Agricultural Fiscal Decentralization: The Role of Local Governments in the Development of the Agricultural Sector

Muhammad Fazri^{1*}, Yulia Setia Lestari², Nur Hadiati Endah³, Nailatalmuna Nitrasatri Atmaja⁴, A. Risdawati Alwi Paluseri⁵, Syarah Siti Suprianti⁶

 $\{ muhammad.fazri@brin.go.id^1, yuli036@brin.go.id^2, nurh031@brin.go.id^3, nail005@brin.go.id^4, \\ a.risdawati.ap@brin.go.id^5, syar020@brin.go.id^6 \}$

National Research and Innovation Agency (BRIN), Indonesia

Abstract. The agricultural sector is one of main sector in Indonesia. But the proportion of agriculture continues to decline from year to year. Many studies have been done to see why this phenomenon occurs, but very few analysts have analyzed whether the role of local governments is in line with that of the central government in the development of the agricultural sector. Therefore, this study will try to see the extent of the role of local governments and its effect on the contribution of the agricultural sector to the Provincial GRDP and make a model in the role of local governments in supporting of the agricultural sector. This study uses quantitative and qualitative approaches. The data used were secondary data and primary data through Focus Group Discussions with relevant stakeholders. The results found that there is still low local government support for the agricultural sector and there is a relationship between the local government budget and the contribution of the agricultural sector. The form of local government support (fiscal decentralization) can be through 3 channels, namely through Assistance for farmer, Requesting Regional Financial Institutions and Making regulations.

Keywords: agricultural development, fiscal decentralization, local government.

1 Introduction

The agricultural sector is one of the sectors that is the center of attention in national development, especially those related to the management and utilization of strategic results, especially those concerning food commodities. The management and utilization of agricultural products is expected to be carried out in a more planned manner with optimal utilization and can be enjoyed by all Indonesian populations, On the other hand, the increasingly narrow area of agricultural land crushed by housing and industrial land and the increasing population has an impact on the difficulty of fulfilling food commodities in particular and the lives of future generations in general [1].

The government's attention to the agricultural sector, especially in the food sector, is very high. The central government provides Rp 100 trillion rupiah almost every year for

agriculture, especially the food sector. Figure 1 shows that the food budget in Indonesia is quite high and increasing. In 2014 the agricultural budget in the food sector was only around 64 trillion, then increased in 2015 to reach 100 trillion and had dropped during Covid 19 but again became a priority in 2021 and 2022.

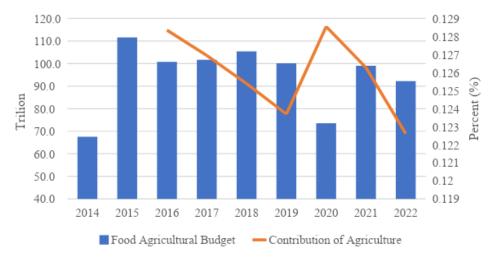


Fig.1. [2] [3] Food agriculture budget on 2014-2022, and Contribution of Agriculture Sector on 2016-2022

Although the government budget is quite high, in fact the proportion of agriculture to GDP nationally remains stagnant and even tends to decline. In 2016 the proportion of agriculture was 12.84 percent but in 2022 it only reached 12.26 percent, down 0.58 basis points from 2016. It is quite ironic that a large enough government does not cause an increase in the performance of the agricultural sector. In fact, according to The Keynesian theory, it supports the idea that government expenditure is responsible for increasing domestic economic activity [4]. Keynes argued that relatively high government spending led to an increase in aggregate demand, and ultimately increased economic growth. Government expenditure is part of fiscal policy, which is a government action to regulate the course of the economy through budget instruments.

There are many factors affecting production in the agricultural sector[5], and further noted that government spending is a tool primarily used to boost economic growth through sectors, such as agriculture in Nigeria [6]. The results showed that Regional Expenditure in the Agricultural Sector has a significant influence on the Gross Regional Domestic Product of the Agricultural Sector [7]. There is a direct relationship between regional spending and economic growth [8]. However, the study found that Regional Expenditure in the Agricultural Sector has a less significant influence on the Performance of the Agricultural Sector [8,9].

The existence of regional governments but still has a less significant influence [8]. When viewed in terms of the proportion of the budget from the regional (provincial) government, the value of the proportion of the local government budget in the agricultural sector is very small. It can be seen in figure 2. National average Percentage of Agricultural Affairs Budgeting in RKPD 2022: 2.35% of the total APBD of each region. There are 11 regions that plan

allocations for agricultural affairs above the national average. However, 22 regions whose planned allocation for agricultural affairs are below the national average.

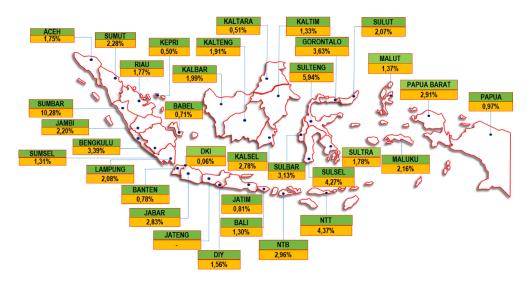


Fig. 2. Percentage of Agricultural Affairs Budgeting in the 2022 Local Government Work Plan (RKPD)

The low budget of local governments is a dilemma, whether indeed the agricultural sector is a priority sector in some regions. On the other hand, previously the central government was important because it was related to food stability. Because without the agricultural sector it will create instability for food in Indonesia. Large differences in central and local government budget allocations can occur due to differences in development priorities in the regions and lack of internalization of state priorities [10].

In the case of other countries, agriculture is generally identified as a driver of economic growth in most developing countries [11,12,13]. The Malawi government allocates a quarter of the state budget to the agricultural sector but the local government only allocates less than 3% to the agricultural sector [10]. [14] reported poor allocation of government spending in agriculture. As for Japan's agricultural sector, although it only accounts for 1.03% of the country's GDP. Local government budget allocations for Japan's agriculture, forestry and fisheries programs amounted to 3.41 trillion yen [15].

Therefore, this study will try to see the extent of the role of local governments, especially in budget support and its effect on the contribution of the agricultural sector to the Provincial GRDP and make a model in the role of local governments in supporting of the agricultural sector.

2 Method

The data used uses secondary and primary data. The secondary data used comes from official institutions in Indonesia such as the Central Bureau of Statistics and the Ministry of Home Affairs. While the primary data comes from Focus Group Discussion which invites relevant

stakeholders such as the Ministry of Agriculture, Bank Indonesia, Ministry of Home Affairs and several Regional Governments.

The method used uses quantitative and qualitative approaches. The quantitative approach uses simple correlation and regression methods to see the relationship between the proportion of local government budgets for agriculture and the contribution of the agricultural sector in the area. The scope of approach used is at the provincial level with data processed in 2022.

The formula "r" is:

$$r = \frac{N(\sum xy) - (\sum x \sum y)}{\sqrt{(N(\sum x))(N\sum y - (\sum y))}}$$
(1)

Where:

r = value of correlation coefficient

x = value of the first variable

y = value of the second variable

N = amount of data

Meanwhile, qualitative analysis is used to see what policies and roles local governments can play in assisting the central government in developing the declining agricultural sector. The method used is a review of policies and strategic nodes from the results of data obtained from the Focus Group Discussion.

3 Result and Discussion

3.1 Performance of the Agricultural Sector in 34 Provinces in Indonesia, Indonesia

The performance of the agricultural sector can be seen from the contribution of the agricultural sector to GDP, it can be seen that the average contribution of agriculture in 34 provinces in Indonesia of 18.25% is much higher than the national average but this is because several provinces have very high contributions such as Gorontalo, Lampung, Jambi and West Sumatra (West Sumatra). When viewed from the number that is above the national around 25 provinces and there are 9 provinces that are still below the national average

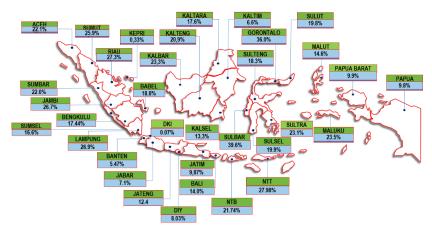


Fig. 3. Performance of the Agricultural Sector in 34 Provinces in Indonesia in 2022

3.2 Performance of the Agricultural Sector in 34 Provinces in Indonesia

From the previous data, it was explained that there are 25 provinces that are above the national average and there are 9 provinces that are still below the national average. When related to the agricultural budget in each province, it can be seen in figure 4. Where there is a linear relationship between the proportion of agricultural budget and the performance of the agricultural sector. Provinces with high performance scores also carry out high agricultural unemployment.

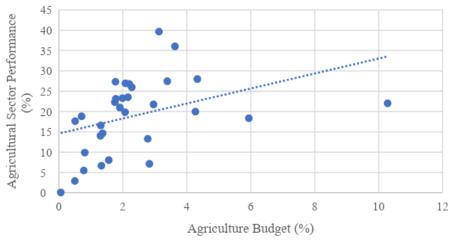


Fig. 4. Scatter Plot Aggriculture Budget and Agriculture Sector Performance in 34 Provinces in 2022

In addition to performing scatter analysis, this study also carried out correlation analysis can be seen even though it has a moderate correlation value of r>0.4, but the p-value shows less than 0.05% which is a significant relationship between the proportion of agricultural budget and the performance of the agricultural sector. From these results, it can be concluded that there is a need for the role of local government to improve the performance of the agricultural sector. The results show that fiscal decentralization Fiscal decentralization for the agricultural sector is a change in agricultural development management policy from centralistic to

decentralized, or handed over to local governments so that the change is expected to be able to utilize the potential of regional agricultural resources to be developed. That way, both regionally and nationally there will be an increase in the performance of the agricultural sector [16].

Table 1. Correlation Aggriculture budget and Agriculture Sector Performance

	Correlation	P-Value
Budget, Performance	0.45	0.012

Other results showed the same [17, 18, 19, 20, 21]. Not only will it increase the agricultural sector, increasing government spending in the agricultural sector will increase employment opportunities and overall economic growth [22]. In addition, the function of the budget as an instrument of economic policy is to realize economic stability and growth as well as equal distribution of public income in order to achieve state goals [23].

3.3 The Role of Local Government in the Development of the Agricultural Sector

The commitment of the Regional Government can be realized by helping to finance the Farmer. Farm financing is very important because [24] it mentions the influence of Private Investment and Labor on the Agriculture Subsector, Food Crop Subsector, Plantations and Livestock. [25] concluded that the impact of investment in the agricultural sub-sector on the formation of the largest output value was in the plantation sub-sector while the largest income formation was in the livestock sub-sector and its results

This financing arrangement has actually been regulated in Government Regulation No. 81 of 2021 concerning Farm Business Financing. Where in article 7 it is stated that the Government or Regional Government in accordance with its authority provides assistance in the implementation of Farm Business Financing to Farmers and / or Farmer-Owned Enterprises. It is further explained that what is meant by Farmer-Owned Enterprises can be in the form of cooperatives or other business entities in accordance with the provisions of laws and regulations.

The mechanism of financing where Farmers and Farmer-Owned Enterprises as referred to in Article 2 submit plans for Farm Business needs to the Government or Regional Government in accordance with their authority. Furthermore, in carrying out the protection and empowerment of farmers, the Government and Regional Governments are obliged to assign Government Financing Institutions or Regional Governments to serve Farmers and / or Farmer-Owned Enterprises to obtain Farm Business Financing.

From how many summaries of the articles in PP No. 81 of 2021, it has actually been regulated that in financing agricultural businesses (agricultural investment), local governments have an obligation to help farmers get farm business financing. So that the commitment from the local government becomes very important in financing agricultural businesses. The form of commitment of local governments in financing can be:

- 1. Assistance in Farm Business Financing to Farmers and/or Farmer-Owned Enterprises
- 2. Ask Regional Financial Institutions, in this case Regional Banks, to be able to provide easy access and interest relief to Farmers, which in this case can provide part of the APBD for interest subsidies for Regional Banks.

3. Make Recommendations so that Village Governments can prioritize Village Fund budgets for Agriculture

Speaking of agriculture, it does not escape from the Village, because *the Village is the Base of food production*. The village is a food production base as a supporter of the availability of national food stock. This is proven that based on Podes in 2018, 93 percent of villages work in the agricultural sector, only a few villages work in industry, services, and trade. Today food production is spread 80% in villages, 17% in suburbs, and 3% in cities [26]. So it is not wrong if the strategy of developing farmer financing in the regions must be on a village scale.

In addition to the village is the base in the production of pertnaina, in a normative perspective, the village as a legal community unit is authorized to regulate and manage government affairs, the interests of local communities based on community initiatives, rights of origin, and/or traditional rights (Chapter 1 paragraph (1) Law 6/2014). In addition, villages have budgets sourced from Village Funds (DD), Village Fund Allocation (ADD), Village Original Income (PADes), and funds from non-binding third parties [26].

Regarding village authority, it has been clearly stated in articles 18 to 23 of Law Number 6 on Villages (Law No 6 / 2014), and Government Regulation Number 43 of 2014 concerning the Implementation of Village Law (PP No 43 / 2014) articles 33 to article 38. Based on article 18 of the Village Law, the current village authority includes:

- a. Authority in the field of Village Government administration
- b. Implementation of Village Development
- c. Village community development
- d. Village community empowerment

The four village authorities are recognized by the state based on initiatives. Meanwhile, based on its nature, article 19 of the Village Law has determined the properties of village authority, namely:

- a. Authority is origin
- b. Village-scale local authority
- c. Authority assigned by supravillage government (Central, Province, Regency / City)
- d. Authority assigned by the supravillage government due to the provisions of laws and regulations.

Referring to the nature of village authority (origin and local village-scale), the village essentially has the authority and to plan programs, activities and carry out development in accordance with regional capacity and community needs and the entire process is carried out in a participatory manner by involving the community. Thus it has become clear and unequivocal today, that the village has the power and responsibility to regulate and take care of certain matters that are of interest to the village community.

Regarding agricultural financing, in the Regulation of the Minister of Villages, Development of Disadvantaged Regions, and Transmigration No. 1 of 2015 concerning Village Authority (Permendesa PDTT No. 1/2015), that village-scale local authority in the field of village facilities and infrastructure (Article 11) and local economic development (Article 12) has mainstreamed food security in village development.

Table 2. [26] Village-scale Local Finance Article 11 and Article 12

Village-scale local authority for village facilities and infrastructure Article 11			Village-scale local authority for local economic development	
1.	construction and maintenance of farm roads;	1.	construction and management of Village markets	
2.	construction and maintenance of Village		and Village kiosks;	
	reservoirs;	2.	construction and management of village-owned	
3.	village-scale clean water development and	3.	fish auction sites;	
	management;		development of village-based micro-enterprises;	
4.	construction and maintenance of tertiary	4.	utilization of village-based microfinance;	
_	irrigation; construction and maintenance and	5.	construction and management of floating net	
5.	management of channels for aquaculture; and	6.	cages and fish charts;	
6.	development of production facilities and	0.	construction and management of food granaries and determination of village food reserves;	
0.	infrastructure in the village.	7.	determination of superior commodities of	
	<u> </u>	, .	agriculture and fisheries in the village;	
		8.	regulation of the implementation of integrated	
			agricultural and fishery pest and disease control;	
		9.	determination of the type of organic fertilizer	
			and feed for agriculture and fisheries;	
			local seed development;	
			collective development of livestock;	
		12.	independent energy development and management;	
		13.	establishment and management of Village BUM;	
		14.	construction and management of boat moorings;	
		15.	pasture management;	
		16.	village tourism development outside the district/city tourism development master plan;	
		17.	management of fish seed halls;	
		18.	development of appropriate technology for processing agricultural and fishery products; and	

Currently, the village has the right to take care of its own problems, since the Village Law was established, the village is no longer an object but a subject. In the role of the village in helping investment or farming business, the village can play a role through Bumdes. Literally, before the existence of Bumdes, farmers already had their own organizations both in the form of farmer groups (poktan), farmer women's groups, farmer group associations (Gapoktan). This farmer group can move on its own without any assistance from the village. However, when talking about capital participation or investment made by villages, based on the Village Law, it can only be through Village-Owned Enterprises.

and culture.

 Development of agricultural production business systems that rely on local resources, institutions

In some cases, sometimes the formation of bumdes is considered to replace the position of Village Community Institutions (LKD), especially those engaged in business fields such as Gapoktan, Pokdarwis etc. However, the issuance of the Regulation of the Minister of Villages, PDT and Transmigration No 1/2015 expressly guides the types of village authorities for the development of the village's local

economy. Based on this technical regulation, there should be synergy between the policies of the Ministry of Villages, Local Government and village government in developing a road map for the local economy of villages through BUMDes.

Table 3. [26] Types of BUMDES Businesses

No.	Business	Business Type	Information
1	Serving	"Social business" that serves citizens, that is, can perform public services to the community. This Village BUM provides social benefits to residents, even though it does not get a large economic profit	Village drinking water business both clean water management and drinking water management (distilled), village electricity business, food granary, etc. (village drinking water; b. village electricity business; c. food granaries; and d. local resources and other appropriate technologies
2	Banking	"Money business", which meets the financial needs of villagers with interest lower than the interest money earned by villagers from village loan sharks or conventional banks.	Banking business types are: Village banks or village credit institutions or village microfinance institutions, revolving fund business units etc. (a. means of transportation; b. party utensils; c. meetinghouses; d. shop houses; e. land owned by BUM Village; and f. other rented goods.)
3	Renting	rental business to serve the needs of the local community and at the same time to earn village income. This has been going on for a long time in many villages, especially villages in Java.	Rental of tractors, party tools, conference halls, shop houses, land, and so on. (a. means of transportation; b. party utensils; c. meetinghouses; d. shop houses; e. land owned by BUM Village; and f. other rented goods.)
4	Brokering	Become an "intermediary institution" that connects agricultural commodities with markets or so that farmers have no trouble selling their products to the market. Or BUM Desa sells services to residents and community businesses.	Payment services for electricity, PAM, Telp, Motor Vehicle Tax Extension Services etc. Villages can also establish village markets to market products produced by the community. (electricity payment services; b. village market to market products produced by the community; and c. other services)

No.	Business	Business Type	Information
5	Trading	Running a business that produces and/or trades certain goods to meet the needs of the community or be marketed on a wider market scale.	Ice factories, liquid smoke factories, agricultural products, agricultural production facilities, etc. (ice factories; b. liquid smoke factories; c. agricultural products; d. agricultural production facilities; e. ex-mining wells; and f. other productive business activities)
6	Holding	"joint effort", or as the parent of business units in the village, where each unit that stands alone, is regulated and arranged synergistically by BUM Desa in order to grow joint business.	large-scale development of village boats to organize small fishermen so that their business becomes more expansive; b. Tourism Villages that organize a series of business types from community groups; and c. joint venture activities that consolidate other types of local businesses.

It is literally clear from the position that Bumdes does not need to be a substitute for Gapoktan or Poktan which has previously been running individually, but Bumdes can become a "Joint Venture" Holding with Gapoktan for better financing of Farmers. Or even Bumdes can be a complement where Gapoktan as a provider of agricultural inputs such as fertilizers, seeds, and pesticides while Bumdes is a provider of agricultural machinery rental. Based on this, some commitments from the local government to the village level can be seen in the following beginning:

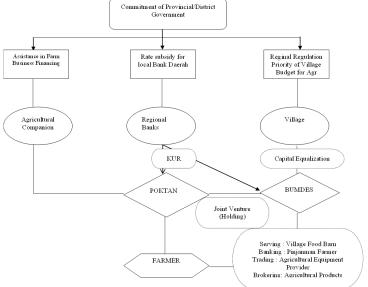


Fig. 5. Commitments From The Local Government To The Village Level

3 Result and Discussion

The role of local governments is very important in the development of the agricultural sector. However, in reality, the local government budget is still relatively low even though there is a significant relationship between the agricultural budget in the region and the performance of the agricultural sector. Therefore, it is necessary to increase the role of regions in improving the performance of the agricultural sector. One form of regional support is through agricultural business investment. There are three forms, the first is assistance in Farmer Business Financing to Farmers and/or Farmer-Owned Enterprises, the second asks Regional Financial Institutions, in this case Regional Banks, to be able to provide easy access and interest relief to Farmers, which in this case can provide part of the APBD for interest subsidies for Regional Banks. And the third is making recommendations so that Village Governments can prioritize village fund budgets for agriculture.

References

- [1] Isbah, Ufirah and Rita Yani Iyan. 2016. Analysis of the Role of the Agricultural Sector in the Economy and Employment Opportunities in Riau Province. Journal of Socioeconomic Development No.19, November 2016: 45 54.
- [2] Ministry of Finance. 2023. Food Security Budget, 2014-2022
- [3] Central Bureau of Statistics. 2023. GRDP by Business Field 2016-2022
- [4] Babatunde, Shakirat A. 2018. Government Spending on Infrastructure and Economic Growth in Nigeria. Economic Research-Ekonomska Istraživanja 31: 997–1014.
- [5] Nwer, Basher A., Khaled R. B. Mahmoud, Hamdi A. Zurqani, and Mukhtar M. Elaalem. 2021. Major Limiting Factors Affecting Agricultural Use and Production. In The Soils of Libya. Edited by Hamdi A. Zurqani. Cham: Springer, pp. 65–75.
- [6] Edeh, Chukwudi Emmanuel, Chidera G. Eze, and Sonia O. Ugwuanyi. 2020. Impact of Foreign Direct Investment on the Agricultural Sector in Nigeria (1981–2017). African Development Review 32: 551–64.
- [7] Marain, Y. Y., Domai, T., & Suryadi, S. (2014). Analysis of Regional Expenditure of the Agricultural Sector on the Gross Regional Domestic Product (GRDP) of the Agricultural Sector and the Performance of the Agricultural Sector in Malang City. Discourse Journal of Social and, 17(4), 223–233. https://wacana.ub.ac.id/index.php/wacana/article/view/424
- [8] Kurniawati, S. (2018). Granger Causality Between Local Government Expenditure and Economic Growth in Indonesia. GATR Journal of Business and Economics Review, 3(4), 80–86. https://doi.org/10.35609/jber.2018.3.4(1)
- [9] Singh, Oinam K., Laishram Priscilla, and Kamal Vatta. 2021. The Impact of Public Expenditure on Agricultural Output: Empirical Evidence from Punjab, India. Agricultural Economics Research Review 34: 157–64.
- [10] Kisira, Simon. 2014. [Thesis]. Evaluation of the Budgetary Allocation Policy on the Levels and Quality of Public Agriculture Budgets and Expenditures in Malawi and Rwanda. University of Jhohanesburg
- [11] Mukasa, Adamon N., Andinet D. Woldemichael, Adeleke O. Salami, and Anthony M. Simpasa. 2017. Africa's Agricultural Transformation: Identifying Priority Areas and Overcoming Challenges. Available online:
- $https://www.afdb.org/sites/default/files/documents/publications/aeb_volume_8_issue_3.pdf$
- [12] Pawlak, Karolina, and Małgorzata Kołodziejczak. 2020. The Role of Agriculture in Ensuring Food Security in Developing Countries: Considerations in the Context of the Problem of Sustainable Food Production. Sustainability 12: 5488.;

- [13] Bjornlund, Vibeke, Bjornlund Henning, and Andre F. Van Rooyen. 2020. Why Agricultural Production in Sub-Saharan Africa Remains Low Compared to the Rest of theWorld-A Historical Perspective. International Journal of Water Resources Development 3: 20–53.
- [14] Aguera, Pablo, Berglund Nils, Chimembiri Tapiwa, Comninos Alex, Gillwald Alison, and Govan-Vassen Naila. 2020. Paving the Way Towards Digitalizing Agriculture in South Africa. Available online:
- https://researchictafrica.net/wp/wpcontent/uploads/2020/09/Pavingthewaytowards digital is in gagriculture in South Africa White paper 272020105251.pdf
- [15] Statista. 2020. Distribution of gross domestic product gdp across economic sectors in japan
- [16] Sumedi and Djauhari 2014, Sumedi, and A. Djauhari. 2014. Policies Towards Transforming Agricultural Development: Policy Reform of Decentralization of the Agricultural Sector. Publisher IAARD Press, Agricultural Research and Development Agency. Jakarta
- [17] Ngobeni, Etian, and Chiedza L. Muchopa. 2022. The Impact of Government Expenditure in Agriculture and Other Selected Variables on the Value of Agricultural Production in South Africa (1983–2019): Vector Autoregressive Approach. Economies 10: 205. https://doi.org/10.3390/economies10090205
- [18] Chandio AA, Jiang Y, Rehman A, Jingdong L. 2016. Impact of Government Expenditure on Agricultural Sector and Economic Growth in Pakistan Impact of Government Expenditure on Agricultural Sector and Economic Growth in Pakistan. Int J Adv Biotevhnology Res. 7(3).
- [19] Budiyanto. 2014. The Impact of Local Government Expenditure on the Agricultural and Industrial Sectors on Provincial Economic Performance in Indonesia: SEZs. 18(3): 197-208
- [20] Putro. 2011. The Effect of Economic Growth, Local Original Revenue, and General Allocation Fund on Capital Expenditure Budget Allocation in Districts/Municipalities in Central Java Province [thesis]. Semarang (ID): Diponegoro University
- [21] Rindayati W, Hutagaol M P, Siregar H. 2007. Impact of Fiscal Decentralization on Regional Fiscal Performance and Food Security in West Java Province. Journal of Management and Agribusiness, 04(02): 103-117
- [22] Pangerang A, Fatmala W, Rahma F, Yunarsi, Husriah. 2022. The Effect of Government Expenditure in the Agricultural Sector and Investment on Labor, Economic Growth and Local Income of Luwu Regency. J Ekon and Baubau Polythetic Business. 1(1).
- [23] Kurnia F, Sarma M, Rachmina D. 2018. Strategy for Strengthening Planning and Budgeting in the Marine and Fisheries Subsector in Anambas Islands District. 10(2):33–47. http://weekly.cnbnews.com/news/article.html?no=124000
- [24] Fitria I. 2014. The Effect of Private Investment and Labor on the Agriculture Subsector, Food Crop Subsector, Plantations and Livestock. Bogor Agricultural University.
- [25] Marta J. Impact of Agricultural Investment on West Sumatra's Economy (Input-Output Analysis). Fak Ekon UNP., ready to publish. [26] Wibowo, Djoko Puguh, Mujianto, Marthella Rivera, Muhammad Fadzri. 2020. Strategies to Improve Food Security in the Middle of the COVID-19 Pandemic. Jakarta: PT Sulaksana Watnsa Indonesia