

Agriculture sector workers and rice production in Riau Province in 2010–2018

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Abstract. Absorption of labor in the agricultural sector in Riau Province in 2019 was around 31.9 %, down from the previous year which reached 55.3 %. The agricultural sector has a high contribution to GDP (in economic terms) in Riau Province. The results of rice production from agricultural activities can affect vulnerability to food security in a province. The research objective is to examine the employment of agricultural sector workers and rice production in Riau Province in 2010-2018. The data used are institutional data. The method used in this research is descriptive with quantitative data support. Generally, in Riau Province, regencies classified as high in human resources (labor) sector A are Indragiri Hilir Regency and Rokan Hilir Regency which produce large amounts of rice production. Regencies that are classified as high in the number of workers are Kampar and Rokan Hulu, but rice production is still relatively low, due to not optimal productivity.

Keywords: Agriculture, labor, production, spatial, distribution

1. Introduction

The agricultural sector has a role in national development. The role of the agricultural sector in development in Indonesia such as opening up job opportunities, increasing the country's foreign exchange, meeting food needs, as raw material for the industrial sector, as well as its sustainable nature in managing land resources. When the economic crisis occurred in 1997-1998 the agribusiness sector became a supporter of the Indonesian economy. The Gross Domestic Product (GDP) of the agriculture sector from 2010 to 2017 tends to increase [1]. Job opportunities in the agricultural sector are quite large, but labor in this sector decreased by 1.41 % [2]. The causes of labor shrinkage are generally productive age workers who are more likely to choose other sectors than the agricultural sector, this resulted in workers who work in agriculture are generally not young anymore or old age. As for the other sectors that are attracting young workers are the industrial sector, the service sector, the mining sector, the housing sector, and electricity.

Absorption of labor in the agricultural sector in Riau Province in 2019 around 31.9 % decreased compared to the previous year which reached 55.3 % [3]. The agricultural sector has a high contribution to GDP (in economic terms) in Riau Province, the contribution is generally in the leading forestry and plantation subsectors. In the economic field, Riau Province is the information center of the Master Plan for the Acceleration and Expansion of Indonesia's Economic Development (MP3EI) in the Sumatra region [4]. This will encourage increased human resources in Riau Province.

Decrease in rice yields from agricultural activities can affect vulnerability to food security, this occurs in Riau Province. The selection of Riau Province in terms of rice production in relation to food security, is due to the fact that there are still many districts / cities in Riau that fall into the 3rd priority food security category and also the province with the 3rd largest category on Sumatra Island. Rice production activities are directly related to humans or workers, from the seed process to the harvest process.

2. Materials and methods



Fig. 1. Administrative limits of Riau Province

The study was conducted using secondary data from agencies (institutional data) that were analyzed descriptively quantitative. The data used are data from

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2010 to 2018 with the aim to see the changing trends in the last 9 years. The data sources are from the Central Statistics Agency (BPS), namely the State of Riau Province Work Force in 2010-2018 and the Results of the Food Crop Survey in 2010-2018. The provinces studied were Riau Province with a total of 12 districts / cities. The following is an administrative map or research location boundary:

3. Results and discussions

Law No. 13 of 2003 concerning Manpower contains that employment is anyone who is able to do work to produce goods and / or services both to meet their own needs and the needs of the community. Manpower is the population that participates in the economic process [5]. Production involves labor in all stages from crop preparation, production support needs, seed planting, maintenance, fertilization, treatment, harvesting, and yield sales processes [6]. Workers in the labor force approach can be divided into 2 (two), namely the labor force and not the labor force. The labor force or labor force is the economically active population of both workers and unemployed. Manpower as a human resource plays a role in the utilization of natural resources, both human beings (farmers) as laborers to process natural resources, the greater the benefits or benefits obtained from farming. The use of human resources will be optimal if the output produced can be maximized in this case is able to work on agricultural land owned [7].

Agriculture related to geography will be directly related to spatial or spatial contexts, such as agricultural locations. This is because geography has 3 (three) approaches namely spatial or spatial approaches, environmental or ecological approaches, and complex regional approaches. In practice, agriculture in its activities utilizes natural and human resources as land managers, so that geography and agriculture have links. Agricultural geography focuses on the distribution or distribution of plants. The following is the position of agriculture in the discipline of geography:

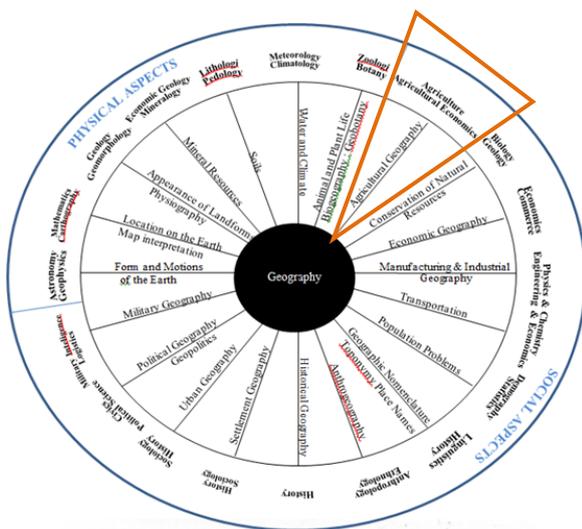


Fig. 2. The position of agriculture in geography

Factors of production are land area, capital, labor, experience, age, level of crafts, wages, hours of work, and the number of dependents [8]. Factors that influence agricultural production are genetic, natural or environmental, labor, capital, and management [9]. Manpower meant in agriculture is the amount of labor contribution in agricultural business activities. The contribution of labor will be related to the results of production as a form of output from a business carried out by labor.

Sector A workforce analysis unit is carried out at the provincial and district/city scale. The provincial analysis unit aims to see the contribution of each district /city to the province, while the district/city analysis unit to see trends over the 2010-2018 range in each district/ city. The labor conditions in each regency/city in Riau Province in sector A or agriculture during the period of 2010 to 2018 experienced dynamics every year. The following are the number of regency/city workers in Riau Province that are studied in a province basis:

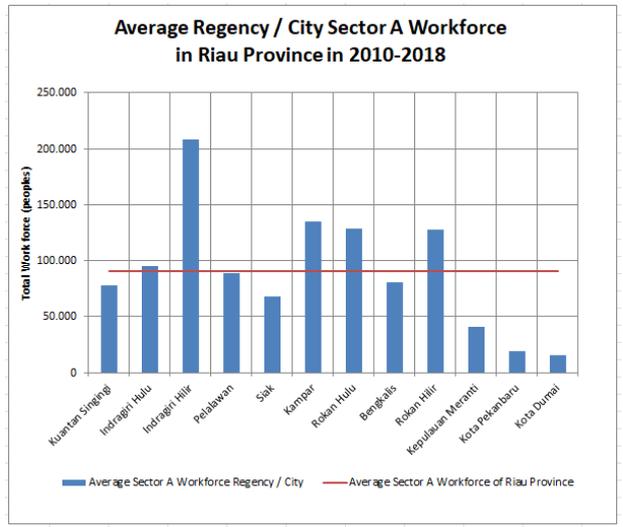


Fig. 3 Average number of regency / city workers in Riau Province

The figure above shows the contribution of Indragiri Hilir Regency, Kampar Regency, Rokan Hulu Regency, Rokan Hilir Regency, and Indragiri Hulu Regency very large to the province in terms of the number of workers. On average, from 2010-2018 the number of workers in sector A in Riau Province amounted to 90 681 people per district. On average, the five districts that have contributed greatly over the past 9 years have had a workforce in the agriculture sector as many as 208,758 people, 135 057 people, 129 114 people, 128 115 people, and 95 257 people. Agricultural sector employment data (sector A) is workers who work in the agriculture, plantation and fisheries subsectors. Manpower in Indragiri Hilir Regency is very much caused in the district sector A is the main livelihood of the community. This is also supported by Indragiri Hilir Regency policy related to an increase in the agricultural sector in the form of "Agropolitan Area Development" [10] and a strategic development program "Improvement and the

development of agricultural production centers (rice)" [11].

Sector A workers in Dumai City, Pekanbaru City and Meranti Islands constitute 3 (three) districts with the lowest number of agricultural sector workers. This is driven by the development of the region towards industry and services. The available employment opportunities in the industrial and service sectors caused a change in the employment structure from the agricultural sector to the industrial and service sectors in the 3 (three) districts. Changes that occur in accordance with the theory of changes in economic structure, namely the occurrence of economic transformation in developing regions and emphasize the agricultural sector towards a modern economic structure (industrial and service sectors) [12]. Structural transformation theory was also proposed by Fisher where there was a shift in labor and investment from the primary sector (agriculture sector) to the secondary sector and to the tertiary sector [13]. Geographical factors also support the development of the industrial and service sectors, for example in the District of Meranti Islands and Dumai City. The Meranti Islands Regency and Dumai City are located close to the Malacca Strait. Geographical conditions that are close to the sea or on the coast will be related to water activities such as transportation or services, so that the mode of water transportation is one of the main livelihoods of the community and the geographical conditions are very supportive for activities in the industrial and service sectors. Pekanbaru City is geographically not located on the coast but in the middle of Riau Province and its function as a capital city makes Pekanbaru City a center of government and attractiveness from outside the region for investment in the economy, for example services. This is what makes the City of Pekanbaru in terms of the number of workers in the primary sector very low besides the amount of land available for agriculture is very small too.

Changes in the number of human resources (labor) in fact experienced quite varied dynamics in various districts / cities in Riau Province (Figure 3). Regencies that are classified as high in the number of workers in the agricultural sector may also experience a decline each year due to various factors

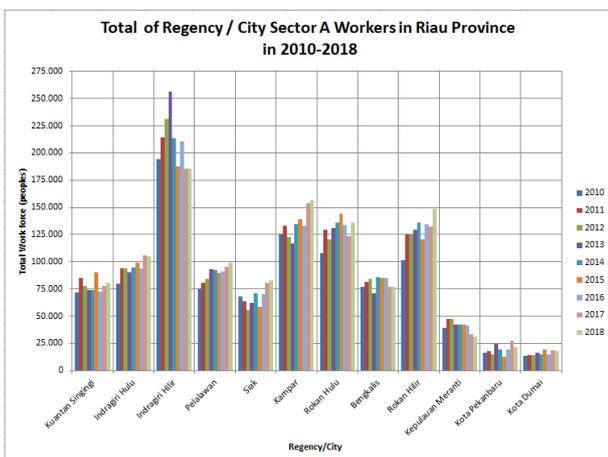


Fig. 4 Number of Regency / City Workers in Riau Province During the 2010-2018 Period

Indragiri Hilir Regency, Kampar Regency, Rokan Hulu Regency, Rokan Hilir Regency, and Indragiri Hulu Regency which are the districts with the highest number of sector A (agricultural) workers, apparently from 2010 to 2018 experienced changes in labor every year. Indragiri Hilir Regency, Regency Kampar, Rokan Hulu Regency, and Rokan Hilir Regency, which has an average labor force in the agricultural sector above the average labor force in Riau Province, is dominated by a rising trend or increase in labor per year. Specifically Indragiri Hilir Regency changes in the number of workers tends to be negative or decreasing, where from 2013–2018 there were significant labor fluctuations and tended to decline. The decrease in the number of agricultural sector workers in Indragiri Hilir Regency in 2013–2018 was triggered by one of the haze disasters at the end of 2013 and also the haze disaster that occurred in 2015. The impact of the haze is the disruption of plant photosynthesis due to obstruction of sunlight for entering the plant. Human activity is also hampered and limited, resulting in a decrease in work efficiency. The decrease in labor is also supported by the condition of Indragiri Hilir Regency in 2013–2018 which has an area of agricultural land that tends to decrease.

The agricultural sector in Riau Province is examined from the results of rice production as output from labor during 2010 to 2018 producing districts / cities whose production is below the provincial average. The following is the average yield of rice production over the past 9 years in all regencies / cities in Riau Province:

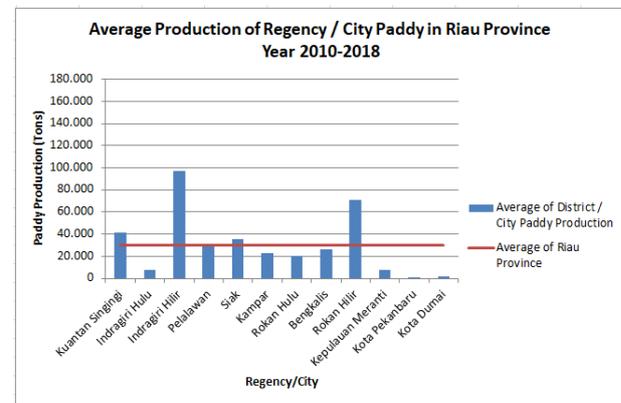


Fig. 5 Average rice production in Riau Province

The yield of rice production will be related to food reserves in Riau Province which will determine food security in Riau Province in a particular year. Based on Figure 5, the three districts with the highest rice production are Indragiri Hilir Regency, Rokan Hilir Regency, and Kuantan Singingi Regency. The highest production of rice produced in each district was 109,921 tons, 69,625 tons and 45,641 tons. Rice production in Indragiri Hilir and Rokan Hilir Districts is far above the provincial production average because the Regency of Indragiri Hilir and Rokan Hilir are districts that become the biggest rice granary in Riau Province. In addition to the three districts, there are districts that are very low in producing rice production, namely Pekanbaru City and Dumai City. This is because Pekanbaru City is the

capital of Riau Province and is focused on governance and the development of the tertiary or service sector and the industrial sector. Pekanbaru City as the provincial capital indirectly attracts investment from abroad and the surrounding area. In addition to Pekanbaru City, Dumai City is also a district that produces rice in small quantities, which can only produce an average of 109 tons in the 2010–2018 time span. The low rice production in Dumai City is also due to the high industrial sector in the city. The industries or companies found in Dumai City include PT. Nagamas Palmoil Lestari, PT. Inti Benua Perkasatama, PT. Sentana Superpower Pratama, PT. Taluk Kuantan Perkasa, PT. Sari Dumai Sejati, and PT. Dumai Intergraphics Press.

When examined on a more detailed scale each year, there are changes or dynamics in rice production in Riau Province. The following graph shows the dynamics of rice production over the past 9 years in each district/ city:

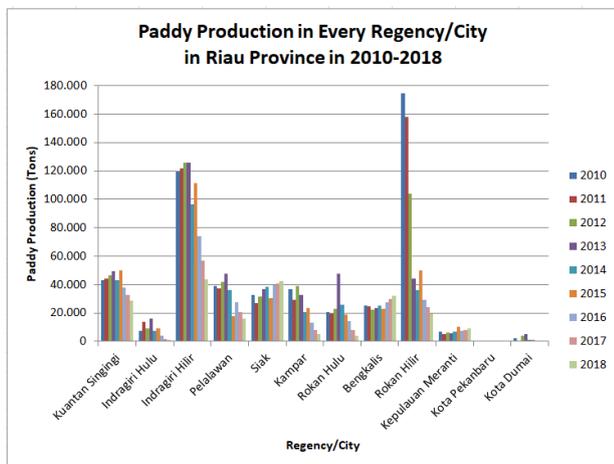


Fig. 6 District/city paddy production in Riau Province during the 2010–2018 period

Figure 6 describe the amount of rice production per district / city in Riau Province during 2010-2018. Rice production in Indragiri Hilir Regency and Rokan Hilir Regency which are classified as high in contributing to the food of Riau Province, apparently experienced dynamics annually during the period 2010-2018. Both districts tend to have negative patterns or production which tends to decrease, although it is still classified as above the Riau Province average. Drastic decline in rice production occurred in Rokan Hilir Regency in 2010-2013 this was in line with the decreasing planting area for rice plants. Then the status of Rokan Hilir Regency, which is one of the rice barns in Riau Province, is pushing for an increase in rice production, one of which is by maximizing the workforce employed in the agricultural sector.

Generally, in Riau Province, if the number of workers is large, the rice production produced will also be large. This is accordingly seen in Figure 3 and Figure 5 that occurred in Indragiri Hilir Regency and Rokan Hilir Regency which were the districts with the highest categories of labor and rice production. Unlike the Indragiri Hilir and Rokan Hilir Regencies, Kampar Regency has a large number of workers in sector A to

reach above the provincial average, but the yield of rice production is low. This indicates that productivity is poor or low in Kampar District. This situation also occurs in Indragiri Hulu Regency which is included in the high category of sector A workforce, but low rice production. Productivity can be said to be good or high when the amount of rice production increases and the number of workers remains or decreases. Indragiri Hulu Regency has a lot of workers in sector A, apparently it is dominated by workers who work in the plantation subsector, the developing plantations in Indragiri Hulu Regency are oil palm plantations. The oil palm companies in Indragiri Hulu Regency are PT Perkebunan Nusantara V Bukit Selasih, PT Perkebunan Nusantara V Air Molek, PT Rigunas Agri Utama, PT Talang Jerinjing Sawit, PT Buana Wiralestari Mas, PT Inecda Plantation, PT Inecda Plantation, PT Inti Indosawit Subur, PT Nikmat Halona Reksa, PT Nirmala Abdi Damai, PT Tunas Baru Lampung, Perusahaan AE Brother'S Cab .ei Guntung, Perusahaan AE Brother'S, PT Hapenso Jaya, PT Cab. Kuala Enok Pulau Sambu, PT (Cab.Sei Guntung) Pulau Sambu, PT Sambu Sakti Sawmill, and PT Teras Asia Sawmill [14].

4. Conclusion

Absorption of labor in the agricultural sector and rice production in Riau Province in 2010-2018 varies considerably each year. Generally, regencies classified as high in human resources (labor) such as Indragiri Hilir and Rokan Hilir Regency produce rice production that is classified as high. Regencies that are classified as high in the number of workers are Kampar and Rokan Hulu, but rice production is still relatively low due to not optimal productivity. Absorption of workers in the agricultural sector generally decreases due to reduced employment opportunities due to land availability that tends to decrease, due to land conversion and in certain years there was a haze disaster.

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References

1. Central Statistics Agency, *Provinsi Riau Dalam Angka*, Biro Pusat Statistik (2018).
2. Central Statistics Agency, *Provinsi Riau Dalam Angka*, Biro Pusat Statistik (2017).
3. E. Faizin, BPN Riau Province Holds LP2B Coordination Meeting, accessed on May 1, 2020 at riaupos.jawapos.com/ (2019).
4. Riau.go.id., Riau Pusat MP3EI Sumatera Corridor, accessed on May 1, 2020 at www.riau.go.id/ (2013).
5. I.B. Mantra, *Demografi Umum*, Yogyakarta (2000).
6. F. Hernanto, *Ilmu Usaha Tani*, Jakarta (1996).

7. D. Kartikasari, *Pengaruh Luas Lahan, Modal, dan Tenaga Kerja Terhadap Hasil Produksi Padi di Kecamatan Keling Kabupaten Jepara*, Semarang State University (2011).
8. N.G. Mankiw, *Teori Makro Ekonomi*, Fourth Edition (2000).
9. Banowati, Eva. and Sriyanto, *Geografi Pertanian*, Yoyakarta (2013).
10. Riau.go.id, Indragiri Hilir Regency, accessed on 15 May 2020 at www.riau.go.id/ (2019).
11. DPMPSTSP Kab. INHIL, Agriculture and Horticulture, accessed on 15 May 2020 at dpmpstsp.inhilkab.go.id/ (2019)
12. M.P. Todaro, *Pembangunan Ekonomi di Dunia Ketiga*, Second Volume Four Edition, Jakarta (1999).
13. Fisher R.A, *The Design of Experiments*, Edinburgh (1935).
14. Daftarperusahaan.com, List of Companies in Indragiri Hulu, accessed on May 15, 2020 at www.daftarperusahaan.com/ (2020).