



# Trends in Area, Production and Average Yield of Major Agricultural Crops in Mizoram: An Analytical Study

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## Abstract

The study examines the evolving patterns of cultivated area, crop production, and average yield of key agricultural crops in Mizoram from 2019 to 2024. The analysis highlights significant declines in the cultivated area and production of rice, pulses, oilseeds, and sugarcane, while potato displays a notable increase in yield despite reductions in area. These trends reflect the complex interplay of climatic factors, land use policies, farmer preferences, and technological adoption. The findings advocate for targeted policy measures, sustainable practices, and crop diversification strategies to bolster agricultural productivity and ensure food security in Mizoram.

**Keywords:** Agriculture, Production, Area, Trends, Sustainable Agriculture, Crop Diversification.

## Introduction

Agriculture constitutes the backbone of rural economy in Mizoram, providing livelihood opportunities for a majority of its population. It remains a vital sector for food security and economic development. Historically, the state's agriculture has primarily relied on rainfed cultivation, with rice serving as the main staple crop. In recent years, however, the sector has faced numerous challenges, including land constraints, climate variability, limited access to modern technology, and shifting farmer priorities. These factors have impacted cultivated areas, crop yields, and overall production. Hence, understanding trends in crop production and yield is essential for effective policy formulation and resource allocation. This study examines the changes in area, production, and yield of key crops over five years, providing insights into the factors influencing agricultural productivity.

## Objectives of the Study

- i). To analyze the temporal trends in cultivated area, crop production, and average yield of major agricultural crops in Mizoram from 2019 to 2024.
- ii). To identify significant patterns of increase or decline in the cultivation and productivity of key crops such as rice, maize, pulses, oilseeds, sugarcane, and potato.
- iii). To evaluate the factors influencing changes in crop area, yield and production of major crops in Mizoram.

## Methodology

This study is based on secondary data collected from official sources such as the Mizoram Department of Agriculture & Horticulture, government reports, and national databases. The

data covers the period from 2019-2024 and includes variables such as cultivated area (hectares), total crop production (metric tonnes), and average yield (metric tonnes per hectare).

The analysis involves year-wise comparison to identify trends—whether crops are expanding or contracting in area, increasing or decreasing in production, and experiencing yield improvements or declines. The focus is on the six major crops that significantly contribute to Mizoram's agriculture: rice, maize, pulses, oilseeds, sugarcane, and potato.

The Percentage change in variables like area, production, or yield is calculated to measure how much these values have increased or decreased over a specific period. The basic formula for percentage change is

$$\% \text{ change} = \frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \times 100$$

## Trends in Area, Production, and Average Yield of Major Agricultural Crops in Mizoram (2019-2024)

Monitoring and analyzing crop-specific data over recent years is crucial for understanding these dynamics. Such insights help policymakers, extension agencies, and farmers make informed decisions for sustainable and resilient agricultural development. This study focuses on the period from 2019 to 2024, analyzing changes in cultivated area, total production, and average yields of major crops such as rice, maize, pulses, oilseeds, sugarcane, and potato.

As shown in Table-1, the study indicates that, despite rice being the staple crop, its cultivation has experienced a significant decline by 2023-2024, with the cultivated area decreasing by more than 27% and overall production dropping by

approximately 33%. The slight decrease in yield suggests possible issues like land degradation, water scarcity, or shifting farmer priorities towards other crops.

The area under maize increased significantly in 2022-2023, likely due to government promotion and drought resilience benefits. However, the overall yield trend remains negative, indicating the need for agronomic improvements.

The declining trend in area and production, especially in recent years, points to reduced cultivation preference, possibly due to lower profitability or competition from other crops. Nonetheless, the yield increase in 2023-2024 highlights potential for improvement if supported properly.

Fluctuations in oilseed cultivation and yield reflect inconsistent performance, possibly driven by climatic variability and

market influences. The significant drop in area in 2023-2024 warrants attention to seed quality and crop management.

The stability in area during 2019-2021 followed by a decline indicates shifting crop priorities. The drop in yield and production suggests crop stagnation or reduced profitability.

A notable increase in yield, especially in 2022-2023, demonstrates potential for crop intensification. The fluctuations in area and yield suggest that with proper input management, potato could become a major crop for Mizoram.

The study shows that land constraints, climate change, and economic factors heavily influence these trends. The decline in traditional crops like rice and pulses raises concerns about food security, while the positive trends in potato and maize point to opportunities for diversification and resilience building.

**Table 1:** Area, Production, and Average Yield of Major Agricultural Crops in Mizoram (2019-2024)

Crop	Year	Area(ha)	Production (MT)	Yield ((MT/ha)	% change in Area	% change in Production	% change in Yield
Rice	2019-2020	35,210	60,239	1.711	-0.11%	+0.20%	+0.03%
	2020-2021	35,246	62,182	1.764	+0.09%	+3.22%	+3.07%
	2021-2022	34,907	60,881	1.744	-0.92%	-2.07%	-1.02%
	2022-2023	34,071	58,836	1.727	-2.36%	-3.31%	-0.96%
	2023-2024	24,615	39,924	1.622	-27.66%	-32.12%	-5.89%
Maize	2019-2020	6,352	11,668	1.837	+0.10%	+0.45%	+0.19%
	2020-2021	6,359	11,778	1.802	+0.11%	+1.01%	-2.00%
	2021-2022	6,464	11,136	1.676	+1.72%	-5.37%	-6.92%
	2022-2023	15,146	19,322	1.634	+134.52%	+73.83%	-8.71%
	2023-2024	6,398	10,674	1.668	-57.76%	-44.86%	+2.24%
Pulses	2019-2020	4,052	5,507	1.359	-0.10%	+0.45%	+0.45%
	2020-2021	4,059	5,559	1.378	+0.17%	+1.07%	+1.44%
	2021-2022	4,040	5,717	1.415	-0.50%	+2.75%	+2.65%
	2022-2023	3,694	4,513	1.221	-8.65%	-21.13%	-13.62%
	2023-2024	2,722	4,265	1.566	-26.37%	-5.54%	+28.34%
Oilseeds	2019-2020	2,460	3,488	1.418	-5.58%	-13.55%	-7.01%
	2020-2021	3,047	2,795	0.917	+23.94%	-19.81%	-35.29%
	2021-2022	3,102	3,158	1.044	+1.83%	+13.07%	+13.86%
	2022-2023	4,469	4,698	1.050	+44.21%	+48.74%	+0.57%
	2023-2024	2,337	2,887	1.230	-47.66%	-38.53%	+17.14%
Sugarcane	2019-2020	1,468	46,842	31.908	0%	0%	0%
	2020-2021	1,468	46,842	31.908	0%	0%	0%
	2021-2022	1,364	36,949	28.709	-7.09%	-21.22%	-10.11%
	2022-2023	1,146	41,371	28.258	-16.07%	+11.76%	-1.49%
	2023-2024	1,036	24,236	23.393	-9.66%	-41.44%	-17.72%
Potato	2019-2020	144	534	3.708	-3.47%	+4.99%	+8.94%
	2020-2021	169	651	3.852	+17.36%	+21.91%	+3.89%
	2021-2022	304	637	2.095	+79.88%	-2.09%	-45.55%
	2022-2023	213	1,350	6.339	-29.93%	+112.04%	+202.11%
	2023-2024	223	1,306	5.856	+4.69%	-3.26%	-7.55%

*Source:* Mizoram Economic Surveys (various issues), Govt. of Mizoram

### Major findings

- Rice, the staple crop, experienced a significant reduction of over 27% in cultivated area and nearly 33% in total production by 2023-2024, indicating declining importance or challenges in rice farming.
- Maize area surged in 2022-2023 due to government initiatives, but overall, its cultivated area decreased substantially in 2023-2024, with yields showing slight improvements after periods of decline.

- Both pulses and oilseeds saw reductions in cultivated area and production, reflecting shifting farmer preferences and market influences, although some crops showed yield improvements in recent years.
- Sugarcane cultivation remained stable initially but declined sharply after 2021, with decreases in both area and yield, suggesting crop stagnation or shifting priorities.
- Despite fluctuations, potato yields increased significantly in 2022-2023, highlighting its potential as a resilient and

high-yield crop for Mizoram.

- vi). Land constraints, climate variability, and economic factors are primary drivers behind these trends, underscoring the need for sustainable practices and crop diversification.
- vii). The positive trend in crops like potato and maize indicates potential pathways for diversification to enhance resilience and food security.

### **Suggestions**

To ensure the sustainability of its agricultural productivity, Mizoram must adopt a multifaceted approach that includes promoting climate-resilient and high-yield crop varieties to withstand changing environmental conditions. Improving irrigation infrastructure and soil health management will be essential to enhance crop yields and maintain land productivity. Additionally, encouraging crop diversification and integrating agroforestry practices can reduce dependency on a few staple crops, thereby increasing resilience and income stability for farmers. Providing comprehensive extension services and supporting the adoption of modern agricultural technologies will empower farmers with the knowledge and tools necessary for sustainable practices. Furthermore, formulating policies that incentivize sustainable land use and resource management will create an enabling environment for long-term agricultural growth. By addressing these interconnected issues, Mizoram can develop a resilient and sustainable agricultural system capable of facing future climatic and economic challenges effectively.

### **Conclusion**

The period from 2019 to 2024 in Mizoram's agriculture highlights a mixed scenario of decline and growth. Major crops such as rice, pulses, oilseeds, and sugarcane face challenges related to reduced cultivated areas and yields, necessitating urgent intervention through sustainable practices, improved inputs, and policy support. Conversely, crops like potato and maize show promising yield improvements, emphasizing the importance of crop diversification strategies for enhancing food security and income stability.

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