

Analysis of Trends in Food Crop Production in West Sumatra Province

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Abstract

Food crops are agricultural commodities that have a significant contribution to food security, economic stability, and community welfare. West Sumatra Province, as one of the agricultural regions in Indonesia, has great potential in developing various food crop commodities that are an important part of people's consumption and life. Despite having the potential to support natural resources, the dynamics of food crop production in West Sumatra show fluctuations from time to time. Analysis of food crop production trends is important to understand production development patterns and identify challenges and opportunities in efforts to increase food crop commodity production. This study aims to determine the trend in the amount of food crop commodity production in West Sumatra Province. This study analyzed food crop production trends in West Sumatra Province using quantitative descriptive analysis of secondary data from the Central Statistics Agency (2020-2024). Six commodities were examined: paddy, corn, peanuts, mung beans, cassava, and sweet potatoes. The results of the study found that throughout 2018-2024, the production of food crop commodities in West Sumatra Province, consisting of paddy, corn, peanuts, mung beans, cassava, and sweet potatoes, showed a negative trend where food crop commodities tended to experience a decrease in production from year to year. The production of food crop commodities is influenced by various factors, including land area, seeds, fertilizers, pesticides, the number of workers, and climate change. The declining food crop production in West Sumatra Province requires immediate attention to ensure food security amid growing population demands.

Keywords: Food Crop Production, West Sumatra Province, Agricultural Trends, Food Security

1. Introduction

Food is an important primary need for humans. Fulfilling people's food needs is one of the things that must be attempted by the government. Food is very important to be fulfilled for every individual to create quality human resources (Ariyanti et al., 2024). Food crops are a sub-sector of agriculture that plays an important role in supporting human survival. Food crops are one of the main sub-sectors in agriculture that have a significant contribution to food security, economic stability, and community welfare.

In Indonesia, the role of food crops is very strategic in ensuring the availability of staple foods and supporting sustainable agricultural development. West Sumatra Province as one of the regions in Indonesia has great potential in developing various food crop commodities such as paddy, corn, cassava, and sweet potatoes, which are an important part of people's consumption and life. Along with the times, the population continues to increase every year so that the need for food is also increasing. This urges the agricultural sector to increase production amidst the challenges of decreasing land area and increasing population growth rates (Nadapdap, 2017).



Food crop commodity production in West Sumatra Province experiences production dynamics that show fluctuations in food crop production over time. These production dynamics are influenced by various factors such as climate change, land conversion, technological developments, agricultural policies, and socio-economic dynamics of farmers. Analysis of food crop production trends is important to understand production development patterns and identify challenges and opportunities in efforts to increase food crop commodity production. This study aims to analyze food crop commodity production trends in West Sumatra Province. The results of this study are expected to provide an empirical picture of the development of food crop commodity production in West Sumatra Province.

2. Methods

This research was conducted from January to March 2025 with the scope of the research in West Sumatra Province. This study uses secondary data obtained from the Central Statistics Agency of West Sumatra Province. The data used is time series data on food crop production in West Sumatra Province in 2020-2024. The data used in this study has a time span of five years with the aim of seeing the trend of food crop commodity production temporally. The selection of data in this study is adjusted to the availability and completeness of the data. The food crop commodities analyzed in this study are limited to paddy, corn, peanuts, mung beans, cassava, and sweet potatoes. The data analysis method used in this study is quantitative descriptive analysis.

3. Results and Discussion

3.1. Paddy Production Trends in West Sumatra province

The amount of paddy production in West Sumatra Province in 2018-2024 can be seen in Table 1.

Table 1. Paddy Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	1.483.076,48		
2019	1.482.996,01	-80,47	-0,01
2020	1.387.269,29	-95.726,72	-6,45
2021	1.317.209,38	-70.059,91	-5,05
2022	1.373.532,19	56.322,81	4,28
2023	1.482.468,79	108.936,60	7,93
2024	1.356.467,93	-126.000,86	-8,50
Average	1.411.860,01	-21.101,43	-1,30

Source: Processed secondary data, 2025

Table 1 shows the amount of paddy production in West Sumatra Province in 2018-2024 ranging from 1,317,209.38 tons to 1,483,076.48 tons. The highest paddy production occurred in 2018 with a total of 1,483,076.48 tons while the lowest production occurred in 2021 with a total of 1,317,209.38 tons. The average paddy production in West Sumatra in 2018-2024 is 1,411,860.01 tons per year. The graph of the amount of paddy production in West Sumatra Province in 2018-2024 can be seen in Figure 1.

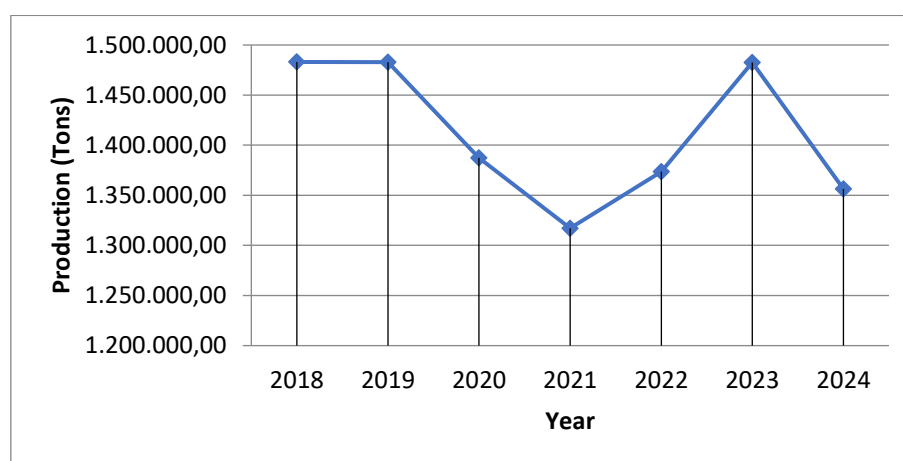


Figure 1. Paddy Production in West Sumatra Province

In Figure 1, it can be seen that paddy production in West Sumatra Province in 2018-2024 shows a negative trend where paddy production tends to decline even though in certain years it has increased. Throughout 2018-2024, paddy production in West Sumatra Province decreased by an average of 21,101.43 tons per year or 1.30% per year.

Paddy production can be influenced by various factors. Walis et al. (2021) in their research results reported that paddy production is influenced by land area and urea fertilizer. Damayanti et al. (2013) in her research results reported that paddy production is influenced by land area, use of urea fertilizer, phonska fertilizer, number of workers, age of farmers, and frequency of farmer guidance, and irrigation. Tarisa & Hutajulu (2022) in their research results stated that rainfall has a significant influence on paddy production. Opu et al. (2022) in their research results stated that simultaneously the variables of land area, labor, seeds, urea, NPK, and pesticides have a significant effect on irrigated lowland paddy production.

3.2. Corn Production Trends in West Sumatra Province

The amount of corn production in West Sumatra Province in 2018-2024 can be seen in Table 2.

Table 2. Corn Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	993.161,20		
2019	920.130,50	-73.030,70	-7,35
2020	939.465,95	19.335,45	2,10
2021	887.960,96	-51.504,99	-5,48
2022	844.560,12	-43.400,84	-4,89
2023	800.952,92	-43.607,20	-5,16
2024	733.298,37	-67.654,55	-8,45
Average	874.218,57	-43.310,47	-4,87

Source: Processed secondary data, 2025

Table 2 shows the amount of corn production in West Sumatra Province in 2018-2024 ranging from 733,298.37 tons to 993,161.20 tons. The highest corn production occurred in 2018 with a total of 993,161.20 tons while the lowest production occurred in 2024 with a total of 733,298.37 tons. The average corn production in West Sumatra Province in 2018-2024 was 874,218.57 tons per year. The graph of the amount of corn production in West Sumatra Province in 2018-2024 can be seen in Figure 2.

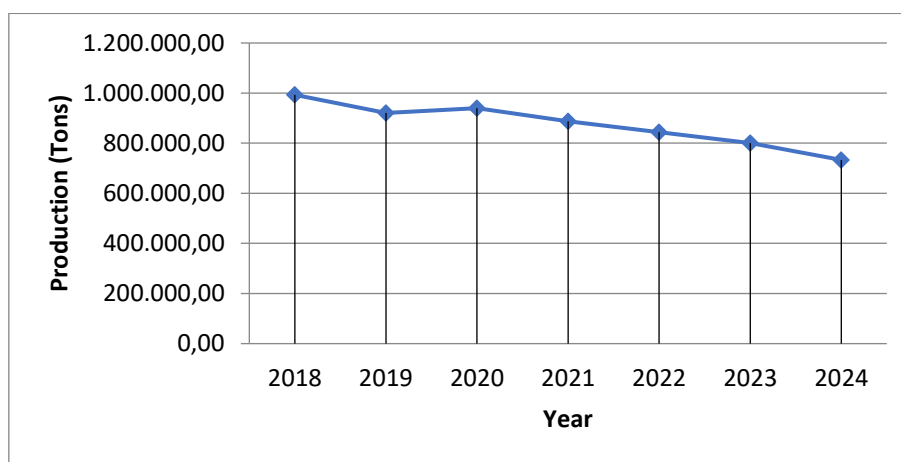


Figure 2. Corn Production in West Sumatra Province

In Figure 2, it can be seen that corn production in West Sumatra Province in 2018-2024 shows a negative trend where corn production tends to decline even though in certain years it increases. Throughout 2018-2024, corn production in West Sumatra Province decreased by an average of 43,310.47 tons per year or 4.87% per year.

Corn production can be influenced by various factors. Tangkowit et al. (2023) in their research results reported that corn production was simultaneously influenced by land area, seeds, urea fertilizer, phonska fertilizer, labor, pesticides, and farmer experience. Rampengan et al. (2023) in their research results reported that land area, seeds, fertilizers and labor simultaneously showed a positive and significant effect on corn production. Pardi et al. (2023) in their research results explained that seed factors and the use of ZA fertilizer had a significant effect on corn production.

3.3. Peanut Production Trends in West Sumatra Province

The amount of peanut production in West Sumatra Province in 2018-2024 can be seen in Table 3.

Table 3. Peanut Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	4.809,10		
2019	4.498,50	-310,60	-6,46
2020	4.439,03	-59,47	-1,32
2021	3.560,74	-878,29	-19,79
2022	3.077,87	-482,87	-13,56
2023	3.197,00	119,13	3,87
2024	3.995,76	798,76	24,98
Average	3.939,71	-135,56	-2,05

Source: Processed secondary data, 2025

Table 3 shows the amount of peanut production in West Sumatra Province in 2018-2024 ranging from 3,077.87 tons to 4,809.10 tons. The highest peanut production occurred in 2018 with a total of 4,809.10 tons while the lowest production occurred in 2022 with a total of 3,077.87 tons. The average peanut production in West Sumatra Province in 2018-2024 was 3,939.71 tons per year. The graph of the amount of peanut production in West Sumatra Province in 2018-2024 can be seen in Figure 3.

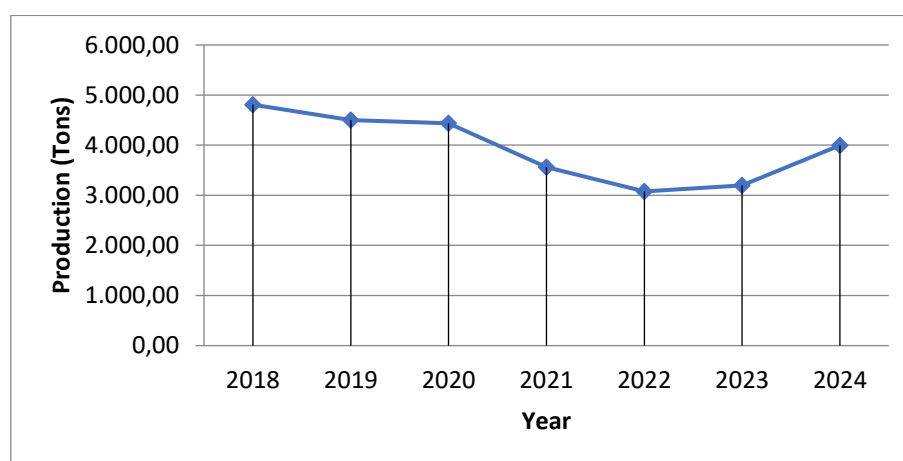


Figure 3. Peanut Production in West Sumatra Province

In Figure 3, it can be seen that peanut production in West Sumatra Province in 2018-2024 shows a negative trend where peanut production tends to decline even though in certain years it has increased. Throughout 2018-2024, paddy production in West Sumatra Province decreased by an average of 135.56 tons per year or 2.05% per year.

Peanut production is influenced by various factors. Zikri et al. (2024) in their research results stated that the land area factor has a significant effect on peanut production. Maulidya et al. (2025) in their research results reported that land area, number of seeds, and amount of fertilizer had a significant effect on peanut production. Risma et al. (2024) in their research results explained that peanut production was significantly influenced by land area and seeds.

3.4. Mung Bean Production Trends in West Sumatra Province

The amount of mung bean production in West Sumatra Province in 2018-2024 can be seen in Table 4.

Table 4. Mung bean Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	312,00		
2019	341,00	29,00	9,29
2020	296,88	-44,12	-12,94
2021	305,20	8,32	2,80
2022	372,20	67,00	21,95
2023	279,40	-92,80	-24,93
2024	162,20	-117,20	-41,95
Average	295,55	-24,97	-7,63

Source: Processed secondary data, 2025

Table 4 shows the amount of mung bean production in West Sumatra Province in 2018-2024 ranging from 162.20 tons to 372.20 tons. The highest mung bean production occurred in 2022 with a total of 372.20 tons while the lowest production occurred in 2024 with a total of 162.20 tons. The average mung bean production in West Sumatra Province in 2018-2024 was 295.55 tons per year. The graph of the amount of mung bean production in West Sumatra Province in 2018-2024 can be seen in Figure 4.

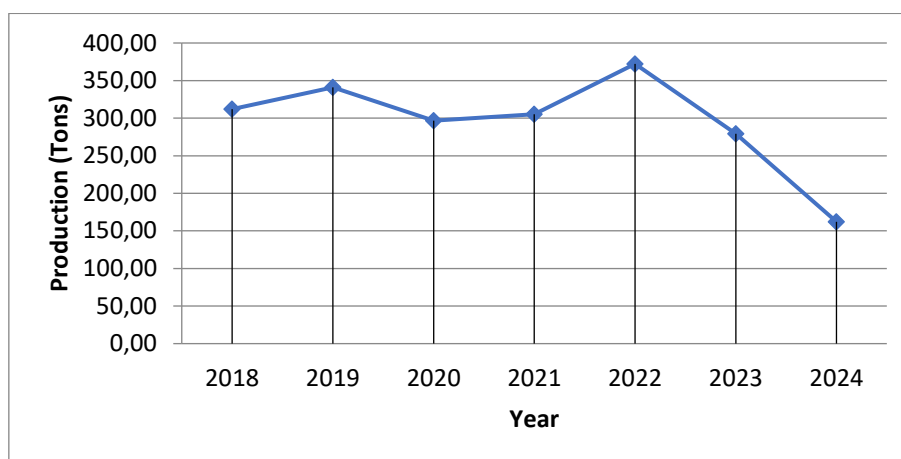


Figure 4. Mung bean Production in West Sumatra Province

In Figure 4, it can be seen that mung bean production in West Sumatra Province in 2018-2024 shows a negative trend where mung bean production tends to decline even though in certain years it has increased. Throughout 2018-2024, mung bean production in West Sumatra Province decreased by an average of 24.97 tons per year or 7.63% per year.

Mung bean production is influenced by various factors. Saputri & Penangsang (2024) in their research results reported that mung bean production is significantly influenced by land area and fertilizer factors. Moy et al. (2017) in their research results stated that seed factors and farmer experience have a significant effect on mung bean production. Romadoni et al. (2023) explained that mung bean productivity is influenced by land area, seeds, work time, Antracol pesticides, and mung bean farming experience.

3.5. Cassava Production Trends in West Sumatra Province

The amount of cassava production in West Sumatra Province in 2018-2024 can be seen in Table 5.

Table 5. Cassava Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	203.171,00		
2019	170.941,30	-32.229,70	-15,86
2020	154.728,76	-16.212,54	-9,48
2021	141.837,59	-12.891,17	-8,33
2022	117.226,57	-24.611,02	-17,35
2023	111.050,00	-6.176,57	-5,27
2024	105.599,75	-5.450,25	-4,91
Average	143.507,85	-16.261,88	-10,20

Source: Processed secondary data, 2025

Table 5 shows the amount of cassava production in West Sumatra Province in 2018-2024 ranging from 105,599.75 tons to 203,171.00 tons. The highest cassava production occurred in 2018 with a total of 203,171.00 tons while the lowest production occurred in 2024 with a total of 105,599.75 tons. The average cassava production in West Sumatra Province in 2018-2024 was 143,507.85 tons per year. The graph of the amount of cassava production in West Sumatra Province in 2018-2024 can be seen in Figure 5.

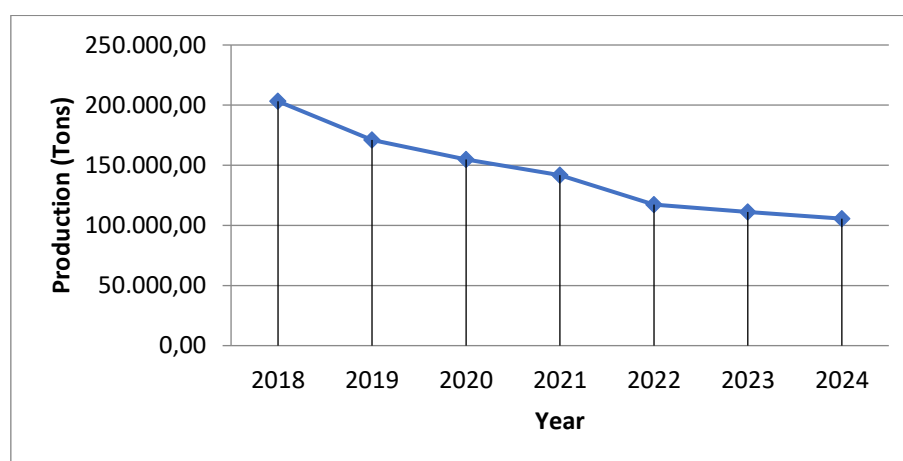


Figure 5. Cassava Production in West Sumatra Province

In Figure 5, it can be seen that cassava production in West Sumatra Province in 2018-2024 shows a negative trend where cassava production has decreased from year to year. Throughout 2018-2024, cassava production in West Sumatra Province decreased by an average of 16,261.88 tons per year or 10.20% per year.

Cassava production can be influenced by various factors. Armawan et al. (2023) in their research results reported that the factors that significantly affect cassava production are land area, seeds, chemical fertilizers, labor, and organic fertilizers. Purnomo & Kusuma (2022) in their research results reported that land area, fertilizer, and labor have a significant effect on cassava production. Anggraesi et al. (2020) in their research results reported that land area, amount of NPK fertilizer, urea fertilizer, SP-36 fertilizer, and harvest age affect cassava production.

3.6. Sweet Potato Production Trends in West Sumatra Province

The amount of sweet potato production in West Sumatra Province in 2018-2024 can be seen in Table 6.

Table 6. Sweet Potato Production in West Sumatra Province

Year	Production (Tons)	Growth (Tons)	Growth (%)
2018	138.066,00		
2019	121.518,40	-16.547,60	-11,99
2020	133.930,30	12.411,90	10,21
2021	141.837,59	7.907,29	5,90
2022	131.841,73	-9.995,86	-7,05
2023	117.636,00	-14.205,73	-10,77
2024	130.196,29	12.560,29	10,68
Average	130.718,04	-1.311,62	-0,50

Source: Processed secondary data, 2025

Table 6 shows the amount of sweet potato production in West Sumatra Province in 2018-2024 ranging from 117,636.00 tons to 141,837.59 tons. The highest sweet potato production occurred in 2021 with a total of 141,837.59 tons while the lowest production occurred in 2023 with a total of 117,636.00 tons. The average sweet potato production in West Sumatra Province in 2018-2024 was 295.55 tons per year. The graph of the amount of sweet potato production in West Sumatra Province in 2018-2024 can be seen in Figure 6.

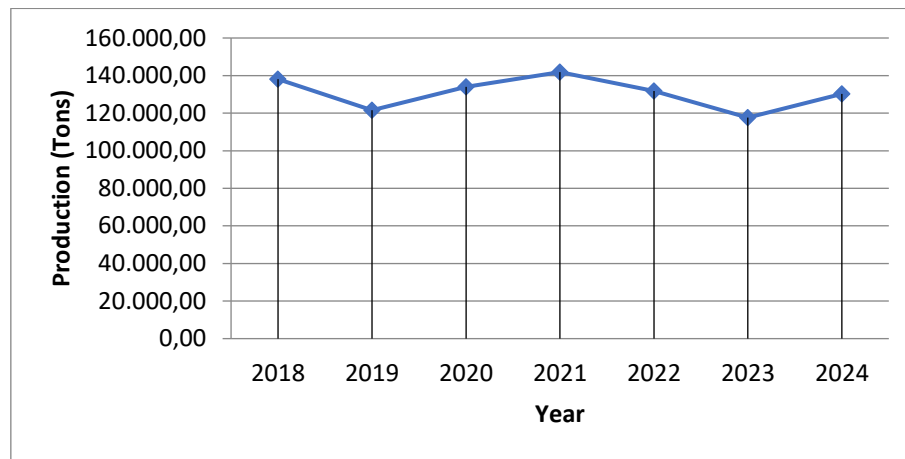


Figure 6. Sweet Potato Production in West Sumatra Province

In Figure 6, it can be seen that sweet potato production in West Sumatra Province in 2018-2024 shows a negative trend where sweet potato production tends to decline even though in certain years it has increased. Throughout 2018-2024, sweet potato production in West Sumatra Province decreased by an average of 1,311.62 tons per year or 0.50% per year.

Sweet potato production is influenced by various factors. Andriani et al. (2015) in their research results reported that land area, labor, number of seeds, and herbicides had a significant effect on sweet potato production. Sari et al. (2023) in their research results explained that factors of land area, seeds, phonska fertilizer, compost fertilizer, and labor simultaneously had a significant effect on sweet potato production. Widyastuti et al. (2023) in their research results stated that land area and seeds had a significant effect on sweet potato production.

4. Conclusion

The production of food crop commodities in West Sumatra Province in 2018-2024 including paddy, corn, peanuts, mung beans, cassava, and sweet potatoes showed a negative trend where there was a decrease in the amount of production. The production of food crop commodities is influenced by various factors including land area, seeds, fertilizers, pesticides, number of workers, and climate change. The decrease in the amount of food crop commodity production in West Sumatra Province is a problem that must be addressed immediately to maintain the availability of food amidst the increasing population from time to time.

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