International Journal of Research and Review
Volume 11; Issue: 11; November 2024
Website: www.ijrrjournal.com
Research Paper *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Analysis of the Forward and Backward Linkages of Agriculture, Forestry and Fisheries Sectors in Central Java Province

Wahyu Arie Kurniawan[1], Sri Marwanti[2], Wiwit Rahayu[3]

[1,2,3]Agribusiness Study Program Faculty of Agriculture, Universitas Sebelas Maret Surakarta

Corresponding Author: Wahyu Arie Kurniawan

DOI: https://doi.org/10.52403/ijrr.20241129

ABSTRACT

This study aims to analyze the linkages forward and backward sectors of Agriculture, Forestry and fisheries in the economic development of Central Java province. This study uses data Input Output table of Central Java in 2016. The method of data analysis used in this study is Input-Output Analysis. The results showed that the subsector in the Agriculture, Forestry and fisheries sector that has the highest value of direct and indirect backward linkage is the livestock subsector. This means that the livestock subsector means that each increase in final demand in the livestock subsector by 1 unit will increase the output of other economic sectors that are used directly or indirectly as inputs to the livestock subsector by 1.5330 units. On the other hand, the value of direct and indirect future linkages in the agricultural, forestry and fisheries sectors is the highest, namely the food crop subsector with a value of 1.3903. This means that every increase in output in all sectors of the economy by 1 unit will increase the output of the food crop subsector by 1.3903 which is used directly as input for all sectors of the economy.

Keywords: *Backward Linkage, Forward Linkage, Economic Development, Agriculture, Forestry And Fisheries Sectors*

INTRODUCTION

The agricultural sector is one of the resources owned by Indonesia. The agricultural sector is included in the sector that plays an important role in national and regional economic development. The agricultural sector contributes several things such as the provision of food, fulfillment of products for secondary and tertiary industries, additional foreign exchange and increase rural income so as to improve the welfare of rural communities (Jhingan, 2010). Central Java is one of the regions with high contribution of Agriculture, Forestry and fisheries sectors

Economic development cannot be separated from economic transformation. The economic transformation referred to here is a pattern in which an economy starts from an agricultural-based economy, then switches to an industrial economy, and finally becomes a service economy. (Navarat, 2023). In Central Java this phenomenon is happening when viewed from the declining trend of agricultural sector contribution (Figure 1).. The success of this structural transformation requires a robust agricultural sector. Agriculture-focused development was in line with Mellor's suggestion. He argued that empirically countries that adopt development policies that focus on the agricultural sector tend to be more successful in encouraging economic growth (Priyarsono, 2011).

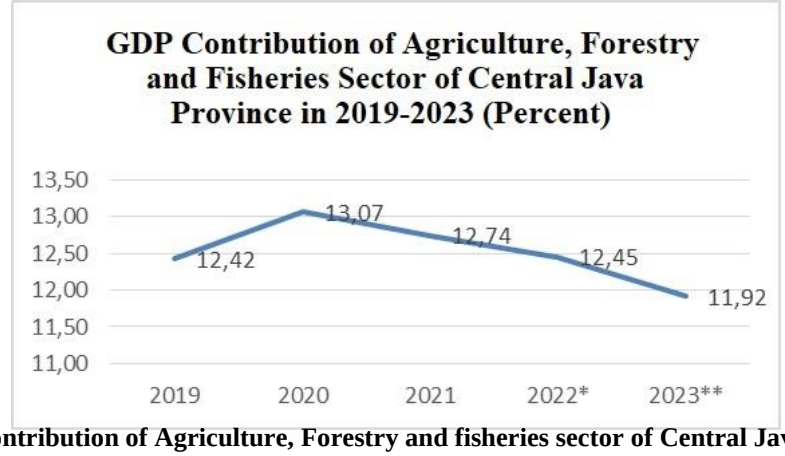

Figure 1. GDP contribution of Agriculture, Forestry and fisheries sector of Central Java Province in 2019-2023 (percent)

A solid sector is a sector that has stable economic growth. The Agriculture, Forestry and fisheries sectors in Central Java are among the resilient sectors. This was evidenced when the covid 19 pandemic in 2020 made economic growth in economic sectors contract, this does not apply to the Agriculture, Forestry and fisheries sectors which continue to provide positive economic growth (Figure 2).

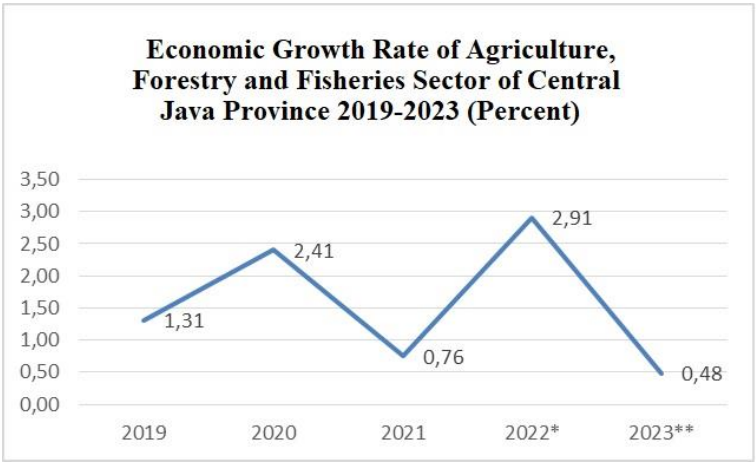

Figure 2. Economic growth rate of Agriculture, Forestry and fisheries sector of Central Java province 2019-2023 (percent)

In economic development, there is a relationship between economic sectors that are interrelated. In aggregate, the agricultural sector plays a role in the industrial development process because part of the industrial sector input comes from the output of the agricultural sector. The more the production of the industrial sector, the more the production output of the agricultural sector, as well as other sectors. In addition, the input of the agricultural sector also comes from the output of other sectors such as the industrial sector. Increasing the output of the agricultural sector will increase the input of the agricultural sector from other sectors. This is what is called the linkage between sectors in the economy. In the analysis of this linkage there are two kinds of linkage forward and backward. Future linkage analysis to see how the influence of Agriculture, Forestry and fisheries on the downstream sector. While backward linkage analysis to see the influence of Agriculture, Forestry and fisheries sector on the upstream sector.

The long-term development plan of Central Java province 2005-2025 has entered the final stage in 2025. In an effort to maintain

the sustainability of Central Java Regional Development Performance, and in line with the end of the rpjpd phase in 2005-2025, as mandated by Law Number 25 of 2004, Law Number 23 of 2014, Law Number 10 of 2016, the Central Java provincial government must prepare and determine the Central Java provincial RPJPD in 2025-2045 (Central Java RPJPD). therefore, in order to assist the Provincial Government of Central Java, it is necessary to analyze the role of the agricultural, forestry and fisheries sectors in the economy of Central Java through forward and backward linkage analysis. As well as helping to manage the Agriculture, Forestry and fisheries sector by identifying which Superior subsectors can increase the role of the Agriculture, Forestry and fisheries sector in the economy of Central Java province.

MATERIAL AND METHODS

The Data used is the table of input output in 2016 obtained from the Central Bureau of Statistics. Input-Output Analysis, to analyze the linkage of the agricultural sector with other sectors of the economy, includes forward linkage and backward linkage. Calculation in Input-Output Analysis is done using Microsoft Excel.

1.Backward Linkage

- **Direct backward linkage**

The increase in Sector I output due to the increase in final demand for sector I, will increase the use of direct sector I production inputs. Increased use of these inputs due to increased output. Therefore, the direct linkage to the back can be denoted in the form (Sahara, 2017):

$$B\,(d)_j = \sum_{i=1}^{n} \alpha_{ij}$$

Description:

$B\,(d)_j$ = Direct linkage to the back of sector j

α_{ij} = Input Coefficient Matrix

- **Total backward linkage**

An increase in the output of a sector can have both direct and indirect effects. The Total effect of one monetary unit of Final Demand On the entire production sector is shown by the inverse matrix of the input coefficient (I-a)-1. Therefore. Direct and indirect backward linkage can be denoted in the form (Sahara, 2017):

$$B\,(d+1)_j = \sum_{i=1} \alpha_{ij}$$

Description:

$B\,(d+1)_j$ = Direct linkage to the back of sector j

α_{ij} = Leontive Inverse Matrices Are Open

2.Forward Linkage

- **Direct forward linkage**

Increased production output of Sector I due to increased final demand of Sector i. The increased output will be distributed to other sectors of the economy. Therefore, the direct linkage to the future can be notated in the form (Sahara, 2017):

$$F\,(d)_i = \sum_{j=1}^{n} \alpha_{ij}$$

Description:

$F\,(d)_i$ = Direct linkage to the back of Sector i

α_{ij} = Input Coefficient Matrix

- **Total forward linkage**

Indicates the effect of a particular sector on the sectors that use the output for that sector directly or indirectly per unit of increase in total demand. Therefore, the direct and indirect linkages to the fore can be notated in the form of (Sahara, 2017):

$$F\,(d+1)_i = \sum_{j=1}^{n} \alpha_{ij}$$

Description:

$F(d+1)_i$ = Direct linkage to the back of Sector i

α_{ij} = Leontive Inverse Matrices Are Open

RESULTS AND DISCUSSION

Structure of Intermediate and Final Demand of The Economy

Intermediate transactions are transactions between two sectors, one as a producer while the other as a consumer. The producer sector or production sector is the sector that is located at the position of the row in the input-output table. Meanwhile, the sector on the side of the column is the consumer sector.

Table 1. Structure of demand between and final demand Central Java province (Million Rupiah)

Sector	Demand Between		Final Request		Total Demand	
	Total	Percent	Total	Percent	Total	Percent
Agriculture Food Crops	50.312.163	7,05	11.534.363	0,84	61.846.526	2,96
Agriculture crops horticulture annuals, Horticulture annuals and more	8.157.429	1,14	38.623.959	2,80	46.781.389	2,24
Plantation of annuals and annuals	11.042.024	1,55	6.725.324	0,49	17.767.349	0,85
Animal husbandry	18.191.566	2,55	24.244.063	1,76	42.435.629	2,03
Agricultural and hunting services	2.461.498	0,35	139.901	0,01	2.601.400	0,12
Forestry and logging	6.061.513	0,85	316.866	0,02	6.378.380	0,30
Fisheries	6.740.254	0,94	6.484.902	0,47	13.225.156	0,63
Mining and quarrying	24.771.627	3,47	9.260.458	0,67	34.032.086	1,63
Processing Industry	300.655.726	42,14	505.284.744	36,64	805.940.470	38,51
Electricity And Gas Procurement	27.772.287	3,89	22.720.893	1,65	50.493.180	2,41
Water supply, Waste Management, Waste, and recycling	491.807	0,07	1.829.789	0,13	2.321.597	0,11
Construction	17.065.191	2,39	258.882.126	18,77	275.947.318	13,19
Wholesale and Retail Trade; car and motorcycle repair	97.870.609	13,72	120.279.787	8,72	218.150.396	10,42
Transportation and warehousing	36.611.969	5,13	51.834.033	3,76	88.446.003	4,23
Provision of accommodation and food and drink	13.901.834	1,95	80.333.873	5,82	94.235.707	4,50
Information and communication	34.954.793	4,90	23.227.011	1,68	58.181.804	2,78
Financial and insurance services	26.003.249	3,64	15.199.278	1,10	41.202.528	1,97
Real Estate	5.127.037	0,72	36.202.440	2,62	41.329.478	1,97
Company Services	9.015.919	1,26	4.485.530	0,33	13.501.449	0,65
Government administration, Defense and compulsory Social Security	4.908.409	0,69	39.257.719	2,85	44.166.129	2,11
Education Services	1.863.505	0,26	62.812.091	4,55	64.675.597	3,09
Health services and social activities	3.449.954	0,48	25.992.486	1,88	29.442.440	1,41
Other Services	6.018.305	0,84	33.518.459	2,43	39.536.765	1,89
Total	713.448.669	100	1.379.190.108	100	2.092.638.777	100

Based on Table 1. It is known that the demand in the Agriculture, Forestry and fisheries sector is the largest in the food crop subsector with 50.3 trillion Rupiah or 7.03 %. This is because the products of this subsector need to be reprocessed like rice that must be processed to become rice that enters the industrial processing sector. While the largest final demand in the horticulture sub-sector is 38.6 trillion Rupiah or 2.80%. Horticultural products are more desirable in a fresh state so that the product can be directly consumed. But overall the intermediate demand in the Agriculture, Forestry and fishing sectors is greater than the final demand. This shows that the output of the agricultural, forestry and fishing sectors is used more as a raw material input for other sectors than for direct consumption.

Intermediate Input structure and Gross Value Added

The input structure in the input output table consists of intermediate inputs consisting of domestic inputs, foreign import inputs and inputs between provinces. While the gross value added is the return on production factors that are created due to production activities. The amount of added value in each sector is of course determined by the amount of output produced and the amount of costs incurred in the production process. Therefore, a sector that has a large output does not necessarily have a large added value, depending on the production costs incurred.

Table. 2. Input structure between and Gross Value Added of Central Java province (Million Rupiah)

Sector	Input Between		Gross Value Added		Total Input	
	Total	%	Total	%	Total	%
Food Crops	14.148.066	1,36	47.698.460	4,55	61.846.526	2,96
Horticultural Crops	8.582.602	0,82	38.198.786	3,64	46.781.389	2,24
Plantation	4.773.007	0,46	12.994.342	1,24	17.767.349	0,85
Animal husbandry	17.645.819	1,69	24.789.810	2,36	42.435.629	2,03
Agricultural and hunting services	631.321	0,06	1.970.079	0,19	2.601.400	0,12
Forestry and logging	1.113.381	0,11	5.264.999	0,50	6.378.380	0,30
Fisheries	2.027.527	0,19	11.197.629	1,07	13.225.156	0,63
Mining and quarrying	11.553.064	1,11	22.479.022	2,14	34.032.086	1,63
Processing Industry	469.225.525	44,96	336.714.946	32,10	805.940.470	38,51
Electricity And Gas Procurement	44.025.461	4,22	6.467.719	0,62	50.493.180	2,41
Water supply, Waste Management, Waste, and recycling	1.128.026	0,11	1.193.571	0,11	2.321.597	0,11
Construction	177.653.917	17,02	98.293.401	9,37	275.947.318	13,19
Wholesale and Retail Trade; car and motorcycle repair	77.724.830	7,45	140.425.566	13,39	218.150.396	10,42
Transportation and warehousing	48.714.717	4,67	39.731.286	3,79	88.446.003	4,23
Provision of accommodation and food and drink	54.592.522	5,23	39.643.185	3,78	94.235.707	4,50
Information and communication	23.560.838	2,26	34.620.966	3,30	58.181.804	2,78
Financial and insurance services	9.043.569	0,87	32.158.959	3,07	41.202.528	1,97
Real Estate	6.845.814	0,66	34.483.664	3,29	41.329.478	1,97
Company Services	6.055.144	0,58	7.446.304	0,71	13.501.449	0,65
Government administration, Defense and compulsory Social Security	14.081.916	1,35	30.084.213	2,87	44.166.129	2,11

Education Services	19.504.612	1,87	45.170.985	4,31	64.675.597	3,09
Health services and social activities	14.072.880	1,35	15.369.560	1,47	29.442.440	1,41
Other Services	17.019.434	1,63	22.517.331	2,15	39.536.765	1,89
Total	1.043.723.995	100	1.048.914.782	100	2.092.638.777	100

Based on Table 2, it is known that the largest input in the Agriculture, Forestry and fisheries sector is the livestock subsector which is 14.1 trillion Rupiah or 1.36% of all input in all sectors. This means that the livestock subsector has a large relationship with the upstream sector. While the largest gross value added in the Agriculture, Forestry and fisheries sector is the subsector of food crops. And in general, the entire sector of Agriculture, Forestry and Fisheries Gross added value is greater than the input of which in the structure of economic inputs in Central Java. This shows the large role of the Agriculture, Forestry and fisheries sectors in the formation of Gross Regional Domestic Product in Central Java province (Armelly et al, 2021)

Analysis of the relationship between the forward and backward sectors of Agriculture, Forestry and Fisheries of Central Java province

From a development perspective, one of the most important features of any industry is the extent to which it is able to generate demand for the products of other industries. This phenomenon is known as linkage. An industry can encourage investment both in the next stage of production with forward linkage and in the previous stage through backward linkage (Tesafa, 2014). This study uses a classification of 23 sectors to see the relationship of subsectors in the Agriculture, Forestry and fisheries sectors with other sectors. The following table linkage forward and backward linkage of Central Java province:

a. Backward Linkage

Backward linkage analysis aims to measure the ability of a sector to drive output growth of other sectors that contribute inputs to the sector. If the output of a sector increases, it will encourage an increase in the use of inputs from that sector, both inputs from the sector itself and other sectors and subsequently encourage an increase in the output of other sectors. And so on, there is a linkage between sectors through the mechanism of using production inputs. The increase in the use of such inputs is an increase in the total output because the total input is equal to the total output.

Table 3. Direct backward linkage and Total Central Java classification of 23 sectors

Business Field Sector	Direct	Total	Ranking
Agriculture Food Crops	0,1782	1,2414	18
Agriculture crops horticulture annuals, Horticulture annuals and more	0,1406	1,1970	22
Plantation of annuals and annuals	0,1997	1,2840	16
Animal husbandry	0,3504	1,5330	7
Agricultural and hunting services	0,1839	1,2756	17
Forestry and logging	0,1337	1,2044	20
Fisheries	0,1120	1,1627	23
Mining and quarrying	0,2687	1,4098	12
Processing Industry	0,3759	1,5445	5
Electricity And Gas Procurement	0,4980	1,8857	1
Water supply, Waste Management, Waste, and recycling	0,3457	1,5406	6
Construction	0,4296	1,6382	3
Wholesale and Retail Trade; car and motorcycle repair	0,2684	1,3999	13
Transportation and warehousing	0,3975	1,6014	4
Provision of accommodation and food and drink	0,4709	1,6920	2
Information and communication	0,2872	1,4157	11
Financial and insurance services	0,1458	1,2046	19

Real Estate	0,1336	1,1998	21
Company Services	0,3162	1,4597	10
Government administration, Defense and compulsory Social Security	0,2363	1,3722	14
Education Services	0,2119	1,3198	15
Health services and social activities	0,3499	1,5240	8
Other Services	0,3281	1,4941	9

Source: Data Analytics, 2024

Backward linkage sector analysis the classification of 23 sectors was carried out to see the backward linkage of subsectors in the Agriculture, Forestry and fisheries sectors with other sectors. Based on Table 1, it is known that the livestock subsector has a direct backward linkage value of 0.3504. This means that each increase in final demand in the livestock subsector by 1 unit will increase the output of other economic sectors that are used directly as inputs to the livestock subsector by 0.3504 units. Then the value of backward linkage total livestock subsector of Central Java province amounted to 1.5330. This means that every increase in final demand in the livestock subsector by 1 unit will increase the output of other economic sectors that are used directly or indirectly as inputs to the livestock subsector by 1.5330 units. The value of backward linkage of livestock subsector is in 7th place out of 23 sectors in the economic structure in Central Java. The high value of backward linkage in the livestock subsector due to the demand for inputs in the livestock subsector of the processing industry sector for animal feed. The use of inputs from the processing industry sector amounted to 12,072 billion Rupiah or 81% of the total input from other sectors. Other subsectors in the Agriculture, Forestry and fisheries sectors have low backward linkages with other sectors due to a greater proportion of inputs from Gross Value Added than inputs from other sectors. Gross value added is the return on factors of production created due to production activities. Gross value added is broken down according to wages and salaries, business surpluses, depreciation, and indirect taxes. In 2023, the number of agricultural business households in Central Java province was recorded at 4,218,349 households. (BPS Agricultural Census, 2023). It shows the magnitude of the components of wages and salaries in the agricultural, forestry and fishing sectors. Then the high commodity prices in the agricultural, forestry and fisheries sectors also caused a business surplus from this sector to be quite large.

b. Forward Linkage

Forward linkage analysis aims to measure the ability of a sector to encourage output growth of other sectors that use the sector's output as input through the output distribution mechanism. If the final demand of all sectors of the economy for a sector increases, that sector will increase its output. The additional output will be distributed to production sectors including the sector itself. Other sectors will increase their production so that they will distribute more output. Forward linking can show the role of a sector in meeting the final demand of all sectors of the economy (Nasoetion et al., 2000: 7). The higher the forward linkage of a sector, the more important the role of that sector as an input provider for other sectors.

Table 4. Direct and Total forward linkage of Central Java classification of 23 sectors

Business Field Sector	Direct	Total	Ranking
Agriculture Food Crops	0,1660	1,3903	8
Agriculture crops horticulture annuals, Horticulture annuals and more	0,0956	1,1213	15
Plantation of annuals and annuals	0,0385	1,0853	16
Animal husbandry	0,0933	1,1624	11
Agricultural and hunting services	0,0651	1,0765	19
Forestry and logging	0,0216	1,0424	21
Fisheries	0,0535	1,0780	18

Mining and quarrying	0,1023	1,2022	10
Processing Industry	2,3152	4,4505	1
Electricity And Gas Procurement	0,5275	1,9272	3
Water supply, Waste Management, Waste, and recycling	0,0200	1,0221	23
Construction	0,3461	1,4282	7
Wholesale and Retail Trade; car and motorcycle repair	0,7756	2,1654	2
Transportation and warehousing	0,3587	1,5155	5
Provision of accommodation and food and drink	0,1749	1,2238	9
Information and communication	0,4403	1,6545	4
Financial and insurance services	0,3028	1,4428	6
Real Estate	0,0563	1,0822	17
Company Services	0,1176	1,1621	12
Government administration, Defense and compulsory Social Security	0,0966	1,1249	14
Education Services	0,0279	1,0361	22
Health services and social activities	0,0396	1,0524	20
Other Services	0,1273	1,1542	13

Source: data analytics, 2024

Sector linkage analysis in the future classification of 23 sectors was carried out to see the backward linkage of subsectors in the Agriculture, Forestry and fisheries sectors with other sectors. Based on Table 4, it is known that the subsector of food crops has a direct future linkage value of 0.1660. This means that every increase in final demand of 1 unit will increase the output of the food crop subsector by 0.1660 which will be used as input for other sectors and the food crop subsector itself. Then the value of the future linkage of the total subsector of food crops of Central Java province amounted to 1.3903. This means that every increase in final demand of 1 unit will increase the output of the food crop subsector by 1.3903 which is used directly as input for all sectors of the economy and the food crop subsector itself. The value of the future linkage of food crops subsector is ranked 8th out of 23 sectors in the economic structure in Central Java. another subsector that is quite high in value is the livestock subsector with a value of 1.1624. Most of the output from the agricultural sector, forestry and fisheries in general have a high future linkage with the processing industry sector, especially the food and beverage industry. This shows that much of the output from the Agriculture, Forestry and fisheries sectors is reprocessed into processed food. This also shows the development of MSMEs in Central Java that process agricultural products.

The value of the backward linkage of the agricultural, forestry and fisheries sectors in Central Java province is generally greater than the value of the future linkage. This shows that the agricultural sector has more potential in encouraging the upstream sector by increasing final demand in the Agriculture, Forestry and fisheries sectors. This low linkage between the agricultural, forestry and fishery sectors shows that other economic sectors use little input from the agricultural, forestry and fishery sectors for their production activities. Other sectors prefer to use input from the import side whether it is from abroad or from other regions. This can be seen from the proportion of imported inputs greater than inputs from the Agriculture, Forestry and fisheries sectors

CONCLUSIONS

Based on input output linkage analysis, it can be seen that the leading subsector that can encourage economic growth in the Agriculture, Forestry and fisheries sectors is the livestock subsector. Increased economic development in Central Java province can be achieved by emphasizing investment in Superior sectors. the Agriculture, Forestry and fisheries sectors proved to be able to provide stimulus in production growth in the upstream sector through the livestock subsector. As well as increasing the production growth of the downstream sector

is greatest through the food crop subsector. Growth in the livestock and food crops subsector will be able to increase production growth in other sectors, absorb labor and increase community income in the Agriculture, Forestry and fisheries sectors

Declaration by Authors
Acknowledgement: None
Source of Funding: None
Conflict of Interest: No conflicts of interest declared.

REFERENCE

1. Armelly, Rusdi, Pasaribu. 2021. Analisis sektor unggulan perekonomian Indonesia: Model inputoutput. Jurnal Ilmu-ilmu sosial Vol 16 No 2. 119-134.
2. Arsyad, Lincolin. 2010. Ekonomi Pembangunan Edisi Ke 5. Yogyakarta: UPP STIM YKPN
3. BPS. 2021. Tabel Input output Provinsi Jawa Tengah 2016. Badan Pusat Statisti Provinsi Jawa Tengah.
4. Candra Kusuma, A et.al. 2024. Keterkaitan Dan Kontribusi Sektor Pertanian Di Indonesia: Analisis Input-Output. Jurnal Ekonomi Pertanian dan Agribisnis (JEPA) Volume 8, No. 2:643-657.
5. Fatmawati dan Iskandar. 2018. Analisis Perubahan Struktur Ekonomi (Economic Landscape) Jawa Tengah (Analisis Input - Output Periode Tahun 2000 -2013). Jurnal Dinamika Ekonomi Pembangunan Volume 1. No : 46-70.
6. Jhingan, M. L., (2010). Ekonomi Pembangunan dan Perencanaan. Jakarta: PT. Rajagrafindo Persada.
7. Perwitasari, Hani et.al. 2013. Analisis Input Output Sektor Pertanian di Indonesia. Jurnal Agro Ekonomi. volume 24/No.1.
8. Rafiqah, Darsono, Sutrisno. 2018. Daya Penyebaran dan Derajat Kepekaan Sektor Pertanian dalam Pembangunan Ekonomi di Provinsi Jawa Tengah. AGRARIS: Journal of Agribusiness and Rural Development Research. Vol. 4 No. 1 Januari -Juni 2018. ht t ps:/ / doi .or g/ 10.18196/ agr.4160
9. Rani, t *et.al*. 2023. *A cross-sectoral analysis of energy shortages in Pakistan:based on supply-driven input-output model.* Economic Research, VOL. 36, NO. 3, 2186910.
10. Tanjung, GS, Suryantini, A., dan Utami A.W., 2021. *The Priorities of Leading Sub-Sector in The Sector of Agriculture, Forestry, and Fisheries in Economic Development in Bangka Belitung Province. AGRARIS: Journal of Agribusiness and Rural Development Research.* Vol. 7 No. 2 July – December 2021, Pages: 160-175. DOI: https://doi.org/10.18196/agraris.v7i2.11615
11. Tarigan, R. (2012). Ekonomi Regional: Teori dan Aplikasi. Jakarta: Bumi Aksara
12. Tesafa, F. 2014. *Forward And Backward Linkage Analysis Of Manufacturing Industries In Amhara Region, Ethiopia.* National Monthly Refereed Journal of Research In Science & Technology. Volume III, Issue No. 2, February 2014
13. Todaro, M.P, dan Smith, S.C. 2011. 2003. Pembangunan Ekonomi di Dunia Ketiga. Edisi Kedelapan, Jilid 1. editor Wisnu C. Kritiaji. Jakarta: Penerbit Erlangga
14. Warlina. L., *et al. 2023. Regional Competitive Advantage Of Agriculture as The Leading Sector In Garut Regency, West Java Province Indonesia. Journal Of Eastern European And Central Asian Research*. Vol 10 No 1 2023.

How to cite this article: Wahyu Arie Kurniawan, Sri Marwanti, Wiwit Rahayu. Analysis of the forward and backward linkages of agriculture, forestry and fisheries sectors in central java province. *International Journal of Research and Review*. 2024; 11(11): 331-339. DOI: *https://doi.org/10.52403/ijrr.20241129*

******