Sukuk, which in transactions require the existence of underlying assets that are required to have economic value, enable

sukuk to stimulate growth in the financial sector and the real sector which will increase Indonesia's Gross Domestic Product (GDP). Research conducted by Smaoui and Salem (2017) shows that the development of the sukuk market is conducive to economic growth. This research concludes that the development of the sukuk market has encouraged financial inclusion, which stimulates investment and economic growth. Widodo (2018) said that sukuk traded on the sharia capital market have a significant positive effect on Indonesia's GDP in the short term.

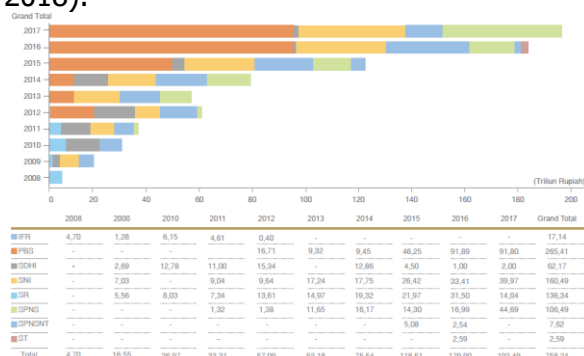
Furthermore, the relationship between economic growth and influence on Indonesian Government Sukuk (SBSN) is not proven. This is because when issuing sukuk, the government is not based on the level of economic growth, the issuance of sukuk is adjusted to the government's needs for economic development because there is still a lot of infrastructure that has not been built in Indonesia. If the government lacks funds or capital to build infrastructure and so on, the government will issue sukuk to help fund it. Investors are not based on the level of economic growth, when the government issues sukuk, investors will still buy it, because sukuk is a sharia-based investment instrument and the risk is very low (Datuk, 2014) because there is an underlying asset that can be said to be a guarantor of the investment. Sukuk are also intended to fund development, not to fund business ventures.

The findings of this research are relevant to the Islamic economic discourse that Islam not only regulates morals, creeds and worship, but also muamalah. The muamalah aspect is the rules of the game for humans in carrying out social life, as well as the basis for building an economic system that is in accordance with Islamic values. This research basically explains the existence of sharia investment instruments, namely Government Sukuk (SBSN), which have an influence on economic growth in Indonesia. As confirmed in this research, there is a lot of infrastructure development that is supported financially through State Sukuk (SBSN).

To guarantee that the State Sukuk is in accordance with sharia principles, the government guarantees the conformity of sharia in the fatwas of the National Sharia

Council (DSN) of the Indonesian Ulema Council (MUI) and the Malaysian Sharia Advisory Council (MPS) which serve as references in matters relating to sharia. Rules that are generally prohibited include investments that contain elements of usury, gharar (changing a condition of certainty into a condition of uncertainty in order to gain a profit), gambling, maysir (gambling), selling something that is not owned, and various other transactions that are detrimental to one party. Forbid all destructive and detrimental actions. Islam requires economic activities that are based on the principle of mutual benefit and prioritize the benefit of the people.

Since the approval of Law Number 19 of 2008 concerning SBSN, the issuance of the first series of SBSN, namely Islamic Fixed Rate (IFR), was worth IDR 15 trillion and the total issuance of SBSN reached IDR 764.51 billion around 2008. After this initiation, Sukuk variants were available on the market, such as Retail Sukuk (SR), Global Indonesian Sukuk (SNI), Ziarah Sukuk (SDHI), Treasury Sukuk (SPN-S), Project Based Sukuk (PBS) and the newest (issued in 2016) is Savings Sukuk (ST). Until the end of 2017, the total accumulated SBSN contributed IDR 192.5 trillion or 17% of total government bonds (IIFM Sukuk Report, 2018).



**Figure 4.4:** Trend of Indonesia Sovereign Sukuk Issuance

Compared to 2016 where the total SBSN was IDR 179.9 trillion, SBSN has increased 51.8% in 2017. These figures reflect that the Indonesian Government has a strong commitment to regularly issuing Sovereign Sukuk in the domestic and global markets to support development global Islamic financial market and attract investors to Islamic financial institutions to grow quickly in Indonesia. From year to year, the development of state sukuk shows positive

movements. With this increase in state sukuk issuance, Indonesia is among the top five sukuk issuing countries in the global market.

The development of sukuk in Indonesia cannot be separated from various aspects that support the development of sukuk, starting from regulations, fatwas that guarantee the sanctity of sharia principles in sukuk, variations in the contracts used and policies that have a positive impact on the development of sukuk. Public awareness continues to increase regarding the sharia economy which demands halal transactions in the future, making the prospects for future sukuk development even better. However, the government must develop sukuk with a wider variety of contracts than what is currently being done so that it can attract more investors.

## b. Malaysia

The results of the Granger causality test analysis show that the relationship between Government Sukuk (SBSN) and Economic Growth in Malaysia is that there is no causality, either one way or two ways. Where the development of State Sukuk (SBSN) statistically does not significantly influence the GDP variable with a probability value of 0.9153 and the GDP variable also does not significantly influence the SBSN variable with a probability value of 0.7182. This result can also be seen from the results of the variance decomposition test. The results of the variance decomposition test show that the contribution of the SBSN variable to the GDP variable is 27.42875% and the contribution of the GDP variable to SBSN is 1.693738%. We can conclude that there is no causal relationship between Government Sukuk (SBSN) and Economic Growth in Malaysia.

Lucas (1988) argues that the financial sector and economic growth do not have a mutual influence relationship or The independent hypothesis. David Ricardo and Thomas Robert Malthus were of the opinion that in the long term the economy will reach a stationary state or a situation where economic development does not occur at all. Economic growth is determined by limited natural resources (in the sense of land), and a rapidly increasing population will reduce the level of development to a lower level (Huda, 2017: 92). Schumpeter stated that if

the level of progress of an economy is higher, the desire to innovate decreases, this is because society feels that its needs are met. In this way, economic growth will become slower and eventually a stationary state will be reached. However, the state of undevelopment referred to here is different from the classical view. In Schumpeter's view, a state of undevelopment is achieved at a high level of economic growth (Sukirno, 2006: 246).

In Malaysia, sukuk-financed projects have run out. Sukuk in Malaysia have been around since 1990 and are used continuously in infrastructure development. Such as Government Investment Issues (GII) and Islamic Treasury Bills Malaysia (MITB) which are state sharia securities issued based on Islamic principles by the Malaysian government to finance development expenditure and government working capital. Sukuk issuance in Malaysia is also not based on the level of economic growth. GII and MITB are issued to enable Islamic banks to hold securities that meet their mandatory liquidity requirements. Malaysian society, which is predominantly Muslim, buys sukuk not based on the level of economic growth. When the government issues sukuk, investors will still buy it, because sukuk is a sharia-based investment instrument and the risk is very low. Research conducted by Abdelghani (2016) proves that the issuance of Sukuk for Saudi Arabia and the GCC countries has an influence on economic growth only when all countries are combined, otherwise no influence can be identified.

### **Analysis of the Long-Term Relationship between Sovereign Sukuk and Economic Growth in Indonesia and Malaysia**

In long-term analysis, we can find out whether or not there are similarities in the movement and stability of the relationship between the variables in this research between State Sukuk (SBSN) and Economic Growth in Indonesia and Malaysia. Based on cointegration tests in Indonesia and Malaysia using the Johansen test, the trace statistical value is greater than the critical value of 5%. The results of the cointegration test on Indonesian data show trace statistical values of 49.57678 (None\*) and

7.567768 (At most 1\*) while the critical values are 15.49471 (None\*) and 3.841466 (At most 1\*) . The results of the cointegration test on Malaysian data show trace statistical values of 18.50274 (None\*) and 5.167714 (At most 1\*) while the critical values are 15.49471 (None\*) and 3.841466 (At most 1\*). This shows that between the two variables there is a cointegration relationship, indicating that between the State Sukuk (SBSN) variable and Economic Growth in Indonesia and Malaysia there is a long-term relationship.

The results of this cointegration test mean that the State Sukuk (SBSN) variable and Economic Growth in Indonesia and Malaysia will influence each other in the future. This of course only applies assuming other variables do not exist (disturbance term). This is in line with investment theory which is an investment in one or more assets owned and usually for a long period of time with the hope of making a profit in the future (Sunariyah, 2000:4). Investment is a step to increase long-term economic growth and people's living standards (Mankiw, 2007: 62).

Sukuk, which are used as a source of the APBN and will later be used to finance infrastructure in general, cannot be enjoyed in a short period of time, in the sense that developments built using the new sukuk scheme can be enjoyed in the long term. Infrastructure built from sukuk can mobilize the economy so that it can increase economic growth and community welfare as well as increase consumption and investment. In line with Tya's (2013) research which states that state sukuk has a long-term relationship with economic growth in Indonesia. Smaoui and Nechi (2017) explain that the development of the sukuk market is conducive to economic growth. This research concludes that the development of the sukuk market has encouraged financial inclusion, which stimulates investment and economic growth.

Islam looks further into the future regarding investment and economic growth which is not only oriented to worldly problems but also to problems in the afterlife. Investments that violate sharia will receive appropriate retribution, as will investments that comply with sharia. Islamic investment is a sacrifice of resources in the

present with the hope of obtaining greater returns in the future, both directly and indirectly, in accordance with overall sharia principles (kaffah). Islam requires economic activities that are based on the principle of mutual benefit and prioritize the benefit of the people (Nafik, 2009: 68).

## Conclusion

The conclusion and recommendation of the author are given in this section and are consistent in using the term "Conclusion".

The conclusion of the research should serve the urgent purposes of the study within this section. This can be followed by suggesting the relevant future studies.

Conclusions from the research results by conducting analysis using the Vector Autoregression (VAR) method, and the discussion carried out in chapter IV with the observed variables of State Sukuk (SBSN) and Economic Growth, several conclusions can be drawn:

The causal relationship between State Sukuk (SBSN) and Indonesia's Economic Growth is a one-way relationship (unidirectional causality) and there is no causal relationship between State Sukuk (SBSN) and Malaysia's Economic Growth, either one way (unidirectional causality) or two directions (bidirectional causality). This is because the benefits of sukuk for development can mobilize the economy directly, especially in Indonesia which requires a lot of development in infrastructure to facilitate economic activity. In Malaysia, sukuk-financed projects have run out. Sukuk in Malaysia have been around since 1990 and are used continuously in infrastructure development. In line with the opinion of economist Schumpeter, the higher the level of progress of an economy, the desire to innovate decreases. Thus, economic growth will reach a stationary state.

There is a long-term relationship between Government Sukuk (SBSN) and Economic Growth in Indonesia and Malaysia. This is caused by investment which is an investment in one or more assets owned and usually has a long term period with the hope of making a profit in the future. Investment is a step to increase long-term economic growth and in Islam is an activity that is useful for the benefit of the people.

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## Conflict of Interest

The author raises this problem because the relationship between SBSN and Indonesia's GDP is a unidirectional relationship where State Sukuk affects Indonesia's GDP. There is no causal relationship, either unidirectional or bidirectional, between Government Sukuk and Malaysian GDP. There is a long-term relationship between Government Sukuk and GDP in Indonesia and Malaysia. The importance of developing sukuk encourages financial inclusion, stimulates investment and economic growth.

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## **BANGKA BELITUNG PROVINCE BAZNAS PROGRAM IN EFFORTS TO IMPROVE THE COMMUNITY ECONOMY (CASE STUDY OF SORGHUM ZAKAT VILLAGE IN BERUAS VILLAGE)**

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**Abstract:** The declining level of the economy of the Bangka community in terms of declining selling prices of people's livelihoods that are not comparable to the purchase price of the basic needs of the community has caused many complaints from the public about this. Therefore the BAZNAS of the Province of Bangka Belitung has released a community empowerment program to improve the economy of the community through the zakat sorghum village program. The research method used in this study is descriptive qualitative. The objects in this study were the deputy chairman of two BAZNAS in the Bangka Belitung Islands Province, a field facilitator (third party) and mustahik who ran the sorghum zakat program. While the method in collecting data used is descriptive from the results of interviews of researchers to the speakers. The results of the study were through interviews with the deputy chairmen of two BAZNAS in the Bangka Belitung Islands Province, field assistants (third parties), and mustahik who carried out the sorghum zakat village program. first implementation of the program, *third*, parties submitted proposals to BAZNAS, *secondly*, village and mustahik determination, *third*, field survey, *fourth*, submission of BAZNAS funds, and *fifth*, mentoring process. For the impact of the implementation, the impact is not very significant for the mustahik because this program is new and is still in the process of testing, of course there are many things that mustahik do not understand in running the program. As for the obstacles faced in implementing the sorghum zakat village program are constraints on land, sparrows, and mice.

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### **Introduction**

The economic sector has an important role in the development of a country. One of the reasons for its success is in the economic sector. Therefore, the economic sector is a top priority in development. One proof that the economy is an important

element in development and can influence other sectors is when Indonesia was hit by total decline, namely due to the economic crisis. In planning for economic empowerment programs, more emphasis is placed on the concept of assistance. In the concept of empowerment,

it can be interpreted as an effort to help the weak or incapable to become capable, in order to achieve improvement in the economy of a country or society. The government has done many things to improve and empower society. One of the institutions that operates in the field of empowerment and improving the community's economy is BAZNAS. Namely, it operates in the field of collecting funds through zakat and distributing them through established programs.

There are several previous studies that examined the role of BAZNAS in improving and empowering society, including:

The poverty alleviation program run by the government has not yet had a significant impact on reducing poverty levels. It needs support from other sub-systems including zakat. Zakat is one of the Islamic fiscal instruments which has played a significant role in the Islamic economic system. The potential of zakat will be able to cover various aspects, including poverty alleviation programs in the form of a social security system. Zakat can be used in various forms of social security systems, such as employment insurance, pension insurance and life insurance. As well as to overcome various problems such as housing, access to capital and education for the poor which can be done through maximizing the management and utilization of zakat (M Nur Rianto Al Arif, 2013).

Zakat is one of the pillars of Islam that must be carried out by every Muslim throughout the world. One of the upright pillars and the collapse of the Islamic religion is related to the enforcement of the zakat law. Because zakat functions in alleviating and eradicating the problem of poverty so that the abundance of wealth does not circulate in the realm of wealth owners alone. With zakat, at least poverty can be minimized and even eliminated, because the danger of poverty often leads to the abyss of disbelief. Apart from that, the expression that the rich get richer and the poor get poorer no longer pervades life. To create a prosperous society, free from poverty, it is necessary to optimize productive zakat. In this area, government and private intervention in terms of establishing zakat institutions, management,

utilization, empowerment and distribution are determining factors in the success of establishing zakat law. If the collection of zakat assets is managed productively by paying attention to the welfare of the mustahiq, the problem of poverty will be resolved (Yaqin, 2015).

This research aims to determine the role of the North Sumatra National Zakat Amil Agency (BAZNAS SU), an official zakat institution in North Sumatra owned by the government, in empowering mustahiq by utilizing productive zakat and analyzing the influence of productive zakat funds on mustahiq income. This research uses descriptive methods and the Paired T-Test method to identify and analyze data obtained from interviews based on questionnaires. Paired T-test results show that there is a difference between mustahiq income, before and after receiving zakat productive funds. Descriptive analysis shows that BAZNAS SU distributes zakat productive funds in the form of interest-free loans or revolving funds for small businesses, in order to empower mustahiq. Apart from distributing productive zakat, BAZNAS SU also supervises and guides mustahiq in using productive zakat funds (Siti Halide, 2014)

The Regional Zakat Amil Agency (BAZDA) of the Bangka Belitung Islands Province was established in 2004 based on Law no. 38 of 1999 concerning zakat management. The BAZDA Bangka Belitung management was first formed by Decree of the Governor of the Bangka Belitung Islands No. 188.44/20/IV/2004 of 2004 then updated with Governor's Decree No. 188.44/390/II/201 and Revision of Governor's Decree No. 188.44/193/II/2011. In accordance with Law no. 23 of 2011 concerning Zakat Management and Government Regulation Number 14 of 2014, in that year BAZDA officially changed to the National Zakat Amil Agency which is now known as BAZNAS based on the Decree of the Minister of Religion No. 118 of 2014. The enactment of Law Number 23 of 2011 concerning Zakat Management further strengthens the role of BAZNAS as an institution that has the authority to manage zakat nationally. In this law, BAZNAS is declared an independent government

institution and is responsible to the President through the Minister of Religion.

In distributing funds to the community, BAZNAS often takes the form of zakat, infaq and alms (ZIS) so that these funds can be utilized and allocated to people who really need them, besides that the distribution of zakat, infaq and sadaqah (ZIS) can be well directed, so that these funds are allocated more optimally and effectively. This is so that the community's economic system can be conceptually focused. Public awareness of zakat through the role of BAZNAS is increasing. This can be seen by the increase in BAZNAS funding, especially in Bangka Belitung. In 2016 IDR 1.5 billion was collected, while in 2017 IDR 7.2 billion. The public's trust in BAZNAS is clearly visible for the management of zakat funds so that they can support the economy of the people of Bangka Belitung in a clear and more planned manner.

The poverty rate of the population (people who are below the poverty line) in the Bangka Belitung Islands Province for the period September 2017 was recorded at 71.07 thousand people (5.04%), compared to the poor population in March 2016 which amounted to 72.76 thousand people (5.22%), meaning that the number of poor people decreased by 1.69 thousand people or a percentage decrease of 0.18 percentage points compared to the March 2016 period (BPS, 2018). Based on this amount of data, it can be seen that the distribution of zakat funds has an impact on improving the economy of the people of Bangka Belitung. The impact caused by the distribution and utilization of zakat is a positive impact. This can be seen from the reduction in poverty levels in society.

BAZNAS Bangka Belitung seeks to improve the community's economy with several programs including MSME-based productive zakat, scholarships for the underprivileged and high achievers and other freelance assistance. Now BAZNAS has launched a new program, namely an agribusiness-based program in the form of a sorghum zakat village. The sorghum plant itself is like corn and wheat, the period from planting to harvest takes three months. The sorghum harvest period occurs in 3 harvests, from a period of three months to

the first harvest, and the next two harvests over a period of two months, meaning that the productive period for this sorghum harvest can be three harvests in a period of 7 months. BAZNAS Bangka Belitung Islands Province, with the realization of this agribusiness program, hopes that the community can manage it well and become a sustainable patent business in this environment, with the economy in Bangka Belitung, where initially the majority survived on palm oil, rubber, pepper and tin, the prices of which now continue to increase. decreased and was exacerbated by the decline in the price of palm oil sold. As a result, many grocery store operators also complain about people's lack of purchasing power. Due to this impact, the community really needs new businesses so that people can earn income that can improve the economy of the people of Bangka Belitung which is currently deteriorating.

The worsening economy of the people of Bangka Belitung cannot be separated from the condition of the national economy, as stated by the Governor of Babel Erzaldi Rosman Djohan (Babelprov, 2018):

"World oil prices and global food prices are increasing. On the other hand, the challenge of controlling inflation cannot be separated from the domestic economy which is greatly influenced by the availability of supplies and the smooth distribution of food... In June 2018 inflation in Bangka Belitung was 1.63%, on an annual basis inflation in Bangka Belitung was 2.55%. "And inflation in Bangka Belitung is lower than national inflation of 3.12%... When the price of the rupiah weakens, it really affects local commodities that have export value, such as pepper, rubber and palm oil."

The weakening of local commodities is exacerbated by surplus harvests of these commodities, such as abundant palm and pepper harvests not being accompanied by increasing selling prices, so that local Bangka farmers experience significant losses. It was at that time that BAZNAS Bangka Belitung Islands Province came to the community to offer the Sorghum Zakat Village program. To date, there are two villages that have received this assistance, namely Beruas Village, Kec. Coconut District

West Bangka and Air Itam Village in Pangkalpinang (Interview, 2019).

BAZNAS Bangka Belitung Islands Province collaborates with field assistants (LPKPN) from the beginning of the process of distributing agricultural seeds to purchasing agricultural products so that people are not confused about selling their agricultural harvests. Before the harvest period, the BAZNAS team and companions supervise and monitor the progress of implementing the BAZNAS program so that it is more focused and optimal.

## Literature Review

Previous research related to this research is: Abdullah Sahroni (2018) researched the Rejang Lebong Makmur Program, a Solution to Reducing Poverty Rates (Study at Baznas Rejang Lebong District), the results of his research showed that the mechanism for distributing zakat funds was problematic in the Rejang Lebong Makmur program in the form of assistance for productive business development for mustahik with an interest-free loan system and the factors causing misorientation of this productive assistance, lack of trustworthiness of mustahik, minimal socialization about productive assistance and lack of knowledge of the people of Rejang Lebong Regency about economic business opportunities or the businesses they run as well as strategies carried out by BAZNAS Rejang Lebong Regency in overcoming problematic distribution of zakat funds in the Rejang Lebong Makmur program through coaching and understanding regarding productive assistance.

Ismail (2017) researched the empowerment of mustahik by the national zakat amil agency (BAZNAS) in Cilegon City. The results of this research showed that the management of zakat, infaq and alms (ZIS) funds by BAZNAS in Cilegon City appeared to be in accordance with the principles of transparency and accountability. This is indicated by the availability of activity reports and financial reports periodically through the mass media. The lack of socialization has resulted in muzakki (zakat distributors) at BAZNAS Cilegon City still being dominated by Civil Servants (PNS), not reaching much of the general public. The distribution of ZIS funds is also still

dominated by consumptive rather than productive purposes. Efforts to empower mustahik to become muzakki initiated by BAZNAS Cilegon City also appear to have not gone well. The main factor is the absence of mentoring activities to ensure that the empowerment program can run effectively.

Siti Maghfiroh (2015), researched the strategic management model of economic empowerment of the people through zakat, infaq, alms (case study on lazis qaryah thayyibah Purwokerto). The results of this research are that the strategic management model carried out by LAZIS Qaryah Thayyibah starts from the first, Environmental Observation which consists of external analysis (in the form of opportunities and threats) and internal analysis (in the form of strengths and weaknesses). This observation is not carried out directly but is flexible and as needed. All of these factors come together in a series of strategic management models implemented by Lazis Qaryah Thayyibah. Second, Strategy Formulation, in this stage is more about strengthening the vision and mission, as well as how to utilize opportunities, threats, strengths and weaknesses to form a strategy in managing and understanding the public about ZIS knowledge. Third, Strategy Implementation, after several strategies have been formed, the next step is to put them into various programs. And as a superior program, namely scholarships and economic empowerment of the people through goat rolling. Fourth, Evaluation and control, as a form of evaluation and control, LAZIS conducts evaluations after each joint program implementation and to improve subsequent programs.

Andika Ramadhanu and Tika Widiastuti (2017), researched the model of economic empowerment of Muslim converts by amil zakat institutions: a case study of the BMH laz among Tengger tribe converts. The results of this research indicate that BMH has a role in the economic empowerment of the Tengger Muslim people. This can be seen through their revived Islamic rituals, their still good relations with their neighbors, and their success in meeting their needs. Not only are they economically empowered, Tengger Muslims have also become a stronger religion.

Desi Ariani and Moch. Khoirul Anwar (2018) researched the zakat empowerment program for MSMEs at zakat houses in the city of Surabaya. The results of the research show that the empowerment model at Rumah Zakat is in the form of data collection on potential beneficiaries, business feasibility surveys and interviews, assistance to beneficiaries which includes business consultation and business evaluation, as well as involving third party partners. Overall, the achievement of the MSME empowerment program at Rumah Zakat has been optimal.

Aab Abdullah (2013) researched strategies for productive use of zakat. The results of his research show that the zakat management strategy carried out by Sukabumi City BAZ is in the form of capital "loans" and revolving funds for zakat mustahik, namely the poor in the Sukabumi City area. This program received an enthusiastic response from the weaker sections in this region. From the results of the observations made, it was concluded that this productive zakat model is very useful for zakat mustahiq so it is hoped that it can continue to be developed in the future.

Mukhamat Saini (2016) researched the economic empowerment of the ummah through productive zakat (a critical study of the governance of the national zakat amil agency BAZNAS in Nganjuk district). The results of the research show that distribution of zakat in terms of its form can be done in two ways, namely: First, instant and mustahiq form of productive zakat formation, mustahiq in this category are mustahiq from the eight ashnaf who have the ability, potential and strength to work. Second, the distribution of forms of empowerment is the distribution of zakat that accompanies the target of changing the condition of mustahiq into the muzakki category.

Armas Pailis, et al (2016) researched the influence of maqashid sharia on mustahik empowerment and welfare (Study of Productive zakat and Welfare (Study of Productive zakat Recipients in Baznas Riau). The results of the research show that religious understanding, knowledge, and family-caring have an influence on empowerment mustahik. Self-care and

wealth do not affect mustahik empowerment. In addition, mustahik empowerment affects individual booths and community welfare. Religious understanding, knowledge, and family-caring are important factors that indicate the success of community empowerment programs. Self-care and wealth are factors important, but in this research, both have no effect because there is a lack of will to develop a bigger business and a lack of funds for developing mustahik businesses. The influence of maqashid sharia on the empowerment of productive zakat mustahik in Baznas Riau is 40.6%, while the rest is influenced by factors other. In a theoretical context, other researchers must dig deeper into the review of welfare based on al-syariah maqasid indicators.

Rina Murniati and Irfan Syauqi Beik (2012) researched the Effect of Zakat on the Human Development Index and Mustahik Poverty Level: Case Study of the Utilization of BAZNAS in Bogor City. The research results show that giving zakat to mustahik has a real influence on their income level. Likewise, the HDI value of mustahik has increased from 47 before the distribution of zakat to 49 after distribution of zakat, and the results of the study show a decrease in the poverty level of mustahik based on the four poverty indicators used, namely headcount ratio index (H), poverty gap index (P1), income gap index (I), and Sen index of poverty (P2).

## Method

In this writing the author took the research location in Beruas Village, Kelapa District, West Bangka Regency. Beruas Village, Kelapa District is located 67 KM from the center of Pangkalpinang city, or where the BAZNAS Office for Bangka Belitung Islands Province is located.

The type of research used in this research is descriptive qualitative, namely research aimed at describing and analyzing phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of people individually and in groups (Sugiyono, 2006). Using qualitative descriptive methods, researchers examined the BAZNAS Program for the Bangka Belitung Islands Province in Efforts to Improve the

Community's Economy (Sorghum Cultivation Case Study).

The reason the researcher chose the qualitative method was because there were several reasons. Firstly, the program that the researcher wanted to examine was the first time it had been implemented and was still in its trial period, of course there was more emphasis on the implementation of the program. Second, this approach is able to determine the boundaries of the research that will focus on the study.

### **Research Subject**

Research subjects are sources where research information can be obtained (Arifin, 1998). In this case, the research subjects are the head of BAZNAS Bangka Belitung Islands Province or those concerned, sorghum assistants who collaborate with BAZNAS, mustahik who receive the sorghum zakat village program.

### **Research Object**

The research object is what is the focus of attention of a study (Suharsimi, 1989). In this case, the object of research is Beruas Village, Kelapa District, West Bangka Regency.

## **Results and Discussion**

### **1. Implementation of the Sorghum Zakat Village Program**

It is understood that zakat is an important thing that must be carried out by all Muslims, especially as it is part of the third pillar of Islam. Zakat greatly influences community utilization, especially as this utilization is managed by the National Zakat Amil Agency (BAZNAS). The management of zakat money carried out by BAZNAS can make people more aware of the importance of zakat, especially those who have reached their reckoning. In this way, there is greater hope for BAZNAS to manage and distribute the zakat funds as they should. Therefore, poor people will be greatly helped by the existence of zakat funds and it will probably change people who were initially economically weak and below average and who were previously unable to become capable. It is known that BAZNAS has many programs to help poor people. among them is the sorghum zakat village program, which has only been running for almost a year. Just like this program was implemented in

Beruas Village, Kelapa District, West Bangka Regency.

It is important to realize that the sorghum zakat village program is a program that is not solely an idea from BAZNAS, but this program is endorsed by the Ministry of Religion. This was conveyed by Muhammad Samsir (Deputy 2 of BAZNAS Bangka Belitung: 2019), where he stated:

"The zakat village itself is a program promoted by the ministry of religion which was conveyed to BAZNAS. The zakat village is a village where the role of economically capable people then they give zakat either through BAZNAS, or at the UPZ (Zakat Collection Unit) in the village itself. Then their zakat money is managed for the poor in the village itself, the management is through BAZNAS, then the farmers get the benefits and hopes that later from agricultural programs, trade, and so on, with the hope that farmers or those who receive the program can give zakat too. Initially it came from muzakki in the village itself and for mustahik in the village itself as well and was backed up by BAZNAS until the village was above the poverty line. Meanwhile, the sorghum zakat village itself is a sorghum-based zakat village program. Sorghum itself is the name of the type of plant that will be planted by farmers who have become recipients of zakat assistance from BAZNAS."

It can be understood from the above statement that the sorghum zakat village program was initially instructed by the Ministry of Religion to BAZNAS. In this program, people who earn more or can be said to be economically capable are obliged to pay zakat, either to BAZNAS or to the Zakat Collection Unit (UPZ) in their respective regions. The zakat money they give to agencies is managed as well as possible, as an effort to improve the economy of economically disadvantaged people. The hope is that with the management of zakat money by BAZNAS, whether through trade, agriculture or other alternatives, it can be managed or distributed well and optimally by BAZNAS itself. Not only that, it is hoped that this program will produce abundant results, so that those who are initially disadvantaged economically can contribute to help others. The term means that those who were

initially unable to pay zakat (mustahik) with this program hope that they will be able to pay zakat (muzakki). The program offered by BAZNAS is sorghum plants. This plant itself is a plant similar to rice, wheat and corn.

This program was chosen by BAZNAS not without reason, as stated by Muhammad Syamsir as follows:

"This program is something new for BAZNAS, previously there have been many programs run, such as capital for trade or family businesses, skills training, such as sewing. For the sorghum program itself, it is a new thing that wants to be developed and according to the third party or companion in this program, it is good for future business, so in this case BAZNAS is interested in developing this program by collaborating with third parties or field assistants who understand and know more about the sorghum plant. And BAZNAS also considers this because in terms of harvesting sorghum is faster than other plants, then one planting can produce three harvests. In terms of maintenance, it doesn't require a lot of money, and the land also doesn't require more land management because this plant is easy to grow on land that is usually used by farmers. Then the results of this plant, from the stem to the fruit, have potential that can be utilized by all, the fruit produces many benefits, such as being able to make rice, processed flour, and food ingredients that can be developed by the mustahik. "And the stems can also be fed to livestock such as cows and the stems can also produce sugar by pressing them and can also be made into fertilizer."

From the interview above, it can be understood that BAZNAS has many zakat fund distribution programs, such as capital ventures, family trading businesses, skills training such as sewing which have been carried out by BAZNAS. The sorghum zakat village program itself is the first time it has been carried out in collaboration with a third party or program assistant who understands more about sorghum cultivation. The reason for choosing sorghum cultivation over other crops is because the sorghum plant does not take a long time from planting to harvest, and one planting of this plant can yield three harvests. The first harvest is in the 3rd

month after planting, and the second and third harvests are only two months apart. And in terms of maintenance, it's not too complicated, you don't have to have a large and special land, but land that farmers usually use to grow crops. Then from the harvest of this plant, from the fruit to the stem, there is economic value, from the fruit you can make rice, flour, sorghum popcorn, and can be used as food for livestock, such as chickens. The stems can be fed to livestock such as cows, horses and goats, can be pressed to produce sugar and can be made into fertilizer. This shows that this sorghum plant has extraordinary advantages because it all contains economic value and this is why BAZNAS chose this sorghum cultivation program.

The aim of the sorghum zakat village program itself was conveyed by Deddy Hartadi (3rd Party) as follows:

"The aim is to improve the community's economy, the right program for now is the empowerment of sorghum zakat. Sorghum is a plant that supports food security and is also a plant that is able to live in dry and critical areas with minimal nutrients and also has great economic value. All the fruit and stems can be used and sold."

This program is intended as an effort to improve the community's economy. The choice of this program is felt to be very appropriate for the current era considering that sorghum is a form of support for food security. The advantage of this plant is that it can grow on dry, even critical land and has minimal nutrients, and this plant has great economic value. From this plant it is certain that everything can be used or produced, such as the fruit and stems can be sold and are useful.

In implementing this program, there are at least several steps that must be taken to fulfill the program, as stated by Deddy Hartadi (Third Party: Field Assistant, 2019).

"At the start of the implementation, the third party met with BAZNAS to propose a community empowerment program for the zakat money that had to be distributed. BAZNAS wants a productive program to improve the community's economy, and a third party created a program, namely a sorghum-based zakat village. In this case,

the 3rd party and BAZNAS have worked together to run this program and the third party as a companion in the program, the first village that became mustahik or that received this program was a village in the Kelapa sub-district, with a total of 28 mustahik people for 7 hectares of land. , and each hectare is managed by 4 mustahik. And the second village is in Air Itam Pangkalpinang with a number of mustahik of 7 people for 1.5 hectares of land, this is due to limited land. Administratively, to determine whether the villages and mustahik are eligible or not to receive full BAZNAS assistance, here the 3rd party only acts as a companion in the land processing, planting, harvesting process and teaches how to process sorghum seeds into food and the 3rd party is also ready to buy and accommodate the harvest of sorghum farmers. BAZNAS here hands over funds according to the draft budget to a 3rd party, and the 3rd party provides everything needed for this program, starting from renting tools for cultivating the land, seeds, fertilizer, all of which will later be handed over to the heads of the sub-district villages for the community. accept. After that, the third party accompanies the mustahik who run the program, the third party distributes what is needed and what is expected in this program according to the agreement with BAZNAS. This program started running in 2017 and the process of planting and determining villages began in mid-2018. Because the land and mustahik survey process was carried out by BAZNAS before selecting the villages and mustahik so that they really met BAZNAS standards in determining mustahik, the planting process began can run in mid-2018"

From the results of the interview above, it can be understood that the process of implementing this program can be divided into several steps, namely:

#### **Program Submission**

Initially the formation of this program was proposed by a third party or as a field assistant, offering a program to improve the community's economy. The program itself was the first to be carried out in Bangka Belitung. The application for this program was the result of an agreement between a third party and BAZNAS in which both

parties had collaborated and agreed that the program would be compatible with the sorghum zakat village cultivation program.

#### **Determination of Impossible**

This mustahik is determined by submitting a proposal from the village itself, which in this case is a village in the sub-districts of Kelapa and Air Itam Pangkalpinang. As stated by Muhammad Syamsir (Deputy 2 of BAZNAS)

"The determination of villages for this program is through submissions from the villages concerned, because this program is new and for testing, the selection is not too strict. "When there is an application from a village where there are many mustahik, then we evaluate and survey it and then determine that the village is entitled to receive benefits from the sorghum program."

The results of determining mustahik in this village are that there are 28 mustahik for 7 hectares of land in Beruas village, Kelapa District, and there are 7 mustahik for 1.5 hectares in Air Itam Pangkalpinang.

#### **Field Survey**

After determining the mustahik, BAZNAS then directly surveyed the mustahik regarding the readiness and availability of land for the implementation of the program. The goal is that this program can be implemented optimally. This survey was carried out only to ensure the community's readiness to collaborate in implementing this program. The survey was carried out simply, with BAZNAS assessing that the readiness was not too strict. Because this program is the first to be initiated, the survey process does not burden the community, as long as they have land, and there is a statement of inadequacy from the village, then the financial assistance is distributed.

#### **Delivery of Zakat Fund Assistance**

The distribution of funds for this program comes entirely from BAZNAS to the mustahik. But on the other hand, BAZNAS collaborates with a third party as a field assistant for the program, the funds given to the community are fully managed by the third party, because here the third party is not only a field assistant, but they also provide all the needs for the program. Starting from seeds, fertilizer, rental of tools for working on land and everything the

community needs to run the program. This means that people buy seeds, fertilizer, and even rent tools to work on land from third parties, this is to make it easier for farmers to carry out the program. Apart from that, the third party has made an agreement that they will be ready to store or buy the community's harvest so that the community is not confused about where to sell the harvest. This program started running in mid-2017, but field implementation or sorghum planting began in early 2018. This is because the survey process from BAZNAS takes a long time, so that the process of determining mustahik is in accordance with BAZNAS operational standards so that funds are distributed appropriately to those who need them.

During the field assistance process, starting from land cultivation or land preparation, planting, to harvest, this is carried out by a third party or companion. As stated by Muhammad Syamsir (Deputy chairman 2 of BAZNAS):

"In terms of this program, we at BAZNAS collaborate with a third party, where the distribution of funds is entirely from us, but for field assistance we completely trust the third party. "Here we only ask for reports and documentation of their field activities, but in this case of course we don't just let go of supervision, sometimes we also go to see firsthand the process of the program running."

It cannot be denied that to run the program there must be someone who is an expert in the field of the program or who has more understanding and experience, so in this case BAZNAS collaborates with a third party, namely as a field assistant. BAZNAS confirmed that it was true that all the funds distributed came from them, but in terms of technical matters in the field they gave their trust to the field assistants. However, they still control the running of the program, and it is not uncommon for them to go to the field as a form of supervision and ask for accountability reports by documenting every activity that takes place. This was done to see the extent of success and seriousness in implementing the sorghum zakat village program.

Efendi (Mustahik, 2019) added that:

"For supervision from BAZNAS, they only ask for reports from third parties, and go into the field when they want to see the travel process and harvest time. Because supervision in the field is the responsibility of a third party and they only provide activity reports according to the initial agreement. "Meanwhile, supervision carried out by third parties is very intentional or responsible, from the process of land clearing, planting, maintenance and harvesting processes, they always supervise and provide solutions to every problem or obstacle for farmers."

Supervision carried out by BAZNAS only takes the form of making reports by field assistants. If possible, BAZNAS also goes into the field to see the significance of implementing the sorghum zakat village program in the field. However, the duties of village assistants are different. So in this case, the entire responsibility falls on the field assistant. For this reason, field assistants are very intensive in supervising the implementation of this program in the field, starting from land acquisition, planting, maintenance, and harvesting. Not only that, these field assistants often act as mediators in problems faced by the community in the field.

In this case, Deddy Hartadi (3rd party, 2019) also confirmed this, he said:

"Technically, the mustahik do not receive money directly from BAZNAS but they receive goods in the form of seeds, fertilizer and land processing, so the mustahik just need to plant and care for the sorghum directly. Everything has been prepared by a third party. Because BAZNAS collaborates with a third party, BAZNAS hands over funds for the program according to the budget details that have been made by the third party during the one year contract agreement between the 3rd party and BAZNAS. And all the sorghum harvests belong entirely to the mustahik."

It can be understood from the statement above that the distribution of funds provided by BAZNAS is not directly received by the public in the form of money. However, the community received assistance in the form of seeds and fertilizer. Therefore, the community is tasked with cultivating the land, planting and directly caring for the sorghum program. The funds distributed by

BAZNAS are adjusted to the details of the estimated funds submitted by the field assistants, with a contract period of one year. However, the proceeds from the sorghum harvest completely belong to the mustahik.

Muhammad Syamsir also emphasized that:

"From the BAZNAS side, the facilities are in the form of capital. From this capital, facilities are provided such as rental assistance for managing the land, for seeds and for managing the harvest of third parties who have promised to manage the harvest. "So BAZNAS's role is only to maximize the role of capital until harvest, for which the draft budget has been prepared by a third party"

From the explanation above, it confirms that BAZNAS entered into an agreement with a third party with funds provided by BAZNAS to run the program and the third party provided what was needed in the process of running the product. These provisions start from renting equipment for managing land, providing seeds, to managing harvest time. Apart from that, they also make agreements to purchase farmers' harvests which can be purchased directly by third parties. This way, people don't need to worry about selling their crops.

As for the distribution of funds provided by BAZNAS to mustahik, Efendi (mustahik, 2019) emphasized that:

"The assistance from BAZNAS is in the form of money, for 1 mustahik 3 million rupiah, but we did not receive this money in full, because it was managed by a third party or companion. "From these funds, we put it into land processing, seeds, fertilizer, treatment costs in the form of pest poisons or vesticides that are needed, the rest we are given money for the maintenance process and the harvesting process."

The statement expressed by Efendi above provides an understanding that the distribution of funds provided by BAZNAS was initially in the form of money where each mustahik received funds amounting to three million rupiah, but this money was not taken by them. However, this money was entrusted to be managed by a third party for the implementation and needs of the sorghum zakat village program. They

managed this three million by explaining the funds needed for purchasing fertilizer and maintenance up to harvesting, which was directed to field assistants.

And also the assistance process is not only in the planting and harvesting process, but also the assistance process in processing sorghum seeds into food, such as sorghum pop. As Deddi Hartadi said:

"We carry out the assistance process not only from planting to harvest, but also the process of processing sorghum into food ingredients such as sorghum pop which is a food like popcorn and also making cakes from sorghum flour into sponge cakes or something like that"

From the statement above, it can be concluded that the assistance process carried out by third parties is not only assistance on the land, but assistance in processing sorghum into food is also taught to mustahik. Teaching how sorghum seeds can be processed into food called sorghum pop or something similar to popcorn and also teaching how sorghum seeds that have been turned into sorghum flour become cakes, such as sponge cake or the like.

In assisting the processing of sorghum seeds into sorghum pop, Efendi also confirmed this, he stated that:

"Apart from field assistance, we farmers are also taught how to process sorghum seeds into food, namely sogum pop and also processing sorghum flour into sponge cakes and jungkong cakes"

Judging from the explanation above, the mentoring process carried out by third parties also teaches how sorghum seeds become edible food, and how to make cakes from sorghum flour into sponge cakes and jungkong cakes.

## **2. Impact of Implementing the Sorghum Zakat Village Program**

Every business definitely wants a significant impact on the business it runs. But on the other hand, every business definitely has risks, both small and large. Like the sorghum zakat village program which is run in Beruas Village, Kelapa District, West Bangka Regency.

Before the program is implemented, farmers and third parties first target that the business will be 100% successful. By maximizing program implementation as

much as possible, in terms of planting to the maintenance process. As stated by Deddy Hartadi:

"In this case, we are targeting profits from the program of up to 100%. It is estimated that every one hectare of sorghum land can produce 4 tons of sorghum grain, and every one hectare of land is run by four farmers. This means that each farmer will be able to produce 1 ton of sorghum grain for his first harvest. And for the second and third harvests it can increase by 2 tons for each harvest."

From the results of the interview above, it can be seen that the third party has targeted the results of the sorghum zakat village program with details for one hectare of sorghum land managed by four farmers or mustahik. With a yield of 4 tons of sorghum grain per hectare, each farmer can harvest one ton for his first harvest. Meanwhile, for the second and third harvests, there can be an increase of two tons per harvest, this means that for every one hectare of sorghum land, the first harvest is 4 tons and for the second harvest it can reach 6 tons and the third harvest can reach 8 tons. And each farmer can harvest 1 ton for his first harvest, while the second harvest can increase by 1.5 tons and the third harvest can reach 2 tons. This means that one planting of sorghum can produce three harvests.

The sorghum zakat village program in Beruas Village, Kelapa District, West Bangka Regency has had a less significant impact. This can be seen from the unsatisfactory harvest results. It cannot be denied that the impact of this program is not 100%, but it could be said to be 40 – 50%. This is in accordance with what was conveyed by Efendi (Mustahik, 2019)

"The impact is not yet very visible in terms of improving the economy, for the sale of sorghum for two harvests, approximately 100 kg, the rest is saved for seeds and processed by the family themselves, and the proceeds from the sale of sorghum can increase my income, which usually only earns to buy daily food and now with this program I can save even though the amount is not large and hopefully in the future the results will be optimal"

From the interview above, it is understood that the impact of implementing the sorghum zakat village program on improving the community's economy has not yet had a positive impact. Because the expected income does not match the desired target. The target for one person should be 1 ton for the first harvest and 1.5 tons for the second harvest, whereas what Efendi got was approximately 150 kg. The 100 kg is for sale and the rest is used as seeds and processed by the family. However, from this program, mustahik whose income usually only covers daily food, from the sorghum harvest they can increase their income and save even though the amount is not much, but in the future they hope to be able to maximize their harvest even more. Therefore, if you look at these results and compare them with the desired targets, it can be ascertained that the program can be said to have had an impact, even if it was small, in improving the community's economy.

Apart from the sale proceeds, another impact is that the sorghum seeds can become family food at home, according to what Efendi explained, namely:

"Another impact that we have is that we can process the sorghum seeds ourselves into food, namely sorghum pop and from the sorghum flour we can make sponge cakes or similar"

Even though the impact is not yet very visible in improving the economy of the mustahik, with the development of processing sorghum seeds into food, at least farmers can reserve sorghum for family meals at home.

In particular, the sorghum zakat village program itself has an impact on individual residents, in terms of employment, they get new jobs or businesses. As expressed by Efendi (Mustahik, 2019):

"There has been an increase, although the impact of the increase is not very visible in terms of improving my economy. "At least what previously we farmers had no business for, with this program it has become available, and the results of the sorghum harvest are bought by BUMDES of the village of Beruas itself at a price of 3,000 rupiah per kg"

The interview above can provide an understanding that it cannot be denied that there is a less visible and significant impact on improving the community's economy. However, if we look at it in terms of work or business, it is clear that the impact is very good, because initially the mustahik had no business, after the emergence of the sorghum zakat village program it appears that they have a new business. Moreover, in terms of production, they have no difficulty, because those who buy the harvest are the BUMDES of Beruas Village with a price per kg of IDR. 3000.

BAZNAS also commented on the impact obtained by the program, which was stated by Muhammad Syamsir (deputy chairman 2, 2019) as follows:

"From this sorghum zakat village program, so far the impact on the community has not been seen to be significant, because there are a number of obstacles that are difficult for farmers to anticipate and also perhaps because this program is just being implemented for the first time, there are many things that farmers don't know yet and cause it to be less than optimal for the result"

From the explanation from BAZNAS, it appears that there is a lack of impact on improving the economy for sorghum farmers due to obstacles that are beyond the expectations of farmers which are difficult to anticipate and also because this program is still being implemented for the first time or is a trial program, therefore there are many things or obstacles. which is not yet known to the public, so that the results obtained are less than optimal.

### **3. Obstacles faced in the Implementation of the Sorghum Zakat Village Program**

In running a business, of course there are no obstacles or obstacles in running it. Because no business can be run without obstacles, both small and large. Likewise in the implementation of the sorghum zakat program in Beruas Village, Kelapa District, West Bangka Regency.

Efendi explained that:

"The constraints faced by the farmers were in the form of land constraints, due to the trials of the sorghum team and the village head, the use of rice fields, because

at that time the rice fields were empty or no longer being planted with rice, therefore through the village head, the sorghum team and BAZNAS tried to plant on the land ricefield. The problem is that during the planting process the rainy season falls and coincidentally the rice fields are next to a river, the river water is high and heavy rain causes the sorghum plants to be flooded with water for a very long time, whereas at that time the sorghum has just been planted of course the roots of the sorghum are still weak and the situation is like this causes abnormal growth of sorghum and causes not all seeds to grow and live. "The solution to this problem is that they move the land to drier land, because the sorghum plant is not optimal if planted on land with strong water."

From this explanation, it cannot be denied that the obstacles that occurred were natural obstacles which were beyond the expectations of the farmers. The natural obstacle in question is rain. Where when it was still in the planting process, the rain had not yet fallen. However, when the seed planting was carried out, not long after that the rainy season hit. Where when the rain falls it is accompanied by an increase in the volume of river water, while the sorghum land is adjacent to the river, as a result the river water overflows into the sorghum land plus rain water, then the land is flooded with quite a lot of water and the sorghum seedlings that are just about to grow are submerged in water and This results in some seedlings dying because their roots are still not strong enough to survive in standing water. Therefore, this obstacle causes the seeds to grow unevenly and grow abnormally, of course this causes farmers to produce less than optimal harvests. The solution to this problem is that farmers have to move to dry land, because sorghum plants cannot survive optimally if they are on watery land, so this requires farmers to move to more conducive land.

This obstacle was also emphasized by Deddy Hartadi

"The first obstacle faced in carrying out this sorghum program is land, because the land used is partly rice fields, because in the process of growing sorghum before it reaches a longer age, the land has been

flooded with water, in this case the sorghum plants cannot grow optimally and there are many seedlings. who loses and dies. Automatically, in this case, if the land is flooded with water, the harvest will certainly fail and will not meet expectations, because when the water appears the plants are not yet strong and the stems rot. "In terms of land problems, this was not due to negligence on the part of Baznas or third parties, because at the time of the survey the land was free of water during the summer and looked dry, but during the rainy season the water was abundant and this problem occurred."

Deddy Hartadi emphasized that this land problem was unexpected, because at the time of the land survey it was still summer, of course the land was still dry and ready to plant sorghum seeds. Of course, this land problem was not only due to negligence on the part of BAZNAS or third parties but the circumstances. natural. Because the land has been inundated with water for quite a long time while the newly planted sorghum plants are not strong enough to survive and this causes the sorghum plants to die and lose or grow abnormally. Of course, this will cause farmers to have failed harvests or less than optimal harvests.

Not only that, the problems that occur in the field are not only land, but in terms of maintenance there are also problems, as emphasized by Efendi:

"There are several obstacles to maintenance here, firstly, mice. The problem with mice is that mice cut young sorghum stalks, resulting in stunted sorghum growth and can cause crop failure. The solution to this problem is that we, the farmers, provide a type of chemical or rat poison so that rats no longer attack and by cleaning the land optimally so that rats do not nest in the sorghum fields. The second obstacle is the perit bird, flocks of these birds eat young sorghum fruit, and flocks of these birds usually flock together, and they can cause crop failure and less than optimal harvests, because when the young fruit is eaten then at harvest time the fruit will only be dregs. and harm farmers. The solution to this problem is that the farmers make a kind of scarecrow and there are also farmers who

stand guard on the land to repel when a flock of fairy birds attack. "But when the sorghum fruit starts to ripen, the flocks of sorghum birds don't like it anymore. When the condition of the sorghum fruit starts to show and the fruit is ripe, the farmers control the land more often to avoid the problem of flocks of birds."

From the interview above, the obstacles that occur in the field in maintenance are pests, and these obstacles can be specified into several types. These pests include:

#### **Rats**

Rats are a pest that farmers take into account, because rats can damage the stems of sorghum plants by biting the stems, thus often causing the plant stems to break. Therefore, the presence of rat pests results in farmers' harvests not being optimal or it could be said that they fail to achieve targets.

#### **Sparrows**

Not only that, the next pest is also caused by flocks of sparrows. This flock of sparrows should not be underestimated, because a flock of these birds can directly cause crop failure because the flock of birds sucks the starch of the young sorghum seeds. It is known that if this happens, when the time comes, the sorghum seeds sucked by the flock of sparrows will be empty or empty.

The explanation above can provide an understanding that in carrying out the sorghum planting program there are several obstacles in the form of pests. In anticipating this or even minimizing these pests, they also make scarecrows. Not infrequently, they are always on the land to monitor the sorghum plants to avoid flocks of sparrows.

### **Conclusion**

Based on the results of research conducted by researchers regarding the sorghum zakat village program (sorghum cultivation) in Beruas Village, Kelapa District, West Bangka Regency, it can be concluded that:

#### **Implementation of the Sorghum Zakat Village Program**

- a. The third party submitted a proposal to BAZNAS

Before the formation of the sorghum zakat village program, a third party submitted a proposal for sorghum cultivation activities in collaboration with BAZNAS, in this case BAZNAS as the channel of funds for this activity and the third party as the field assistant.

b. Determination of villages and mustahik

In determining the villages and mustahik, villages in the coconut sub-district, West Bangka Regency were selected to carry out the program. Before the village and its mustahik are selected, the village sends a proposal for assistance to run the program and determines the mustahik who have the right to receive and run the program.

c. Field survey

After determining the village and mustahik, BAZNAS and a third party conducted a field survey with the aim that the process of implementing the sorghum zakat village could run as expected.

d. Handover of BAZNAS funding assistance

To hand over funds from BAZNAS, BAZNAS directly hands over the funds to the mustahik, and then the mustahik hand over the funds to a third party. This is because all the equipment and needs for the program implementation process are provided by a third party and the mustahik just need to prepare the land and carry out planting.

e. Mentoring process

In implementing the sorghum zakat village program, the field assistance process is completely carried out by a third party. Because third parties better understand and understand the process of cultivating sorghum. Meanwhile, BAZNAS only asks for implementation reports and documentation from third parties, and sometimes goes directly into the field to see firsthand the program implementation process.

### **Impact of Implementing the Sorghum Zakat Village**

As for the implementation of the sorghum zakat village, there has not been much impact, especially the impact of improving the economy of the mustahik. Because this program is just a trial, of course there are many things that are not yet understood in running the program. And this program does not yet get maximum results from the harvest, but the mustahik

can save even though the amount is still not optimal and the mustahik can still sell the harvest even though it does not meet expectations and can use it for consumption at home and save half the harvest for seeds for planting. furthermore.

### **Obstacles in implementing the Sorghum Zakat Village**

The obstacles faced in implementing the sorghum zakat village program are as follows:

a. Land

Land is one of the obstacles that causes less than optimal harvest failure in this program. This is because at the beginning of planting the seeds the land was flooded with water for quite a long time and caused the seeds to die and grow abnormally. Of course, during the harvest period, the harvest will be less than optimal and not as expected.

b. Sparrows

Sparrows are pests whose existence must be taken into account. Because a flock of sparrows can thwart the sorghum harvest. A flock of sparrows can suck the essence of young sorghum seeds, so if this happens, you can be sure that the sorghum seeds are not full.

c. Mouse

The next pest is mice. Rats are a pest to avoid because rats can damage sorghum stems by biting the stems. This is very worrying. This is because rat pests can thwart sorghum harvests.

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### **Conflict of Interest**

The author raised this theme because the decline in the economic level of the people of Bangka in terms of the decline in the selling price of people's livelihoods which is not comparable to the purchase price of people's basic necessities has given rise to many complaints from the public regarding this matter. Therefore, BAZNAS Bangka Belitung Province has launched a community empowerment program to improve the community's economy through the sorghum zakat village program.

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