

Determination of Leading Commodities and Food Commodities Structure in Sigi Regency of Central Sulawesi Province

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Determination of Leading Commodities and Food Commodities Structure in Sigi Regency of Central Sulawesi Province

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Abstract. Agriculture, forestry, and fishery sectors were the most important sectors that can increase community income in Sigi Regency after the earthquake, liquefaction, and COVID-19 pandemic occurred. This fact can be seen from a dominant contribution given by these sectors towards the formation of Gross Regional Domestic Product (GRDP) in Sigi Regency on the basis of the current price that is 43,21% in 2018. Those GRDP acquisitions were not yet known from what commodity and which sub-district, therefore more detailed information is needed. This study aimed to analyze various leading food crop commodities and examine the growth structure of food crop commodities in Sigi Regency. The methods used were Location Quotient (LQ) and Klassen Typology (KT) approach with the data collection on food crop commodity production from 2015-2019. LQ method produces commodities that were classified as a relatively leading level, i.e. Sweet Potatoes, Cassava, Peanuts, and Green Beans. Meanwhile, KT analysis divided agricultural commodities into four categories: (i) Sweet Potatoes, Cassava, Peanuts and Green Beans were categorized as the developed commodities; (ii) No crop was categorized as the stagnant commodities; (iii) Corn and Soybeans were categorized as potential or developing commodities; and (iv) Rice was categorized as an underdeveloped commodity.

1. Introduction

Basically, the regional economic growth is influenced by the comparative advantage of a region, regional specialization, and the economic potential of the region. Therefore, the utilization and development of all economic potential become the top priority that must be explored and developed in implementing sustainable regional economic development.

Sigi Regency is one of the districts in Central Sulawesi Province which have very supportive and fertile agricultural land for the agriculture sector development, especially for the food crops. Agriculture, forestry, and livestock sub-sectors were the most important sub-sectors that can be increased to enhance the community income after the earthquake, liquefaction, and COVID-19 pandemic occurred. This can be seen from the large contribution from these sub-sectors to the formation of Gross Regional Domestic Product (GRDP) in Sigi Regency, which is 43.21% in 2018 [1]. These GRDP acquisitions were not yet known from what commodity and which sub-district also the same as the pattern and structure of agricultural commodity production growth. Therefore, more detailed information is needed regarding



food commodities that have the potential for competitive and comparative competitiveness as well as the typology of growth in the production of food crop commodities.

The purpose of this study was to determine the food crop commodities which were categorized as leading commodities and the food crop commodities that became an economic activator in Sigi Regency. It was expected to contribute ideas in determining local government policies and agencies related to the agricultural sector and the development of leading food crop commodities. The research method used was Location Quotient (LQ) and Klassen Typology (KT) approach with the data collection on food crop commodity production from 2015 to 2019.

2. Literature review

2.1. Analysis of Location Quotient (LQ)

LQ analysis is one of the approaches used to determine leading commodities in terms of production. This approach was often used to measure the economic basis. The measurement of economic activity in LQ technique was carried out relatively based on the gross or labor value-added. According to [2], LQ had been widely used by researchers in the field of economic development. More specifically [3] and [4] stated that economic development referred to the regional economic development. It was based on the fact that each region had a basic sector as the main activator of economic growth. The basic sector should have resilience between other sectors and have a high contribution to the formation of total regional economic output.

Research [5] shows that the category with highest contribution to the GRDP of West Nusa Tenggara was the agricultural sector category at 23.5%. The highest contribution to agricultural GRDP was obtained from Bima Regency at 46.8%. Based on the LQ analysis, the forestry and logging category was 2.41% and the fisheries category at 1.16% was the basic category and the agricultural category (agriculture, livestock, hunting, and agricultural services) was the non-basic category at 0.96%.

Research [6] using the LQ method on the potentials of leading sectors in Maluku Province shows that development policies in Maluku Province could not be separated from areas dominated by small islands with major potential in the fields of fisheries, agriculture, and mining. Research with the LQ method can also be aimed at analyzing the condition of the SME portfolio and formulating a comprehensive strategy to reach a healthy credit quality of the SME Business Lines [7]. The results of the study show that there were 12 sectors spread across 33 provinces, where the transportation, financial intermediary and fisheries sectors were the highest distribution sectors.

The LQ approach has the following advantages:

1. Considering the exports, both directly and indirectly (intermediate goods).
2. This method is inexpensive and can be applied to district data and determining trends.
3. The LQ analysis can be made attractive is performed for time-series data, meaning that the data is analyzed over a certain period of time. In this case, LQ development can be seen for a particular commodity in different time periods.

2.2. Analysis of Klassen Typology

Klassen Typology is a regional economic analysis tool that can be used to determine the classification of a region's economic sector. Klassen Typology analysis is used to identify the position of the economic sector by paying attention to the economic sector as a reference area. Klassen Typology analysis produces four sector classifications with different characteristics [8], they are:

1. The developed sector (Quadrant I). It is a quadrant in which the growth rate of a particular sector in Production (si) is greater compared to the growth rate of that sector in the Production of the reference area (s) and has a greater sector contribution value to Production (ASI) compared to the contribution of that sector in the Production of the reference area (sk). This classification is denoted by $si > s$ and $ski > sk$.
2. The stagnant sector (Quadrant II). It is a quadrant in which the growth rate of a particular sector in production (si) is smaller compared to the growth rate of that sector in the production of the reference

- area (s), but has a greater sector contribution value to production (ski) compared to the contribution of that sector in the Production of the reference area (sk). This classification is denoted by $s_i < s$ and $s_{ki} > s_k$.
3. Potential or developing sectors (Quadrant III). It is a quadrant in which the growth rate of a particular sector in production (s_i) is greater compared to the growth rate of that sector in the production of the reference area (s), but has a smaller sector contribution value to production (ski) compared to the contribution of that sector in the Production of the reference area (sk). This classification is denoted by $s_i > s$ and $s_{ki} < s_k$.
 4. Underdeveloped sector (Quadrant IV). It is a quadrant in which the growth rate of a particular sector in production (s_i) is smaller compared to the growth rate of that sector in the production of the reference area (s) and at the same time has a smaller sector contribution value to production (ski) compared to the contribution of that sector in the Production of the reference area (sk). This classification is denoted by $s_i < s$ and $s_{ki} < s_k$.

Research [9] related to quadrant analysis in East Nusa Tenggara Province shows that 10.4% of the region in NTT is included in the stagnant typology. The relationship between regional typology and leading sectors shows that Kupang is in quadrant I with 13 leading sectors, while other areas are still underdeveloped. Another study from [10] tried to apply the Klassen typology method to determine the role of the agricultural sector in increasing regional competitiveness by considering the economic sector of East Java Province as a reference area. The results showed that the role of the agricultural sector in strengthening regional competitiveness was able to increase Regional Original Income (ROI) and support and encourage the development of other sectors.

The Klassen typology method can also be used to map the inequality between regions. The result is the number of districts/cities classified as underdeveloped for each designated region [11]. Meanwhile, [12] applied the Klassen Typology method to study how much the linkages between the economic sectors were implemented in Semarang Regency. The results show that the sector that has a forward linkage is the agricultural sector and a backward linkage is the service sector and other sectors that can be a leading sector are the trade, hotel, and restaurant sector.

3. Material and methods

Determination of the research location was carried out on purpose. It was in Sigi Regency, located in Central Sulawesi Province, with the consideration that this area has great potential in agricultural sector both in its utilization and development sector. So that, it significantly contributes to the increasing regional economic growth after the earthquake and liquefaction.

3.1. Research Stage

- Calculating the ratio of the role of a sector in a sub-district to the role of a sector at the regional or district level.
- Arranging the growth of agricultural commodity production.

3.2. Research Methods

- Calculating the ratio of the role of a sector using the Location Quotient (LQ) method. LQ analysis refers to the formula [13]:

$$LQ = \frac{P_{ij} / P_j}{P_{ir} / P_r}$$

Note:

- P_{ij} = production value of agricultural commodity i in the sub-district area.
- P_j = total value of sub-district agricultural commodity production.
- P_{ir} = production value of agricultural commodity i at the regency area.
- P_r = total value of regency agricultural commodity production.

Measurement criteria of the LQ value were:

- If $LQ > 1$ means that it is categorized as the basis commodity or the leading commodity. The results were not only used to fulfill the needs in the region concerned but it also could be exported to the other region.
- If $LQ < 1$ means that the commodity is classified as non-basis and has no advantages. Region commodity production could not fulfill their needs, so it needs supplies or imports from the other region.
- If $LQ = 1$ means that the commodity is classified as non-basis and had no advantages. The commodity production was able to fulfill its own region needs and could not be exported.

After the LQ analysis was carried out, it continued by an analysis of the growth structure of agricultural commodity production using the Klassen Typology (KT) method. The use and interpretation of KT analysis tools can be seen in Figure 3.1.

Quadrant I Developed sector $si > s$ and $ski > sk$	Quadrant II Stagnant sector $si < s$ and $s > sk$
Quadrant III Developing sector $si > s$ and $ski < sk$	Quadrant IV Underdeveloped sector $si < s$ and $ski < sk$

Figure 3.1. Typology of Commodity Production Growth according to Klassen

Note:

- si : The production value of commodity i at the sub-district level.
- s : The total production value at the sub-district level.
- ski : The value of commodity production i at the regency level.
- sk : The total value of production at the regency level.

4. Result and Discussion

4.1. Data Collecting

This research uses secondary data in the form of GRDP of Sigi Regency on the basis of 2015 constant price according to the Business Field in 2015-2019. It was obtained from the Central Bureau of Statistics of Sigi Regency and Department of Food Crops Agriculture, Horticulture and Plantation of Sigi Regency. The data that has been collected was researched and analyzed using Location Quotient (LQ) and Klassen Typology (KT) analysis tools.

4.2. Data Processing

Overall, in the last five years (2015-2019) there has not been a significant shift in the structure of food crop commodities, where the position of each commodity remains even though there was a change in the contribution size. The economic structure of Sigi Regency in 2015-2019 as presented in Table 4.1 shows that food crops, especially the rice commodity, were still the sector that provides the largest contribution to the formation of the production value of Sigi Regency.

Table 1 Production of Food Crop Commodities in Sigi Regency (Kw)

No.	Commodity	2015	2016	2017	2018	2019	Total Production	Standart Price in 2015
1	Rice	68.354	130.593	194.200	827.792	600.845	1.821.784	563.100
2	Corn	13.654	26.199	40.292	105.298	150.562	336.005	338.770
3	Peanut	957	1.893	2.574	5.848	6.188	17.460	1.828.535
4	Green Beans	632	1.013	1.569	1.918	1.743	6.875	1.488.184
5	Soybean	46	26	36	51	-	159	845.375
6	Sweet Potato	1.940	2.575	4.057	18.883	11.593	39.048	432.191
7	Cassava	6.245	8.085	12.329	38.560	26.331	91.550	222.649

Source: [1]

The distribution of food crop commodity production in each sub-district of Sigi Regency can be seen in Table 2.

Table 2 Production of Food Crop Commodities 2015-2019 in Each Sub-District (Kw)

No.	Sub-district	Rice	Corn	Peanut	Green Bean	Soybean	Sweet Potato	Cassava
1	Pipikoro	83.606	49.387	-	-	-	3.180	5.304
2	Kulawi Selatan	190.340	18.479	129	-	-	750	1.728
3	Kulawi	86.021	15.770	309	31	-	380	2.734
4	Lindu	97.442	43.240	3.607	8	73	1.327	1.876
5	Nokilalaki	96.383	17.254	519	-	-	2.941	5.254
6	Palolo	749.904	101.621	643	-	-	3.719	7.835
7	Gumbasa	68.622	3.532	672	1.753	-	192	188
8	Dolo Barat	42.119	13.001	2.479	619	86	5.946	10.064
9	Dolo Selatan	48.674	8.748	1.822	487	-	2.052	9.772
10	Tanambulawa	91.696	6.427	333	-	-	748	1.242
11	Dolo	56.812	13.457	1.319	3.372	-	1.420	13.129
12	Sigi Biromaru	187.991	13.006	2.122	310	-	-	2.883
13	Marawola	12.254	1.776	219	-	-	1.605	2.856
14	Marawola Barat	-	22.269	1.259	287	-	6.642	9.716
15	Kinovaro	9.920	8.038	2.028	8	-	8.146	16.969

Source: [1]

4.3. Data Analysis

4.3.1. Leading and Non-Leading Commodities Based on the LQ Analysis

The LQ analysis compares the significant role of a sector/industry in a region to the role of a sector/industry on a wider scale. A large amount of commodity production in a smaller area (sub-district or regency) was not the main factor that make it a leading commodity. This is possible if the production amount is compared to the production level in a wider area and resulting the LQ value is less than 1. The LQ analysis can be known to be leading or not if the LQ coefficient is > 1 . It means that the commodity becomes the basis or is a leading commodity at the sub-district level, where the results were not only used to fulfill the needs in the region concerned but it also could be exported to the other region. Otherwise, if $LQ < 1$, this commodity was classified as non-basis or non-leading at the sub-district level or the commodity production could not fulfill its own needs so it needs supplies from other the district.

The LQ values for 7 commodities grown in all sub-districts of Sigi Regency were presented in Table 3.

Table 3 Results of the LQ Calculation for Food Crop Commodities in Sigi Regency

No.	Sub-district	Rice	Corn	Peanut	Green Bean	Soybean	Sweet potato	Cassava
1	Pipikoro	0,84	2,70	0,00	0,00	0,00	1,50	1,06
2	Kulawi Selatan	1,11	0,6	0,08	0,00	0,00	0,20	0,20
3	Kulawi	1,04	1,04	0,39	0,10	0,00	0,22	0,66
4	Lindu	0,84	2,03	3,26	0,02	5,52	0,54	0,32
5	Nokilalaki	1,02	0,99	0,57	0,00	0,00	1,45	1,10
6	Palolo	1,09	0,80	0,10	0,00	0,00	0,25	0,23
7	Gumbasa	1,05	0,29	1,07	7,10	0,00	0,14	0,06
8	Dolo Selatan	0,73	1,23	4,50	2,85	13,05	4,83	3,49
9	Dolo Barat	0,87	0,85	3,39	2,30	0,00	1,71	3,47
10	Tanambulawa	1,12	0,42	0,42	0,00	0,00	0,42	0,30
11	Dolo	0,80	1,03	1,94	12,59	0,00	0,93	3,68
12	Sigi Biromaru	1,09	0,41	1,29	0,48	0,00	0,00	0,33
13	Marawola	0,89	0,70	1,66	0,00	0,00	5,43	4,12
14	Marawola Barat	0,00	5,28	5,74	3,33	0,00	13,55	8,45
15	Kinovaro	0,34	1,51	7,33	0,07	0,00	13,16	11,69

Source: Secondary Data, 2020 (Processed)

Note: The numbers in bold indicate leading commodities.

Based on the calculation of the LQ value in Table 4.3, it can be argued that these commodities were classified as leading level with the LQ coefficient > 1 . There were Sweet Potatoes (LQ = 13.55), Soybeans (LQ = 13.05), Green Beans (LQ = 12.59).) and Cassava (LQ = 11.69). Although it was categorized as a leading commodity, these commodities were not constantly well developed or prioritized in their development. According to the food crop statistics in Sigi Regency, these commodities were generally the ones that grow and produce well in Sigi Regency. During the harvest season, the shipment of this commodity to other regions was very large and even shipped between islands.

According to LQ analysis, non-leading food crop commodities were found in all sub-districts of Sigi Regency. This illustrates that some farmers did not understand how to use leading seeds so that the quality of their production was not good enough and even could not be consumed (rejected). In accordance to [14] and [15], product quality needs to be improved by implementing a quality management system in the production process. Specifically the suboptimal use of leading seeds, the expensive price, and also the minimum knowledge of farmers about the use of leading seeds.

4.3.2. Analysis of Commodity Development based on Klassen Typology (KT) Analysis

After knowing the leading commodities in Sigi Regency (based on the LQ value), the growth structure of the food crop commodities was studied using KT analysis which can describe the growth pattern and structure in the production of food crops agricultural commodities. It represents that the production value is the basic thing in determining KT.

Economic growth from 2015-2019 for various commodities in Sigi Regency available in Table 4. It can be seen that the economic growth of food crop commodities in 2015-2019 is inversely proportional to the previous explanation. In fact, sweet potato commodity crops were the sector that provides the largest contribution to the economic growth in Sigi Regency as much as 2.95%. This illustrates that sweet potato commodity was a commodity which frequently give a big and increases contribution to the growth of regency production value in every year and in each sub-district. The food crop commodity

that gave the smallest contribution to the regency's economic growth was rice by 0.86%. It shows that although this commodity provided the greatest production value at the regency level in 2015-2019 analysis period, rice commodities did not frequently give a contribution as well as the sweet potato commodity. Even if it gave a contribution, the increase in its contribution was not as high as the sweet potato commodity. KT analysis could describe the pattern and structure of the production growth of agricultural food crop commodity, it represents that the production value was the basic thing in determining KT.

Table 4 Growth of Food Crop Commodities in Sigi Regency

No	Commodity	Production Value (Rp)	Economic growth (%)
1	Rice	102.584.657.040	0,86
2	Corn	11.382.841.385	1,32
3	Peanut	3.192.613.380	2,12
4	Green Bean	1.023.123.750	1,92
5	Soybean	17.668.233	1,63
6	Sweet potato	1.687.615.512	2,95
7	Cassava	2.038.269.200	2,61

Source: Secondary Data, 2020 (Processed)

The approach that was frequently used these days were the amount of production and production value (Rp) of each commodity at the level of analysis area and the reference area where the total production and production value (Rp) were obtained from the last five years data and the official sources. Next, visualize the position using SPSS by entering all the attributes of the specific quadrant, in the view variable were filled by the commodity, production value (Rupiah), and economic growth (%) for each commodity. The name of commodity, production value (Rupiah), and economic growth (%) were further written in the data view and the analysis results will reflect the 4 quadrants needed (Figure 4.1).

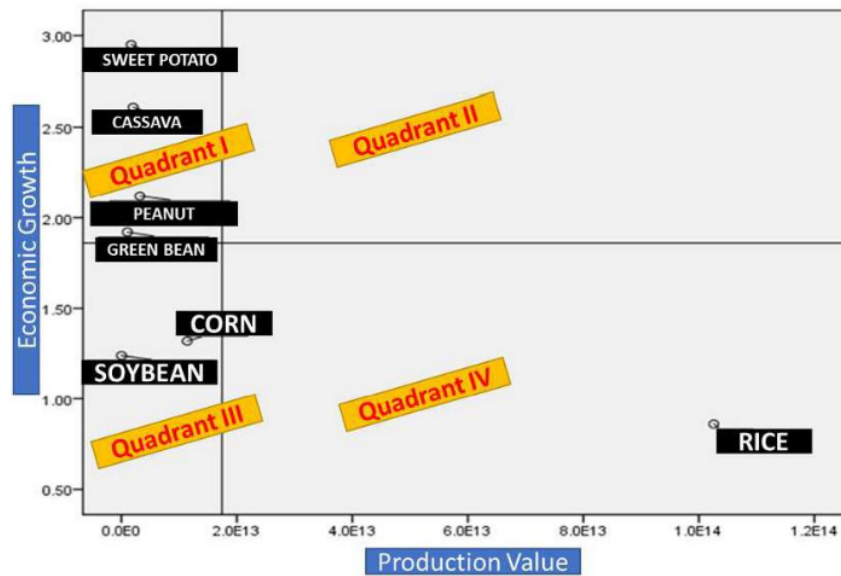


Figure 4.1. Classification of Food Crop Commodities in Sigi Regency according to *Klassen*

Typology in 2015-2019.

In quadrant I it can be seen that the four commodities have a higher economic growth value compared to others. The highest value was the sweet potato (2.95) which was not significantly different from the commodity of Cassava (2.61), Peanuts (2.12), and Green Beans (1.92). Although currently the contribution of these commodities still significantly smaller than other commodities, their growth was undergone a positive trend and tends to increase every year. It was also inseparable from the geographical position of Sigi Regency which was close to Palu City as a center of demand that requires supplies for community needs including sweet potato, cassava, peanuts, and green beans commodities. In addition, there were several tourist areas in Sigi Regency, causing the demand for this commodity to become potential.

In quadrant III, it appears that the two commodities had an economic growth value categorized in the developing sector, there were soybean (1.63) and corn (1.32). The rapid development of infrastructure and construction in Palu City was directly proportional to the increase in commodity production in quadrant III, especially corn and soybeans in Sigi Regency. Although they were categorized as the developing sector economically, the development of corn and soybeans as the leading commodities could not be offhand implemented because this sector was vulnerable and had a major impact on regencies directly adjacent to Palu City. Therefore, circumspection and further analysis were needed if you want to develop this commodity.

As for quadrant IV, it shows that the land for rice commodities had decreased, likewise the built-up rice which could trigger a wider city expansion. This is in line with research [16], that there are important influencing factors that contribute to the land conversions mostly related to the development such as increasing numbers of new settlements and regional economic development. This means that there were policies that had not been in favor of rice farmers while the number of workers in this sector was quite high. This causes the rice commodity categorized as a relatively underdeveloped commodity. Rice commodity had a relatively underdeveloped economic growth value where the rice commodity only had a small economic growth value. Even though the rice commodity had a positive trend of production value compared to other commodities, during the observation of economic growth in the last 5 years (2015-2019), rice commodity was only able to grow as much as 0.86%.

5. Conclusion

Based on Location Quotient Analysis, the commodities of sweet potato, cassava, peanuts and green beans were classified as a leading commodity in Sigi Regency.

Based on Klassen Typology analysis, the growth structure of agricultural commodities in Sigi Regency was divided into four quadrants, i.e.:

- Quadrant I (developed commodity) consists of sweet potatoes, cassava, peanuts, and green beans.
- Quadrant II (stagnant commodity) in Sigi Regency, there were no commodities included in this category.
- Quadrant III (developing commodity) consists of corn and soybeans.
- Quadrant IV (underdeveloped commodity) was a rice commodity.

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Reference

- [1] BPS-Statistics of Sigi Regency 2019 *Sigi Regency in Figures 2019* (BPS-Statistics of Sigi Regency)
- [2] Miller M M, Gibson L J and Wright N G 1991 Location Quotient: A Basic Tool for Economic Development Analysis *Econ. Dev. Rev.* **9** 65
- [3] Lubis N P S, Nugrahadi E W and Yusuf M 2020 Analysis of Superior Commodities in Agricultural Sector in Some Districts of North Sumatera Province *Bp. Int. Res. Crit. Inst. BIRCI-J. Humanit. Soc. Sci.* **3** 1054-66
- [4] Alhowaish A K, Alsharikh M A, Alasmal M A and Alghamdi Z A 2015 Location Quotient Technique and Economy Analysis of Regions: Tabuk Province of Saudi Arabia as a Case Study *Int. J. Sci. Res.* **4** 1756-61
- [5] Muslim M H H, Jamhari J and Darwanto D H 2017 Agriculture Category Advantages and Economic Structures in The Region of West Nusa Tenggara Province *Agro Ekon.* **28** 64
- [6] Kharisma B and Hadiyanto F 2019 Analysis of Potential Sectors and Policy Priorities of Regional Economic Development in Maluku Province *ETIKONOMI* **18** 29-46
- [7] Lumbantoruan D M, Sartono B and Djohar S 2015 Leading Sector Development and it's Implications on the Lending Portfolio and Non-Performing Loan of Small Medium Enterprises *Indones. J. Bus. Entrep. IJBE* **1** 96-96
- [8] Munandar Tb A and Wardoyo R 2015 Fuzzy-Klassen Model for Development Disparities Analysis based on Gross Regional Domestic Product Sector of a Region *Int. J. Comput. Appl.* **123** 17-22
- [9] Tallo A, Arianti S and Abdillah F 2018 Typology Analysis and Leading Sector of East Nusa Tenggara Province in 2017 *ResearchGate* **1114** 1-9
- [10] Katti S, Pratiwi D and Setiahadi R 2019 Klassen Typology Approach for Analysis of the Role of Competitiveness Agricultural Sector *IOP Conf. Ser. Earth Environ. Sci.* **347** 012106
- [11] Yunitasari D and Firmansayah J Z 2019 Mapping Of Regional Inequality In East Java Province *Int. J. Sci. Technol. Res.* **8** 20-7
- [12] Fafurida 2012 Analysis of inter sectoral linkages in Semarang regency *Econ. J. Emerg. Mark.* **4** 15-24
- [13] Bendavid-Val A 1991 *Regional and Local Economic Analysis for Practitioners* (Praeger)
- [14] Iskandar R, Dhamayanthi W and Pongoh I A A 2018 Quality Improvement of Vannamei Shrimp Production Process Using ISO 9001:2015 *IOP Conf. Ser. Earth Environ. Sci.* **207** 1-11
- [15] Iskandar R, Rizal R and Halimah N 2020 Quality Management System Implementation of ISO 9000:2015 on Robusta Coffee Processing in Jember Regency *IOP Conf. Ser. Earth Environ. Sci.* **411** 1-9
- [16] Nuryartono N, Tongato A, Yusdiyanto S, Pasaribu S H and Anggraenie T 2017 Land Conversion and Economic Development in Jawa Barat Province: *Trade off or Synergy?* *IOP Conf. Ser. Earth Environ. Sci.* **54** 012017

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