Superior Commodities of Gorontalo Province: Finding Way for Development Policies

Rosman Ilato, Syarwani Canon, Haris Mahmud, Ismet Sulila

Universitas Negeri Gorontalo, Indonesia

ABSTRACT

This research is aimed at identifying and analyzing the superior commodities at GorontaloProvince and formulating its alternate development policies.Mapping of the potential superior commodities of the area was conducted after the identification based on the existing condition of superior commodities of Gorontalo Province. . This research also provides an opportunity for improving the commercial feasibility by which it develops the nation. This consequently serves as a pilot project in alleviating the poverty issue and improving the wellbeing based on the local wisdom of the area; it is expected that the integration cultural value can be adopted in other areas in Indonesia. It consisted of two steps, i.e., mapping the superior commodities through mapping of localization and specialization index and superior commodities of the area by using exponential comparison method. Research variable involves all Department of Cooperatives, Micro Enterprises, Industry and Commerce (henceforth called as Kumperindag) in all regencies and cities in the province.The results of exponential comparison method show that 13 superior commodities of Gorontalo Province are maize, coconut, palm, fishpond, cow, KUR chicken, cloves, sugar cane, rice,chili, coffee, palm sugar, and cocoa.It is recommended to establish the alternate policies development of the superior commodities.

Keywords: Superior Commodities; Development Policies

1   Introduction

Regional development is considered very strategic in the framework of implementing national development. Not only is regional development an integral part of national development, but because regional development is recognized as being successful in promoting equity, stability, growth and community welfare as the main actors of development. One of the identification of leading sectors can be done by using the basic economic method, namely the sector which is the backbone of the regional economy because it has a fairly high competitive advantage, while the non-base sector is a sector that lacks potential but functions as a support for the basic sector. Regional governments need an overview of the basic sector and potential sectors that contribute to regional development so that from the basis of this description, the potential of each sector in boosting the economy can be seen. Information about the potentials possessed by the regions is very important in supporting regional development programs by the government because sometimes there are still gaps in information regarding the economic potential that can be developed.

The success of national development is highly dependent on the success of regional development (Ayubi, 2014) which is directed at improving the welfare of the community (Kurniawan, 2016). The growth of the agricultural sector in a region is basically influenced by the competitive advantage of an area, specialization of the region and the agricultural potential of the region. The existence of agricultural potential in an area has no meaning for the agricultural growth of the area if there is no effort to exploit and develop agricultural potential optimally. Therefore, the utilization and development of all potential agricultural potentials must be a top priority to be explored and developed in carrying out regional agricultural development as a whole (Wicaksono, 2011). The agricultural sector has contributed to economic development in the regions. Regional economic development is closely related to industrialization, and the role of the agricultural sector is starting to be replaced by the industrial sector. Benchmarks for the success of regional economic development can be seen from economic growth and economic structure (Widianingsih, et al., 2015). Activities in an economy within the regional scope can be classified into two main activities, namely activities classified as basis and activities classified as non-basis. This basic activity is an activity that has the main objective of exporting goods or services to other territories, either within one country or abroad. This

basic activity is a major milestone in improving the regional economy and increasing regional economic growth, because it is a major driver in regional growth (Mardiana, et al., 2017). Future agricultural development is based on the potential and superior commodities of the local area. Each region has its own superior commodities, depending on the resources it has. Food crops are strategic and attractive commodities in relation to the issue of increasing production and guaranteeing their availability. The need for food continues to increase in line with the increase in population (Mulyono and Munibah, 2016).

Agriculture sector (e.g., crops, horticulture, plantation, farms, and fishery) dominates the gross regional domestic product of Gorontalo Province in compared to other eight economic sectors with the percentage 29.43%. On the other hand, industrial sector only plays a minor part placing it to the third lower sector with the percentage 4.82%. Universities should examine the related issue to further advance the contribution of the commodities on the rise of gross domestic product and the well-being of the society.

The results of the development of the sector of economy of Gorontalo Province comparing to five provinces in Sulawesi reveal that 1) the gross domestic product of the province is at the lowest rank out of six provinces with the percentage 3.30%; 2) the value of gross domestic product per capita at current price is Rp.8,612,114; it is significantly lower than the national average value of Rp.29.9 millions (gross domestic product of Gorontalo Province, 2019); 3) the percentage of the poverty in the province is 18.65%, making it at the highest percentage of such a case in the province (*Gorontalo dalam Angka*, 2019); and 4) the productivity rate of the labor is 0.513 (not productive category) placing it at the lowest rank among five provinces in Sulawesi. It is expected that this research is able to help the government to plan and implement the development program, specifically the economic sector. Moreover, private sectors can also benefit from this research to advance the national economy which is aimed at increasing the income and improving the wellbeing of people in Gorontalo Province. The characteristics or social intervention developed to educate the nation is from the integration of local wisdom and materials in increasing the income and improving the well-being of the society in Gorontalo Province. Some examples of the characteristics are the development of industries, which are able to cooperate with national industries, responsible for processing the superior commodities in every regencies and city. It is expected that this present research is able to drive the human resources of the nation by which it promotes a sense of respecting and valuing the products of national industries.

2   Literature Review

Regional economic growth is an increase in overall community income that occurs in the region, namely an increase in all added value that occurs. With regard to regional growth analysis, there are two very different methodological approaches: adapting the macroeconomic models used in aggregate growth theory (and special regional variants such as the export base theory) or interpreting the growth of a region according to the dynamics of industrial structure (Mursidah, et al., 2013). Regional economic development is a process of local government and society managing existing resources and forming a partnership pattern between local governments and the private sector to create new jobs and stimulate the development of economic activity (economic growth) in the region. The main problem in regional development lies in the emphasis on development policies that are based on the uniqueness of the region concerned by using the potential of human, institutional and physical resources locally (regionally). This orientation directs us to taking initiatives originating from the region in the development process to create new job opportunities and stimulate increased economic activity (Kurniawan, 2016).

Basically, economic development has four main dimensions, namely: (1) Growth, (2) Poverty reduction, (3) Economic change or transformation, and (4) Sustainable development from an agrarian society to an industrial society (Rasyid, 2016). Adisasmita (2005) explains that regional (regional) economic development is a function of the potential of natural resources, labor and human resources, capital investment, development facilities and infrastructure, transportation and communication, industrial composition, technology, economic situation, and trade between regions. the capacity to finance and finance regional development, entrepreneurship, regional institutions and the development environment at large. Regional development begins with an awareness of the problem of spatial imbalance in development. More specifically to inter-regional development, agrolomeration problems, and the decreasing attractiveness of rural areas (Rustiadi, et al., 2011). The key to regional development in achieving national development targets efficiently and effectively is planning, coordination and integration between sectors. Sectoral development in the regions is adjusted to the conditions and potential of each region. The aim of regional

development policies is to harmonize growth and reduce the gap in progress between regions, through harmonious and integrated development between sectors of regional development that is efficient and effective towards achieving regional independence (Gafur, et al., 2016).

The economic base theory states that the main determinant of economic growth in a region is directly related to the demand for goods and services from outside the region. An emerging regional development strategy based on this theory is an emphasis on the importance of assistance to businesses that have national and international markets (Mursidah et al., 2013). Basic commodities and non-basic commodities can be used as a reference to determine the agricultural production of a region. Base commodities are the results of community activities whose results are directed to outside areas, while non-basic commodities are the results of activities aimed at their own regions. The increase in income from demand for basic commodities from outside the region will trigger an increase in demand for the non-basis sector as well, which means that it will encourage an increase in investment for the non-basic sector (Arifien, et al., 2012). According to the basic economic theory, increasing the number of economic bassist economic activities in a region will increase the amount of income of the region concerned. Furthermore, it will increase demand for goods and services in the area and will encourage an increase in the volume of non-basis economic activities (multiplier effect). Conversely, if there is a decrease in the number of basic activities, it will result in reduced income flowing into the area concerned, so that there will be a decrease in demand for goods produced by non-basic activities (Endi, et al., 2015). The base sector can experience progress or decline. The causes of progress in the basic sector are: (1) Development of transportation and communication networks, (2) Development of regional revenue and revenue, (3) Development of technology, and (4) Development of economic and social infrastructure. Meanwhile, the causes of the decline in the basic sector are: (1) There is a change in demand outside the region; and (2) running out of resource reserves (Susilawati, et al., 2016). After knowing the basic sector in a region, it will be easier for policy makers to spur economic development in the region by increasing the role of the basic sector. Increasing the role of the base sector will increase or spur the development of other economic sectors, because the base sector will have a multiplier effect on other sectors. As a result, the non-base sector in the regions will also be lifted by increasing the role of the base sector (Mardiana, et al., 2017).

3   Research Methodology

This research employed quantitative method. Mapping of the potential superior commodities of the area was conducted after the identification based on the existing condition of superior commodities of Gorontalo Province. It consisted of two steps, i.e., mapping the superior commodities through mapping of localization and specialization index and superior commodities of the area by using exponential comparison method. Research variable involves all Department of Cooperatives, Micro Enterprises, Industry and Commerce (henceforth called as *Kumperindag*) in all regencies and cities in Gorontalo Province.

4   Results

Mapping of Potential Resources of Superior Commodities in Gorontalo Province

Mapping of the potential resources for superior commodities of the area was conducted after the identification based on the existing condition of superior commodities of Gorontalo Province. It consisted of two steps, i.e., mapping the superior commodities through mapping of localization and specialization index and superior commodities of the area by using exponential comparison method.

a.   Localization and Specialization Index Approach

Crops commodity in Gorontalo province consists of lowland rice, upland rice, maize, soybeans, green beans, peanuts, sweet potatoes,and cassava. Performance of each crop, i.e., the planting area and the harvested area, based on the data in 2019 serves to measure the superiority of the crops.. Localization and specialization analysis is intended to measure the distribution and specialization of the crops commodity. Planting area of crops in one year is among the indicators used in analyzing the superiority of a commodity. It shows the accumulation of the plantation by the farmer in one year.

1.1. Commodity Localization Index

The localization index of food crops shows the distribution of relative concentration of the commodities in Gorontalo Province. If the localization coefficient (α) > 1, the food crops commodity is focused only on one

particular area (which happens to be a district in this case). The commodities are spread in every area if the coefficient α < 1. The lower the coefficient, the wider the distribution of the commodities.

Table 1. Commodity Localization Index of Food Crops in Gorontalo Province in Each Regency and City Based on the Planting Area, 2019.

Regency/City	Localization Index of Planting Area						
	Lowland Rice	Upland	Maize	Soy Beans	Green Peas	Peanut	Cassava
Boalemo	0.329	0.000	0.073	0.692	0.378	0.36	0.178
Gorontalo	0.225	0.834	0.217	0.717	0.712	0.67	0.440
Pohuwato	0.435	0.000	0.064	0.604	0.371	0.29	0.197
Bone Bolango	0.237	0.000	0.412	0.877	0.772	0.91	0.582
Gorontalo Utara	0.247	0.177	0.212	0.003	0.012	0.01	0.003
Gorontalo City	0.086	0.000	0.910	0.010	0.000	0.00	0.000
Gorontalo	0.375	0.813	0.163	0.775	0.561	0.53	0.431

From: Analysis Results

Table 1 shows that the index of crops commodity in Gorontalo Province ranges from 0.163 to 0.813 where maize crop is at the lowest rank,and upland rice achieves the highest rate of the index. This indicates that maize crops can be found in every district of Gorontalo Province while upland rice is exclusive to certain parts only. Boalemo regency has the lowest coefficient value for maize commodity while Gorontalo City is the opposite. Such a condition reveals that maize commodity is common in Boalemo regency. On the contrary, this commodity can only be foundincertain districts at Gorontalo City.

1.2 Commodity Specialization Index

Other than examining the trade size, determining the specialization index of food crops commodity at Gorontalo Province is also essential. A commodity is said to be special for an area if the specialization coefficient value (β) > 1; if it is not, then the commodity is not exclusive to that area.

Table 2. Commodity Specialization Index of Food Crops in Gorontalo Province inEach Regency and City Based on the Planting Area, 2019.

Regency/City	Specialization Index of Planting Area							
	Lowland	Upland	Maize	Soy Beans	Green	Peanut	Cassava	Sweet Potatoes
Regency	0.193	0.017	0.738	0.001	0.001	0.001	0.001	0.017
Gorontalo	1.982	0.000	3.048	0.027	0.006	-0.071	0.027	0.046
Pohuwato	1.094	0.000	0.863	0.151	0.003	0.002	0.007	0.006
Bone Bolango	0.947	0.000	6.766	0.036	0.040	0.040	0.194	0.124
Gorontalo Utara	0.247	0.177	0.212	0.003	0.012	0.012	0.003	0.008
Gorontalo City	0.086	0.000	0.910	0.010	0.000	0.000	0.000	0.010
Gorontalo Province	10.614	0.493	8.276	0.236	0.067	0.070	0.275	0.259

From: Analysis Results

Table 2 provides the information of the specialization index of the province with green peas at the lowest rank with the value 0.067 while lowland rice has the highest index with the value 10.614. Lowland rice and maize are food crop commodities with a coefficient value above 1 leaving other commodities with the specialization coefficient below 1. According to the criteria, it can be said that these food crops are exclusive to Gorontalo Province. Lowland rice is also exclusive to Gorontalo Regency and Pohuwato Regency with the value 1.982

and 1.094 respectively. In addition, maize commodities are exclusive to regencies, such as Gorontalo Regency (3.084) and Bone Bolango Regency (6.766). The index value of this commodity, for Gorontalo City, almost reaches 1 with the value 0.910, meaning that maize crops are also a special commodity to this area.

b.   Exponential Comparison Method

Exponential comparison method is used to determine the order of the alternative decision priority with multiple criteria. It is also to help the decision-making process in using the well-defined model during the processes. In this present study, this method was employed to determine the superior commodity of Gorontalo Province. Processes of the method implementation are as follows: 1) Designing alternative decisions as the preliminary consideration that determines the decision of the selection of potential superior commodities in all regencies and city of Gorontalo Province. 2) Determining the criteria or the comparison of the decision criteria to be evaluated; in this case, there are 13 criteria established which have been used on the potential superior commodities. 3) Determining the importance of each decision criterion or consideration of criteria through in-depth interviews and questionnaire with expert judgment. 4) Assessing 13 alternatives of superior commodities in all regencies and city in Gorontalo Province; the assessment was due by considering all 13 criteria that have been designed. 5) Accumulating the overall scores of each commodity within the site areas. 6) Determining the order of decision priority based on the overall score of the commodity. Below is the formula used to calculate the score of each commodity in exponential comparison method.

$$\text{Total nilai (TN}_i) = \sum_{j=1}^{m} (RK_{ij})^{TKK\,j}$$

Description:

TNi   : Total alternative value -*i*
RKij   : Relative interest degree of criteria -*j* on the decision *i*
TKKj   : Degree of interest of decision criterion -*j*; TKKj>0 ; round
n   : Total of decision
m   : Total of decision criteria

Determining the degree of the interest of each criterion was conducted by interviewing some experts and brainstorming agreement. On the other hand, determining the alternative score of each criterion was due by scoring each alternative based on its criterion. The bigger the value of the alternative, the bigger the score of the alternative. The overall score of each decision alternative is significantly different due to the exponential function. Exponential comparison method is able to reduce potential biases during the analysis. The score representing the order of priority is increasing (exponential function) by which it affects the order of alternative priority significantly.

The indicators have been designed based on the standards that most experts used. These 13 indicators are namely Economic Value Added, Raw Availability and Continuity of Raw Materials, Marketing Aspects, Policy and Organizational Support of the Government, Human Resource Support, Local Prestige, Readiness and Willingness of the Society, Government Readiness and Willingness, Readiness and Willingness of Business Actors, Readiness and Participation of Academics, Capital Aspects, and Availability of Artificial Resources.The determination of the weighting criteria for the 13 indicators was conducted by interviewing and filling out the questionnaires by experts, and calculated by eckenrode method, so that the criteria of the 13 indicators were assessed as shown in Table 3.The higher the value of the indicators, the higher the rate of the interest. On the contrary, the lower the value, the lower the rate of interest of the indicators.Likert scale (with the rate of interest 1-9) was employed to accumulate the value.

Table 3. Assessment Criteria for Exponential Comparison Method

No.	Assessment Criteria/Indicator	Value
1	Economic Value Added	9
2	Social Value Added	8
3	Availability and Sustainability of Materials	8
4	Marketing	9
5	Government Policy andOrganizational Support	8
6	Human Resources Supports	7

7	Prestige Area	5
8	Society Preparedness and Willingness	6
9	Government Preparedness and Willingness	6
10	Preparedness and Willingness of Business Communities	7
11	Scholars Preparedness and Willingness	5
12	Capital Aspect	6
13	Artificial Resources Supply	5

From: Primary data (2020)

After obtaining the weighing of assessment criteria, assessing the alternatives of 13 superior commodities is started through identification. The value of the alternative of each commodity is the real value based on the real-time condition. The value is further converted by using Likert scale whose score ranging from 1-9. This is able to reduce potential biases during the analysis. The score representing the order of priority is increasing (exponential function) by which it affects the order of alternative priority significantly.

The results of the calculation by using exponential comparison method show the rank of the potential superior commodity worth developed in Gorontalo Province. The value of MPE is obtained from the calculation results are as follows: each alternative value of each commodity that has been obtained will be calculated with exponential function with weight on each indicator/criteria that have been set. Furthermore, the results of the exponential function for all indicators/criteria are summed for each commodity. The following Table 4 provides the information of the results of the calculation.

Table 4. Results of Calculation of Exponential Comparison Method of 13 Superior Commodities

No.	Superior Commodities	Exponential	Rank
1	Cow	395,532,236	5
2	Chili	185,785,709	1
3	Maize	629,123,745	1
4	Rice	213,907,080	9
5	Coconut	493,793,077	2
6	Cacao	43,416,334	1
7	Sugar Cane	221,452,372	8
8	Palm	475,911,021	3
9	Fisheries	416,459,162	4
10	KUR Chicken	392,511,630	6
11	Coffee	140,570,165	1
12	Sugar Palm	139,907,632	1
13	Clove	387,554,096	7

From: Primary data (2020)

5   Discussion

Maize crop serves as the main ingredients for national food industries with least improvement. These crops become the second staple after rice in Gorontalo Province. However, there is a decline in the production of maize in the last six years in the province and also the share on national production. In 2010, there is 679,167 tons of maize crop production with 3.706% share on national production. There is a drop in the number in 2015 to 643,512 tons with the share percentage 3.281%. On an average annual basis in the last six years, the growth rate of corn production in Gorontalo Province has fluctuated and decreased by -1.07%. Next commodity is Coconut a traditional crop of hereditary community in Gorontalo Province; it is the third largest commodity contributor to the island of Sulawesi.   In 2010, coconut crops contributed to 1.96% of the crops production in Gorontalo Province. This number is increased to 2.23% in 2015 with the average growth rate of 2.06% in the last six years.

Palm is considered as the alternative commodity for coconut. The production of this commodity has been significantly developed in Indonesia. In 2010, the production rate of palm was 23975.80 tons. Its production is increased in 2019 to 29344.50 tons with the average growth rate of 6.97% in the last six years. In Gorontalo Province, the cultivation of palm crops is found in Pohuwato Regency. It is estimated that this commodity results in good quality production since the growth of palm tree suits to the climate in Gorontalo Province. The data of Central Bureau of Statistics (or BPS) Boalemo in 2020 shows that the planting area of palm tree that has started its production measures 5420.61 ha.

In the last five years, fisheries in Gorontalo Province have fluctuated,and it tends to show a drop. In 2015 the number of aquaculture of 72,282 tons (share 1.16%) while in 2020, it is decreased to 47,404 (0.40% share). Furthermore, the average growth rate of commodities in 2015-2018 amounted to 20.49%. However, in 2019, this number decreased by 54.60% due to the dry season. The other commodity is like the beef cattle population in Indonesia fluctuates and increases. Such a condition also occurs in Gorontalo province in the last six years. In 2015, the number of cattle population amounted to 253411 (share 1.24%). Thisis further decreased to 195593 tails (share 1.24%) in 2021. The data shows that the number of population of beef cattle Gorontalo Province in the last six years is decreased. However, the share of Gorontalo Province to national beef cattle fluctuates (it has increased and decreased back to share as in 2015). This means that the national beef reduction is steeper than that in Gorontalo Province.

The population of laying hens in Indonesia has continued to increase in the last six years; this is also the same in Gorontalo Province. The number of population of layer chicken of Gorontalo province in 2015 was 202,971 (share 0.11%). In 2021, the number was increased to 373,655 (share 0.21%) with the average growth rate of 12.98%.

Clove is one of the crops exclusive to Indonesia. This crop has been cultivated in Gorontalo Province,yet it is not as much as those in other provinces in Indonesia. The number of clove production in 2015 amounted to 682.9 tons (share 1.028%). However, it is decreased in 2021 to 604 tons (0.498% share) with an average growth rate of -4.01% per year.

Sugarcane, which is the main raw material of the sugar industry, is an important commodity in Indonesia. The main production center of this commodity is found in East Java Province. Provinces in Sulawesi that also produce this commodity are Gorontalo and South Sulawesi. However, the production of this crop continuously falls in South Sulawesi. In Gorontalo province, sugarcane production to Indonesia reached 1.20% in 2015; and it is increased to 1.59% in 2021, with an average growth rate of 8.26% per year.

Rice is a staple food crop in Indonesia, includingGorontalo Province. As the population increases, the total area of harvested and the amount of rice production in Indonesia also continues to rise. The total production of rice crops in Gorontalo Province in 2015 was 253,563 tons with a share of national production of 0.381%. In 2020, the number was increased to 331.220 tons with 0.439% share, with annual average production growth rate of 5.49%.

Chiliesare included in the group of vegetable crops. Although the national chili production in Indonesia continues to increase, the production of this crop in Gorontalo Province, especially in 2020, has decreased drastically due to drought. The number of chili production in 2015 amounted to 2517 tons (share 1.08%). However, it is decreased in 2020 to 1429 tons (0.56% share) with an average growth rate of -17.20% per year. However in the recent five years, the percentage of coffee production in Gorontalo Province fluctuates; it tends to show a rise in its percentage. For instance, the percentage of the production in 2015 is 0.123%,and it is increased to 0.116% in 2021. The data show that the average percentage of coffee production in Gorontalo Province is 0.99% per year; this is especially in the last five years

Palm sugar is considered as the product of the local cultivation in the province. However, the production of this commodity fell in 2020 despite a rise in the planting area of this commodity in the previous years. The number of palm sugar production in 2015 amounted to 583.3 tons (share 1.028%). However, it is decreased in 2021 to 581.5 tons (0.498% share) with an average growth rate of -0.10% per year.

Cacao is a new commodity in Gorontalo Province. Although the percentage of the production of the commodity is considerably small, there has been a steady increase in the percentage of the production of this commodity. The percentage of the production of cacao, in 2015, is 0.44%. This further increase in 2016 to 0.55% with a good average growth rate of 2.06% per year.

6   Conclusion

This study concludes that determining the superior commodity of an area is conducted through some procedures. Focus Group Discussion (henceforth called FGD) is employed to determine the commodity champion; this process is done by identifying all commodities in an area. A comprehensive and *bottom-up* analysis is conducted to examine the reliability of the superior commodity.Furthermore, FGD is also due internally by using exponential comparison method.

The results of exponential comparison method show that 13 superior commodities of Gorontalo Province are 1) maize, 2) coconut, 3) palm, 4) fishpond, 5) cow, 6) KUR chicken, 7) cloves, 8) sugar cane, 9) rice, 10) chili, 11) coffee, 12) palm sugar, and 13) cocoa. Generally, determining the superior commodity of an area is done through various *bottom-up* considerations, assuming that every area has different potential commodities. The notion of determining the superior commodity of an area refers to aspects, i.e., production/productivity, the extent to which the commodities can be derived, business communities, technology, and support from government policies.

7   Recommendations

It is recommended to establish the alternative policies development of the superior commodities through processes as follows:
1. Determining the superior commodities through exponential comparison method.
2. Analyzing the chain value on the decision results of the superior commodities of the area.
3. Developing the master plan of the commodities of the area through value chain analysis.
4. Implementing the policies along with monitoring and evaluating the master plan of the development of superior commodities.

References

1. Adisasmita, H.R. 2005. Dasar-Dasar Ekonomi Wilayah. Makasar: Graha Ilmu.
2. Arifien, M., Fafurida, dan Vitradesia, N. 2012. Perencanaan Pembangunan Berbasis Pertanian Tanaman Pangan dalam Upaya Penaggulangan Masalah Kemiskinan. Jurnal Ekonomi Pembangunan, 13(2): 288-302.
3. Ayubi, A.A. 2014. Analisis Potensi Ekonomi Kabupaten Banyuwangi. Jurnal Ekonomi Pembangunan, 12(1): 1-15.
4. Albanjari. Hidayat dan Ilato. Rosman: 2012: Analisis Rantai Nilai Komoditas Jagung di Kabupaten Boalemo Provinsi Gorontalo: Jakarta: Bappenas.
5. Australian Centre for International Agricultural Research (ACIAR): 2012: Membuat Rantai Nilai Lebih Berpihak Pada Kaum Miskin: Canberra
6. Badan Pusat Statistik Provinsi Gorontalo. 2015. Gorontalo Dalam Angka. Gorontalo: Badan Pusat Statistik Provinsi Gorontalo
7. Badan Pusat Statistik Provinsi Gorontalo. 2015. Produk Domestik Regional Bruto Provinsi Gorontalo Menurut Lapangan Usaha 2011. Gorontalo: Badan Pusat Statistik Provinsi Gorontalo
8. Badan Pusat Statistik Kota Gorontalo. 2015. Kota Gorontalo Dalam Angka. Kota Gorontalo: Badan Pusat Statistik Kota Gorontalo
9. Badan Pusat Statistik Kabupaten Gorontalo. 2015. Kabupaten Gorontalo Dalam Angka. Kabupaten Gorontalo: Badan Pusat Statistik Kabupaten Gorontalo
10. Badan Pusat Statistik Kabupaten Boalemo. 2015. Kabupaten Boalemo Dalam Angka. Kabupaten Boalemo: Badan Pusat Statistik Kabupaten Boalemo

11. Badan Pusat Statistik Kabupaten Pohuwato. 2015. Kabupaten Pohuwato Dalam Angka. Kabupaten Pohuwato: Badan Pusat Statistik Kabupaten Pohuwato

12. Badan Pusat Statistik Kabupaten Gorontalo Utara. 2015. Kabupaten Gorontalo Utara Dalam Angka. Kabupaten Gorontalo Utara: Badan Pusat Statistik Gorontalo Utara

13. Badan Pusat Statistik Kabupaten Bone Bolango. 2015. Kabupaten Bone Bolango Dalam Angka. Kabupaten Bone Bolango: Badan Pusat Statistik Bone Bolango

14. Canon. Syarwani. 2012. Journal of Indonesian Economy & Business. Volume 27, Number 1, Januari 2012. Yogyakarta. Faculty of Economic and Business University Gadjah Mada.

15. Dinas Koperasi, UMKM, Perindustrian, dan Perdagangan Provinsi Gorontalo. 2016.

16. Data Umum Usaha Mikro, Kecil, dan Menengah Kabupaten/Kota se Provinsi Gorontalo.

17. Endi, R., Suparta, I.W. dan Husaini, M. 2015. Analisis Sektor Unggulan dan Pengembangan Wilayah di Kota Bandar Lampung 2000-2012. JEP, 4(1): 107-134.

18. Gafur, Safri, M. dan Hodijah, S. 2016. Analisis Sektor/Sub Sektor Unggulan di Kabupaten Bungo. Jurnal Perspektif Pembiayaan dan Pembangunan Daerah, 3(3): 2338- 4603.

19. Kurniawan, K. 2016. Analisis Sektor Ekonomi Unggulan Kabupaten Kerinci Provinsi Jambi. el-JIZYA Jurnal Ekonomi Islam (Islamic Economics Journal), 4(1): 1-26.

20. Mardiana, I.W., Budhi, M.K.S. dan Swara, I.W.Y. 2017. Analisis Pergeseran Struktur Ekonomi dan Sektor Unggulan di Kabupaten Tabanan Provinsi Bali.E-Jurnal EP Unud, 6(3): 414-444.

21. Mulyono, J. dan Munibah, K. 2016. Pendekatan Location Quotient dan Shift Share Analysis dalam Penentuan Komoditas Unggulan Tanaman Pangan di Kabupaten Bantul. Informatika Pertanian, 25(2): 221-230.

22. Mursidah, Hamzah, A. dan Sofyan. 2013. Analisis Pengembangan Kawasan Andalan di Kabupaten Aceh Besar. Jurnal Ilmu Ekonomi Pascasarjana Universitas Syiah Kuala, 1(1): 43- 55.

23. Rasyid, A. 2016. Analisis Potensi Sektor Potensi Pertanian di Kabupaten Kediri Tahun 2010-2014. Jurnal Ekonomi Pembangunan, 14(02): 100-111.

24. Rustiadi, E., Saefulhakim, S. dan Panuju, D.R. 2011. Perencanaan dan Pengembangan Wilayah. Jakarta: Crestpent Press dan Yayasan Obor Indonesia.

25. Susilawati, Sastrawati, I. dan Wunas, S. 2016. Penentuan Komoditas Unggulan Sektor Pertanian Tanaman Pangan di Kabupaten Bone, Sulawesi Selatan. Prosiding Temu Ilmiah IPLBI 2016. Hal. F23-F30.

26. Wicaksono, I.A. 2011. Analisis Location Quotient Sektor dan Subsektor Pertanian pada Kecamatan di Kabupaten Purworejo. MEDIAGRO, 7(2):11-18.

27. Widianingsih, W., Suryantini, A. dan Irham. 2015. Kontribusi Sektor Pertanian pada Pertumbuhan Ekonomi di Provinsi Jawa Barat. Agro Ekonomi, 26(2): 206-218