Factors Influencing Rice Production and the Relationship with Fertilizer Subsidies at East OKU District

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A B S T R A C T

East OKU Regency, renowned for its vast potential in the primary agricultural and plantation sectors, has witnessed a significant increase in agricultural production. However, many farmers report difficulties in obtaining subsidized fertilizer, which hampers optimal planting processes. This research aims to analyze the factors affecting rice production and the impact of subsidized fertilizer in Madang Suku I District, East OKU Regency. The research employs a survey method and uses simple random sampling for data collection. Multiple regression analysis is utilized to analyze the data. The study examines the impact of subsidized fertilizers, specifically urea fertilizer (X1) and NPK fertilizer (X2), both individually and collectively, on rice production in Madang Suku I District, East OKU Regency. The findings reveal that the subsidized fertilizer policy significantly contributes to increased rice production in the region. Rice production in East OKU has reached 689,678 tons of milled dry grain (GKG) or 811,385 tons of unmilled dry grain (GKP) from a planting area of 108,141 hectares (Ha), marking a 20 percent increase compared to 2021. Consequently, in early 2022, East OKU Regency emerged as one of the top rice-producing districts in South Sumatra province. Several factors influence rice production in Madang Suku I District, including land area, labor, the number of seeds, subsidized fertilizer, and pesticides. The land area has the most significant impact on rice production, with a beta coefficient of 0.567, indicating its substantial influence.

1. INTRODUCTION

1.1. *Research Background*

Indonesia is an agricultural country, a country where the majority of the population makes their living as farmers. Apart from that, the agricultural sector is a very important sector. So development priorities are placed on the agricultural sector to meet domestic food and industrial needs, increase exports, increase farmers' income and expand employment opportunities [1]. Food is a basic need for humans to be able to maintain life, and because sufficient food for everyone at all times is a human right that deserves to be fulfilled. Based on this, the problem of meeting the food needs of the entire population at any time in a region is a country's main target of food policy. Indonesia, as a country with a large population, faces very complex challenges in meeting the food needs of its population, so that the problem of food security has become a central issue in development and a focus in agricultural development [2].

One of the government's roles is to provide subsidies for the agricultural sector. Subsidies are a form of government assistance to reduce the burden on society by paying part of the price that should be paid by society or certain groups of society to provide goods or services related to the interests of many people's lives. One of the subsidies in the agricultural sector is fertilizer subsidies. Subsidized Fertilizer is goods under supervision whose procurement and distribution receive subsidies from the Government for the needs of farmer groups and/or farmers in the agricultural sector. Subsidized fertilizer is assistance issued by the government to farmers in order to improve the quality of agricultural or plantation products in Indonesia [3]. Fertilizer is organic or inorganic material containing nutrients that is added to planting media or plants to meet the nutritional needs of plants

with the aim of maximizing growth and productivity. Fertilizer is needed to increase agricultural productivity. In fertilizer distribution, fertilizer prices are often unstable, so the government provides subsidies through subsidized fertilizer. The government pays close attention and supervision to subsidized fertilizer in its distribution in each region. The government provides subsidized fertilizers such as urea, SP 36, ZA, NPK and Organic. In reality, various problems are often encountered, such as a scarcity of subsidized fertilizer. Various government policies to support increasing productivity and quality of food commodities are continuously being implemented sources.

Various government policies to support increased productivity and quality of food commodities continue to be implemented. This is to maintain domestic food availability or realize national food security. One of the government's policies is to provide fertilizer subsidies to farmers to reduce production costs.

The fertilizer subsidy policy experiences pros and cons from year to year. On the one hand, the government is still persisting with the fertilizer subsidy policy to maintain food security by maintaining production levels. Production can be maintained to meet food needs by providing good inputs, one of which is fertilizer. Adequate use of fertilizer in terms of quantity, quality and continuity is needed to reduce the decline in soil fertility and increase sustainable productivity [4], so if fertilizer subsidies are reduced it is feared that it will disrupt productivity. However, on the other hand, the budget allocation for the fertilizer subsidy policy is very large. The government must start cutting the fertilizer subsidy budget and divert it to other programs, especially investment in agricultural technology.

Fertilizer subsidies are still needed because fertilizer plays a very important role in increasing agricultural production. In the context of agricultural development, fertilizer is an important and strategic element in increasing production and productivity and is an inseparable part of the farming system [5]. In line with this, [6] states that fertilizer subsidies can increase production.

Some farmers in South Sumatra admit that it is difficult to get subsidized fertilizer, which makes the planting process less than optimal. Deputy Chair of the Indonesian Farmers' Harmony Association (HKTI) South Sumatra Farmer Youth, Khoiril Sabili, said that difficulties in getting subsidized fertilizer have occurred since the early planting period in 2021. "The amount of fertilizer given is different from what is usually received; at the moment, it is a bit difficult. According to [7], most farmers in his area rely on non-subsidized fertilizer because the allocation for subsidies is limited.

Farmers are complaining about this situation because the government is targeting an increase in production. Subsidized fertilizer is very limited, the amount is not much. So many farmers get non-subsidies, but in reality, it is also difficult to get them. The company distributes subsidized fertilizer according to the mechanism determined by the government. In 2021, PT. PUSRI is obliged to distribute 230,000 tons of subsidized urea and NPK fertilizer to 17 districts/cities in South Sumatra. Regarding farmers' needs, Pusri also provides non-subsidized fertilizer, with the company's production capacity guaranteed to meet South Sumatra's needs. Distribution of subsidized fertilizer is in accordance with the Electronic Group Definitive Needs Plan (e-RDKK) mechanism managed by the Ministry of Agriculture. Implementing the e-RDKK system can minimize fraud so that the distribution of subsidized fertilizer is right on target. In

distributing subsidized fertilizer, Pusri refers to the Minister of Trade Regulation Number 15/M-DAG/PER/4/2013 concerning the Procurement and Distribution of Subsidized Fertilizer for the Agricultural Sector nationally starting from Line I to Line IV. So far, PT. PUSRI ensures that subsidized fertilizer stocks are available in accordance with the allocation determined by the government. Apart from ensuring the fulfillment of fertilizer stocks at retail kiosks, PT. PUSRI also ensures that in the distribution of subsidized fertilizer there is no misuse or scarcity of fertilizer. Up to 8 February 2021, the distribution of subsidized urea fertilizer reached 11,607.30 tons and 10,657.55 tons of subsidized NPK fertilizer for the South Sumatra region. PT Pupuk Indonesia (Persero) has prepared a stock of subsidized fertilizer in the South Sumatra (Sumsel) region of as much as 18,482 tons to meet the October 2021-March 2022 planting season.

East OKU Regency is also one of the largest rice-producing areas in South Sumatra. This is supported by the existence of the Perjaya Dam and an adequate irrigation network. East Ogan Komering Ulu Regency has potential in terms of production and area of food crops after expansion conditions. Many farmers rely on this irrigation network, although there are also swidden and rain-fed agricultural businesses.

East OKU Regency, as an area that has great potential in the primary agricultural and plantation sectors, has an increasing amount of agricultural production. In 2021 the area of harvested land reached 104,905 ha, increasing to 105,972 ha, with the amount of grain production in 2022 reaching 617,943 tons of harvested dry grain (GKP). This means that per hectare of rice land produces 5.91 tons. Rice production experienced an increase in total production of 1.01% from 2021. 19.36% of the 391,732 tons of total rice production was consumed by residents of EAST OKU, while 80.64% became a national food commodity.

The largest rice-producing districts in this district are East Buay Madang District, Semendawai Suku III District and Buay Madang District. In 2021, the level of lowland rice production in East OKU Regency will reach 617,943.46 tons of harvested dry grain (GKP), with a lowland rice harvest area of around 104,634 Ha. Of this production, 98,288.3 tons or 15.91 per cent was produced from East Buay Madang District.

1.2. Literature Review

1.2.1. Contribution

Contribution is giving a share in a role activity, inputting ideas, etc. Contribution is the amount of contribution made from an activity or job to family income. The contribution of farmers' income from homestead farming to household income has made a significant contribution to helping farmers' household income [8]. Contribution comes from the English language contribute, contribution, which means participation, involvement, involvement or donation. In this case, the contribution can be in the form of material or action. Contribution in the sense of action is in the form of behavior carried out by an individual that then has a positive or negative impact on other parties. According to [9], contribution is participating or providing ideas, energy and so on in activities. What is meant by contribution is giving or taking part in an activity in the form of information, ideas, and energy in order to achieve something planned.

According to Ref. [10], contribution is giving or taking part in an activity in the form of information, ideas, energy in order to achieve something planned. Contributions made by individuals or

groups can be divided into several forms, namely: 1) material contributions. Material contributions are contributions related to donations or assistance in the form of funds/money. 2) non-material contribution. Non-material contribution is another form of contribution other than funds/money. These contributions can be in the form of actions and thoughts.

1.2.2. Subsidized fertilizer

Subsidized fertilizer is fertilizer whose procurement and distribution receive subsidies from the government for farmers' needs which is carried out on the basis of a government program. Companies that produce Urea, SP-36, ZA, NPK Phonska and organic fertilizers domestically are PT Pupuk Sriwidjaja, PT Pupuk Kujang, PT Pupuk Kalimantan Timur, PT Pupuk Iskandar Muda and PT Petrokimia Gresik. Distributors are legal business entities appointed by producers to purchase, store, sell and market subsidized fertilizers, in bulk to be sold to end consumers through retailers. Meanwhile, official retailers are individuals or business entities appointed by distributors whose main activity is selling directly to final consumers in small parties [11].

According to [12], distribution and marketing stock patterns are faced with factors where the production source has constant production characteristics, while fertilizer use fluctuates depending on the season, not to mention the factors involved in transportation problems. Maximum efforts continue to be made to avoid the emergence of undesirable high-cost economies, namely by developing distribution and distribution patterns using the least-cost distribution system method or distribution pattern. Subsidized fertilizer is fertilizer whose procurement and distribution receive subsidies from the government for farmers' needs which is carried out on the basis of a government program. Companies that produce Urea, SP-36, ZA, NPK Phonska and organic fertilizers domestically are PT Pupuk Sriwidjaja, PT Pupuk Kujang, PT Pupuk Kalimantan Timur, PT Pupuk Iskandar Muda and PT Petrokimia Gresik. Distributors are legal business entities appointed by producers to purchase, store, sell and market subsidized fertilizers, in bulk to be sold to end consumers through retailers. Meanwhile, official retailers are individuals or business entities appointed by distributors whose main activity is selling directly to final consumers in small parties [13].

1.3. Research Objective

This study aims to analyze the factors of rice production and the relationship of subsidized fertilizer in Madang Suku I District of East OKU Regency.

2. MATERIALS AND METHODS

The research was carried out in September 2023 in Madang Suku I District, East OKU Regency. Determining the research location was carried out purposively considering that Madang Suku I District, East OKU Regency, is a district that has an area of rice fields and rice production and is related to fertilizer subsidies; the farmers involved are farmers who receive subsidized fertilizer. The method used in this research is the survey method. The sampling method used was a simple random sampling method from 9,335 farmers who received subsidized fertilizer; 95 people were taken as samples. The data analysis method uses multiple linear regression to analyze the factors influencing rice production in Madang Tribe I, East OKU Regency.

3. RESULT AND DISCUSSION

3.1. Factors affecting rice production

The factors thought to influence the increase in rice production in Madang Suku I District, East OKU Regency are land area (X1), labor (X2), seeds (X3), subsidized fertilizer (X4), and pesticides (X5). The results of data analysis carried out with SPSS software produced the following model:

$$\text{Log } Y = \text{Log } 7.198 + 0.642 \text{ LogX1} + 0.594 \text{ LogX2} + 0.325 \text{ LogX3} + 0.695 \text{ LogX4} + 0.636 \text{ LogX5}$$

The multiple linear regression equation can be interpreted as follows:

a. The constant value is 7.198. This shows that if the variables land area (X1), labor (X2), number of seeds (X3), subsidized fertilizer (X4), and pesticide (X5) are zero, then the rice production in Madang Suku I District, East OKU Regency is equal to 7,198 units.

b. The land area coefficient value is 0.642, meaning that if the land area used by farmers to carry out rice farming activities increases by 0.642%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.642% with the assumption that other variables are considered zero or constant.

c. c.The labor regression coefficient is 0.594, meaning that if the labor used by farmers to carry out rice farming activities increases by 0.594%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.594% with the assumption that other variables are considered zero or constant.

d. d.The regression coefficient for the number of seeds is 0.325, meaning that if the number of seeds used by farmers to carry out rice farming activities increases by 0.325%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.325% with the assumption that other variables are considered zero or constant.

e. The regression coefficient for subsidized fertilizer is 0.695, meaning that if the subsidized fertilizer used by farmers to carry out rice farming activities increases by 0.0.695%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.695% with the assumption that the other variables are considered zero or constant.

f. The pesticide regression coefficient is 0.636, meaning that if the pesticides used by farmers to carry out rice farming activities increase by 0.636%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.636% with the assumption that other variables are considered zero or constant.

The Adjusted R Square value was obtained at 0.873. The Adj R2 value means that 87.3% of rice production in Madang Suku I District, East OKU Regency, can be explained by the independent variables explained in the model, such as land area (X1), labor (X2), number of seeds (X3), subsidized fertilizer (X4), and pesticides (X5). Meanwhile, the remaining 13.7% is explained by other variables outside the research, such as weather, climate, farming experience, farmer age, technology and others [14]

The results of the F test show that the results of simultaneous testing of all estimated parameters at a confidence level of 95% show that the F table value > calculated F (34,767 > 2,330). It can

be said that the independent variables which include land area (X1), labor (X2), number of seeds (X3), subsidized fertilizer (X4), and pesticides (X5) together have a significant effect on rice production in the District. Madang Tribe I East OKU Regency.

The results of the t-test show that the variables of land area (X1), labor (X2), number of seeds (X3) and subsidized fertilizer (X4) individually have a significant effect on rice production in Madang Suku I District, East OKU Regency. Meanwhile, the pesticide variable has no real effect on rice production in Madang Suku I District, East OKU Regency.

The land area has a calculated t value > t table, 3.057 > 1.991, which means the land area has a real effect on rice production in Madang Suku I District, East OKU Regency at a 95% confidence level. The land area coefficient value is 0.642, meaning that if the land area used by farmers to carry out rice farming activities increases by 0.642%, then rice production in Madang Suku I District, East OKU Regency, will increase by 0.642% with the assumption that other variables are considered zero or constant. These results align with research by [14] and [15], which states that land area factors directly influence rice production.

Labor has a value of t calculated < t table, namely 4,816 < 1.991, which means that labor has a real influence on rice production in Madang Suku I District, East OKU Regency at a 95% confidence level. The labor regression coefficient is 0.594, meaning that if the labor used by farmers to carry out rice farming activities increases by 0.594%, then rice production in Madang Suku I District, East OKU Regency, will increase by 0.594% with the assumption that other variables are considered zero or constant.

The labor variable significantly affects Madang Suku I District, East OKU Regency rice production. These results align with research by [16], which states that labor influences rice production. When the workforce decreases, rice production will decrease in Madang Suku I District, East OKU Regency. This is because the number of workers in producing rice plants in Madang Suku I District, East OKU Regency, is much needed due to the high productivity of rice in Madang Suku I District, East OKU Regency.

This is proven by the theory of the law of diminishing returns, which means that if we add one factor of production, in this case, labor, while the land area is considered constant, then productivity will decrease. This theory comes from David Ricardo's theory. According to Ref. [17], research shows that labor significantly affects rice production. These results align with the findings of [18] and [19], which stated that labor factors directly influence rice production.

The number of seeds has a calculated t value > from t table, namely 1.708 > 1.991, which means that the number of seeds has a real effect on rice production in Madang Suku I District, East OKU Regency at a 95% confidence level. The regression coefficient for the number of seeds is 0.325, meaning that if the number of seeds used by farmers to carry out rice farming activities increases by 0.325%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.325% with the assumption that other variables are considered zero or constant. The results of this research align with research by [9], which states that the number of seeds is one of the factors influencing rice production. The greater the number of seeds planted, the more likely it is that the plants will grow so that the resulting rice production will also be large.

The subsidized fertilizer variable has a calculated t value > t table, namely 2,318 < 1.664, which means that subsidized fertilizer has a real effect on rice production in Madang Suku I District, East OKU Regency. The regression coefficient for subsidized fertilizer is 0.695, meaning that if the subsidized fertilizer used by farmers to carry out rice farming activities increases by 0.0.695%, then rice production in Madang Suku I District, East OKU Regency will increase by 0.695% with the assumption that the other variables are considered zero or constant.

These findings align with Sarah [10] 's assertion that the use of pesticides has a real influence on rice farming production. Pesticides' role in rice production is different from that of other inputs. Pesticides do not increase production but save it from pest and disease attacks. The relationship with increased production occurs because healthy plants will be more responsive to the absorption of nutrients, so rice production increases.

The highest standard value of the partial regression coefficient (beta coefficient) is land area with a value of 0.567, which means that land area has the greatest influence on rice production in Madang Suku I District, East OKU Regency. The area of land cultivated does not only directly affect production. Land area will also influence the farming management system, which will then influence the use of technology, capital and other production factors, ultimately influencing production.

4. CONCLUSION

Land area, labor, number of seeds, subsidized fertilizer, and pesticides influence rice production in Madang Suku I District, East OKU Regency. The factor that has the most influence is land area, with a standard value of the partial regression coefficient (beta coefficient) of 0.567. The subsidized fertilizer policy, namely urea fertilizer (X1) and NPK fertilizer (X2), individually and simultaneously contributes to increasing rice production in Madang Suku I District, East OKU Regency. This is evident from the increase in rice production in East OKU which reached 689,678 tons of milled dry grain (GKG) or 811,385 tons of GKP from a planting area of 108,141 hectares (Ha). This production has increased by 20 percent compared to 2021, and at the beginning of 2023, rice production in Ogan Komering Ulu Timu Regency was included in one of the districts with the highest rice production in South Sumatra province.

REFERENCE

[1] Ayun, Q., Kurniawan, S., & Saputro, W. A. Perkembangan Konversi Lahan Pertanian Di Bagian Negara Agraris. *Vigor: Jurnal Ilmu Pertanian Tropika Dan Subtropika*, *5*(2), 38–44. https://doi.org/10.31002/vigor.v5i2.3040. 2020.

[2] Istina, I. N. Peningkatan Produksi Bawang .Merah Melalui Teknik Pemupukan NPK. *Jurnal Agro*, *3*(1), 36–42. https://doi.org/10.15575/810. 2018.

[3] Juan, C. D., Joubert, D., & Allen, M. Analisis Pendapatan Petani Hidroponik Di Kecamatan Mapanget Dan Maumbi. *Jurnal Pendidikan Ekonomi*, *4*(1), 1–9. http://ejurnal.unima.ac.id/index.php/jpe-unima/article/view/7087. 2023.

[4] Kholis, I., & Setiaji, K. Analysis of the Effectiveness of Fertilizer Subsidy Policy for Rice Farmers. *Economic Education Analysis Journal*, *9*(2), 503–515. https://doi.org/10.15294/eeaj.v9i2.39543.2020.

[5] Lubis, Y. H., Panggabean, E. L., & Azhari, A. Pengaruh Pemberian Pupuk Kandang dan Mikoriza terhadap Pertumbuhan Tanaman Kelapa Sawit (Elaeis guineensis Jacq.) di Pembibitan Pre-Nursery. *Agrotekma: Jurnal Agroteknologi Dan Ilmu Pertanian*, *3*(2), 85.

https://doi.org/10.31289/agr.v3i2.1123.2019.

[6] Maman, U., Aminudin, I., & Novriana, E. Efektifitas Pupuk Bersubsidi Terhadap Peningkatan Produktivitas Padi Sawah. *Jurnal Agribisnis Terpadu*, *14*(2), 176. https://doi.org/10.33512/jat.v14i2.13268. 2021.

[7] Manggala, R. B., & Boedirochminarni, A. Faktor-Faktor Yang Mempengaruhi Produksi Padi Di Desa Sumengko Kecamatan Sukomoro Kabupaten Nganjuk. *Jurnal Ilmu Ekonomi*, *2*(3), 441–452. https://doi.org/10.22219/jie.v2i3.7109. 2018.

[8] Novera, S. T., Ayesfi, I., Virqiyan, S., Rustinar, E., & Sakroni. Kontribusi Sosial Mahasiswa Pertukaran Mahasiswa Merdeka Dalam Meningkatkan Mutu Pendidikan Di Sdn 03 Lombok Timur. *Jurnal Pengabdian Mandiri*, *2*(2), 797–808. https://www.bajangjournal.com/index.php/JPM/article/view/5171. 2023.

[9]. Onibala, A. G., Sondakh, M. L., Kaunang, R. ., & Mandei, J. ... (Analisis Faktor-Faktor Yang Mempengaruhi Produksi Padi Sawah Di Kelurahan Koya, Kecamatan Tondano Selatan. *Agri-Sosioekonomi*, *13*(2A), 237–242. https://doi.org/10.35791/agrsosek. 2019.

[10]. Prasaktiyoga, A., & Dika, S. Effectiveness Of Fertilizer Subsidies In Sukaasih Village Sukatani District Bekasi Regency Prasaktiyoga. *Jurnal Pemikiran Masyarakat Ilmiah Berwawasan Agribisnis*, *7*(1), 594–606. https://www.academia.edu/download/70703699/pdf.pdf. 2021.

[11] Rahmat,S.P, Jana, P.U., Aflahun, F.S., Salsabila, S., Wildani, L., Dian. R.I Analisis Pendapatan Petani Serta Faktor Yang Mempengaruhi Produksi Padi Sawah Di Kecamatan Baktinya Kabupaten Aceh Utara. *Jurnal Agrica16(1)*. https://www.ojs.uma.ac.id/index.php. 2023.

[12] Religia, S., Anggraeini, R., Agama, S., Islam, U., Raden, N., & Lampung, I. *Kontribusi Pt Pertamina Geothermal Energy Terhadap Kondisi Sosial Keagamaan Masyarakat Kecamatan Ulubelu Kabupaten Tanggamus Pt Pertamina Geothermal Energy ' S Contribution To Socio-Religious Conditions of the People of Ulubelu District Tanggamus County*. *3*(2). http://ejournal.radenintan.ac.id/index.php/sr/article/view/16083/6088. 2023.

[13] Rosidah, A. Studi Tentang Kebiasaan Petani Memupuk Padi Sawah di Desa Bener,Wonosari, Klaten. *Jurnal Pusat Inovasi Masyarakat*, *1*(1), 123–127. https://journal.ipb.ac.id/index.php/pim/article/view/28437/18060. 2019.

[14] Roza, Y. Kontribusi Usahatani Lahan Pekarangan Terhadap Ekonomi Rumah Tangga Petani Di Kecamatan Kerinci Kabupaten Pelalawan. *Indonesian Journal of Agricultural (IJAE)*, *3*(2), 97–119. https://ijae.ejournal.unri.ac.id/index.php/IJAE/article/view/1549. 2019.

[15] Sari, L. R., & Fahmi, A. Dampak Subsidi Pupuk terhadap Peningkatan Pendapatan dan Kesejahteraan Petani Kecamatan Megaluh Jombang Dalam Perspektif Fenomenologis (Studi Kasus Dusun Sudimoro Dan Dusun Paritan). *Jurnal Bisnis Dan Perkembangan Bisnis*, *2*(2), 86. https://ejournal.unwaha.ac.id/index.php/margin/article/view/328,.2018.

[16] Setianingsih, E., & Padang, N. Faktor-Faktor Yang Mempengaruhi Produksi Padi Di Desa Limau Asri (Sp V). *Jurnal Kritis (Kebijakan, Riset, Dan Inovasi)*, *2*(2), 1. Retrieved from https://ejournal.stiejb.ac.id/index.php/jurnal-kritis/article/view/18. 2018.

[17] Thamrin, M., & Ardilla, D. Analysis of production efficiency factor rice rainfed through PTT approach. *Agrium*, *20*(2), 147–156. http://jurnal.umsu.ac.id/index.php/agrium/article/viewFile/638/564. 2019.

[18] Zein, A. S., & Nurhalimah. Analisis Produksi Sawit Di Sumatera Barat Analisis Produksi Sawit Di Sumatera Barat. *Jurnal Ilmu Ekonomi Dan Keislaman*, *7*(2), 320–336. http://jurnal.iain-padangsidimpuan.ac.id/index.php/Al-masharif/article/view/2193/1783. 2018.