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Agriculture and Allied Sectors in Kerala and India: Emerging Insights and Trends

Dr. Thomas K. C.[1]

[1]Associate Professor, St. "Stephen's College Uzhavoor, Kottayam District"
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Abstract: Agriculture and allied sectors remain central to India's economy, contributing significantly to food security, employment, and rural livelihoods. However, their share in Gross Value Added (GVA) and Gross State Value Added (GSVA) has shown a gradual decline, reflecting structural transformation toward non-agricultural sectors. Using secondary data from National Accounts Statistics (GoI) and the Department of Economics and Statistics (GoK), this article examines trends in agricultural contribution and growth rates at national and state levels (2015–16 to 2024–25). The analysis highlights volatility in Kerala's agricultural growth, the role of climatic variability, and the resilience of rice cultivation through seasonal diversification and policy interventions. Findings highlight the need for sustained productivity enhancement, diversification, and resilience-building measures to ensure agriculture's continued role in socio-economic development.

Keywords: *Agricultural Growth, Gross State Value Added, Kerala, India.*

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I. INTRODUCTION

Kerala's agricultural sector faces constraints from climate variability, limited resources, and market fluctuations, yet it continues to adapt through innovative practices. The 14th Five Year Plan (2022–2027) prioritizes improving crop productivity and accelerating agricultural revival. Programmes are aligned with a farm-plan-based development approach, shifting from crop-specific strategies to integrated farming systems that combine multiple components at the farm level. This approach aims to reduce risks of production decline and enhance sustainability. Past studies consistently highlight the decline of rice cultivation in Kerala due to land conversion, rising labour costs, and changing farmer preferences. George (1999) and Nair (2000) documented early signs of contraction in paddy area and production, linking them to structural agrarian challenges. Devika and Thampi (2011) emphasized the social dimensions of agricultural decline, noting how migration and remittances reshaped rural livelihoods. Johnson (2017) provides a 61-year analysis (1956–57 to 2016–17) showing that rice and tapioca areas contracted significantly, while plantation crops such as rubber, pepper, and coconut expanded. The study highlights that Kerala consistently had high per hectare crop income, but structural changes driven by land reforms, migration, and remittances altered land-use patterns. Kumar & Abraham (2021) note that Kerala has witnessed a steady decline in net sown area and gross cropped area, with cropping intensity falling due to land conversion and labour shortages. The shift from food crops to cash crops has created concerns about food security in the state.

II. METHODOLOGY

This study adopts a secondary data analysis approach, relying on official statistical sources to examine trends in agriculture and allied sectors. Data on Gross Value Added (GVA) at the national level were drawn from the *National Accounts Statistics 2025* (Government of India), while state-level Gross State Value Added (GSVA) figures and agricultural growth rates were obtained from the *Department of Economics and Statistics, Government of Kerala (2026)*. Supplementary information on rice production was sourced from the *Food and Agriculture Organization (FAO, 2025)* and the *Ministry of Agriculture and Farmers' Welfare (2025)*. The analysis covers the period 2015–16 to 2024–25, with constant prices (2011–12) as the reference base. Tabular data were used to trace changes in the share of agriculture and allied sectors in GVA/GSVA, while growth rates were examined to identify volatility and structural constraints. Climatic influences, particularly rainfall variability and monsoon onset/withdrawal, were incorporated to contextualize production trends. Seasonal and district-level variations in rice cultivation were analysed to highlight regional specialization and the role of policy interventions such as the Rice Development Scheme. This methodological framework enables a comprehensive understanding of both

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macroeconomic trends and micro-level agricultural dynamics in Kerala.

Table 1: Share of Agriculture and Allied Sectors in GVA/GSVA National and State Level, Constant Prices 2011-12

Year	Share of agriculture and allied sectors in Total GVA (India) (%)	Share of agriculture and allied sectors in GSVA (Kerala) (%)
2015-16	15.4	10.74
2016-17	15.2	9.96
2017-18	15.3	9.61
2018-19	14.8	9.03
2019-20	15.1	8.55
2020-21	16.3	9.64
2021-22	15.6	8.92
2022-23	15.5	8.37
2023-24	14.7	7.97
2024-25	14.4	7.64

Source: Note: (P) Provisional, (Q) Quick Source: National Accounts Statistics 2025, GoI; Department of Economics and Statistics, GoK.

The share of agriculture and allied sectors in India's Gross Value Added (GVA) at constant 2011–12 prices has shown a marginal decline, slipping from 14.7 percent in 2023–24 to 14.4 percent (provisional) in 2024–25. A similar trend is visible in Kerala, where the contribution of agriculture and allied activities to the State's Gross State Value Added (GSVA) fell from 7.97 percent in 2023–24 (provisional) to 7.64 percent in 2024–25 (quick estimates).

This gradual decline highlights the structural transformation of the economy, with non-agricultural sectors expanding more rapidly. However, it also underscores the need for renewed policy focus on agricultural productivity, diversification, and resilience to ensure that the sector continues to play its critical role in food security, employment, and rural development.

Table: 2 Growth Rate Per Annum in Gross Value Added in Agriculture and Allied Sectors in Kerala, 2015-16 to 2024-25

Year	Growth rate per annum in Kerala (%)
2015-16	-5.1
2016-17	-0.65
2017-18	2.11
2018-19	-2.09
2019-2020	-2.56
2020-2021	1.58
2021-2022	4.12
2022-2023	0.15
2023-2024	1.25 (P)
2024-2025	2.14 (Q)

Source: Department of Economics and Statistics, Government of Kerala; Ministry of Agriculture and Farmers' Welfare, Government of India.

The data reveals high volatility in Kerala's agricultural growth over the past decade. Periods of contraction (2015–16, 2018–19, 2019–20) alternate with phases of modest recovery (2017–18, 2020–21, 2023–24) and stronger growth (2021–22). The sharp decline in early years reflects structural constraints such as fragmented landholdings, climate variability, and market fluctuations. The strong rebound in 2021–22 suggests that diversification, technology adoption, and institutional support can significantly boost performance.

However, the subsequent stagnation (2022–23) and only moderate recovery in 2023–24 and 2024–25 highlight the fragile nature of agricultural growth in Kerala. Sustained improvements will require consistent policy support, integrated farming systems, and resilience-building measures to counter climate and market risks.

In 2025, the South-West monsoon arrived in Kerala earlier than usual, making its onset on May 24, ahead of the normal date of June 1. During the monsoon season (June 1 to September 30), the State recorded normal rainfall of 1752.70 mm, which was about 13 percent below the long-term average of 2018.6 mm. However, rainfall distribution was uneven across districts, with Idukki (-35%), Malappuram (-27%), and Wayanad (-36%) experiencing significant deficits. The withdrawal of the monsoon also occurred slightly earlier, beginning on September 14 instead of the usual September 17 (Department of Economics and Statistics).

Kerala received large deficient winter rainfall between January 1 and February 28, 2025, further adding to seasonal variability. Detailed district-wise data on actual rainfall, normal rainfall, are provided in Figure 1.

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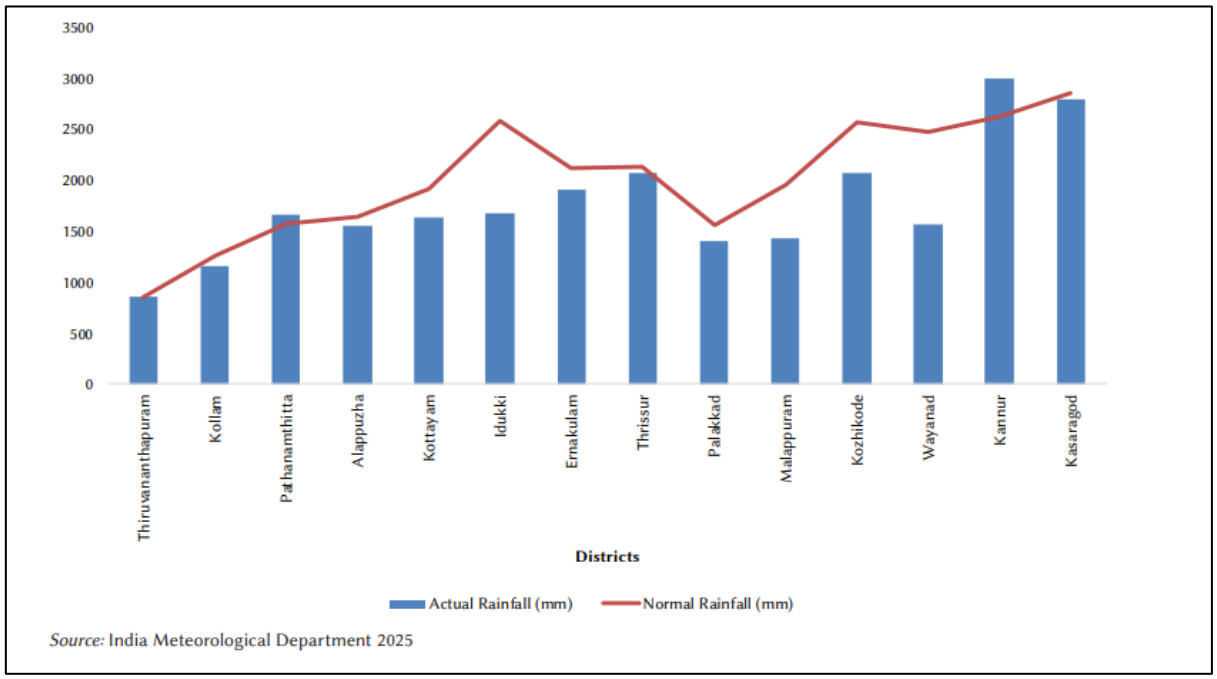

Fig 1 District-wise Rainfall Patterns in Kerala: Actual vs Normal, 2025

➢ *Trend of Rice Production*

Rice continues to be a critical component of global food security, with worldwide production in 2024–25 estimated at 546.6 million tonnes (milled basis), and India emerging as the largest producer, surpassing China (FAO, 2025). According to the Third Advance Estimates of the Ministry of Agriculture and Farmers' Welfare, India's rice output reached 1,490.74 lakh tonnes in 2024–25, reflecting an 8.16 percent increase over the previous year (MoAFW, 2025). In Kerala, rice accounted for 7.01 percent of the total cropped area during the same period, with wetland paddy covering 1.76 lakh hectares and producing 5.30 lakh tonnes at a productivity level of 3,006 kg per hectare, an improvement of 43 kg per hectare compared to 2023–24 (Government of Kerala, 2026).

Table 1: Trends in Paddy Area, Production, and Productivity (2013–2024) in Kerala and India

Sl. No	Year	Area (000 ha)		Production (000 MT)		Productivity (kg/ha)	
		Kerala	India	Kerala	India	Kerala	India
1	2013-14	199.61	43900	564.33	106500	2827	2424
2	2014-15	198.16	43860	562.09	105480	2837	2390
3	2015-16	196.87	43500	549.28	104410	2790	2400
4	2016-17	171.40	43990	436.48	108500	2547	2494
5	2017-18	189.09	43770	521.31	112910	2757	2578
6	2018-19	198.03	44160	578.26	116480	2920	2638
7	2019-20	191.05	43662	587.08	118870	3073	2722
8	2020-21	201.87	45769	626.89	124368	3105	2717
9	2021-22	193.95	46279	559.34	129471	2884	2798
10	2022-23	190.17	47832	592.68	135755	3117	2838
11	2023-24	178.95	47828	530.28	137825	2963	2882
12	2024-25	176.36	51423	530.22	149074	3006	2899

Source: Department of Economics and Statistics, Government of Kerala; Ministry of Agriculture and Farmers' Welfare, Government of India.

However, the overall area under wetland rice recorded a marginal decline of 1.45 percent, resulting in production levels that remained nearly constant. Over the past decade, the highest extent of paddy cultivation was observed in 2020–21, when the cropped area reached 2.02 lakh hectares with a production of 6.27 lakh tonnes (Government of Kerala, 2026). These figures highlight both the resilience and the structural challenges of rice cultivation in Kerala, where productivity gains coexist with gradual reductions in cultivated area.

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Table: 2 Percentage Change in Area, Production, and Productivity of Rice in Kerala (2022–23 to 2024–25)

Season	Area (ha) % Change	Production (MT) % Change	Productivity (kg/ha) % Change
Virippu (Autumn)	**–17.34%**	**–15.50%**	**+2.16%**
Mundakan (Winter)	**–3.04%**	**–6.34%**	**–3.39%**
Puncha (Summer)	**–4.34%**	**–11.65%**	**–7.65%**
All Seasons	**–7.25%**	**–10.54%**	**–3.56%**

Note: Percentage change computed between 2022–23 and 2024–25.
Source: Department of Economics & Statistics, GoK

Overall, rice cultivation in Kerala shows a contraction in both area and production across all seasons, with productivity trends varying by season. Autumn (Virippu) recorded the sharpest decline in area and production but managed a slight improvement in yield per hectare, indicating resilience. Winter (Mundakan) experienced moderate reductions in area and production, accompanied by a fall in productivity. Summer (Puncha) faced the most severe yield losses, with reduced area translating into disproportionately lower production and productivity. Taken together, all seasons reflect a 7.25% decline in cultivated area, a 10.54% drop in production, and a 3.56% fall in productivity, highlighting the overall stress on rice farming.

Table 3: District-Wise Area, Production and Productivity of Rice in Kerala (2022–to 2024–25)

District	Wet Paddy Area (ha)			Upland Paddy Area (ha)		
	2022–23	**2023–24**	**2024–25**	**2022–23**	**2023–24**	**2024–25**
Thiruvananthapuram	1715.63	1323.48	1315.99	3.87	2.09	0.38
Kollam	1793.91	1587.77	1443.14	65.43	69.72	7.22
Pathanamthitta	3690.47	3871.07	3860.6	13.47	13.93	15.08
Alappuzha	38908.48	39140.6	36860.5	52.74	53.15	53.15
Kottayam	17983.98	18232.9	18232.9	0	0	0
Idukki	3243.43	332.89	303.71	1.17	1.17	1.17
Ernakulam	4621.83	3869.7	3851.5	6.97	3.8	3.8
Thrissur	22867.5	23081	23181	5.93	5.93	5.93
Palakkad	73047.2	64390.7	65561.8	61.81	41.46	41.46
Malappuram	16158.55	15647.7	17300	26.13	27.32	27.32
Kozhikode	9519.86	9562.47	11306	23.16	23.16	23.16
Wayanad	7699.73	7175.93	8164	0.17	0.17	0.17
Kannur	3702.49	3721.38	3534.14	30.79	30.79	30.79
Kasaragod	2284.84	2191.92	1764.44	14.53	14.53	14.53
State Total	190170.9	178954.	176360	154.23	163.05	163.05

Source: Department of Economics & Statistics, GoK

The district-wise data on wetland and upland paddy areas from 2022–23 to 2024–25 reveals (Table 3) a clear contraction in Kerala's rice cultivation. At the state level, wetland paddy area declined steadily from 190,170 ha in 2022–23 to 176,360 ha in 2024–25, while upland paddy remained marginal, fluctuating only slightly around 154–163 ha. District-level patterns show that Alappuzha and Palakkad continue to dominate rice cultivation, though Palakkad recorded a notable reduction in wetland area. In contrast, Idukki and Thiruvananthapuram experienced sharp declines, with upland paddy nearly disappearing in the latter. Some districts, such as Malappuram and Kozhikode, registered increases in wetland area by 2024–25, bucking the overall downward trend. Overall, the data highlights structural changes in Kerala's rice sector, with traditional wetland cultivation shrinking and upland paddy remaining negligible, pointing to pressures from urbanization, crop diversification, and resource constraints.

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Table 4 District-Wise Area, Production and Productivity of Rice in Kerala (2022 to 2024–25)

District	Production (MT)(Wet)			Productivity(Kg/ha) (wet)			Production (MT) Dry	Productivity (MT Dry)
	2022–23	2023–24	2024–25	2022–23	2023–24	2024–25	2024-25	2024-25
Thiruvananthapuram	4287.29	3243.37	3343.7	2499	2451	2533	1469	0.56
Kollam	4329.38	3776.17	3122.54	2413	2347	2164	708	14.67
Pathanamthitta	11958.37	13095.51	13095.51	3088	3384	2776	556	-1.26
Alappuzha	120160.86	130956.5	130956.5	3088	3346	2776	556	8.39
Kottayam	50519.15	51173.15	51173.15	2809	2809	2809	0	0.378
Idukki	8935.03	8053.35	8053.35	2755	2419	2654	1580	1.76
Ernakulam	18973.85	8309.59	8309.59	4107	2147	2154	2343	8.93
Thrissur	78408.5	78708.5	78708.5	3427	3410	3396	1000	9.23
Palakkad	234166.29	215140.9	230166.3	3206	3342	3281	2477	102.7
Malappuram	27270.4	28813.4	28813.4	1687	1841	1666	952	6.32
Kozhikode	18383.9	18383.9	18383.9	1932	1924	1627	951	9.58
Wayanad	21797.12	19854.9	21818.5	2831	2772	2674	1043	0.18
Kannur	8523.8	8642.8	8642.8	2301	2322	2445	2816	24.58
Kasaragod	5137.48	5038.83	5038.83	2249	2300	2853	2259	32.83
State Total	592684.49	530823.9	530823.9	3117	2963	3006	1358	221.38

Source: Department of Economics & Statistics, GoK

The analysis of wet and dry paddy production and productivity across Kerala districts from 2022–23 to 2024–25 indicates notable disparities and an overall decline in output. At the aggregate level, wetland paddy production decreased from 592,684 MT in 2022–23 to 530,824 MT in 2024–25, alongside a reduction in productivity from 3,117 kg/ha to 3,006 kg/ha. Palakkad continued to be the leading producer, though its output showed fluctuations, while Alappuzha and Kottayam maintained relatively stable levels. Conversely, districts such as Thiruvananthapuram and Kollam experienced sharp declines, reflecting reduced cultivation intensity. Dry paddy contributed only marginally compared to wetland cultivation, with Palakkad, Kannur, and Kasaragod accounting for relatively higher shares. Productivity patterns varied across districts: yields improved in places like Idukki and Kannur, whereas declines were observed in Pathanamthitta and Kozhikode. Overall, the findings point to a contraction in Kerala's rice sector, with wetland cultivation remaining dominant but under stress, and dry paddy continuing to play a limited and uneven role.

Table :5 District-Wise Area, Production and Productivity of Local Varieties of Paddy in Kerala by Season (2024–25)

Sl. No	District	Summer Area (ha)	Summer Production (tonnes)	Summer Productivity (Kg/ha)	Winter Area (ha)	Winter Production (tonnes)	Winter Productivity (Kg/ha)	Autumn Area (ha)	Autumn Production (tonnes)	Autumn Productivity (Kg/ha)
1	Thiruvananthapuram	0.45	0.66	1476	1.84	4.73	2571	0.26	0.56	2169
2	Kollam	0.00	0.00	0	205.14	281.53	1372	0.17	0.33	1965
3	Pathanamthitta	2.10	6.04	2875	1.20	0.65	538	0.00	0.00	0
4	Alappuzha	0.00	0.00	0	30.22	32.20	1059	119.34	110.67	927
5	Kottayam	0.16	0.21	1338	3.46	4.22	1219	0.39	0.55	1408
6	Idukki	0.61	1.27	2077	0.00	0.00	0	0.00	0.00	0

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Sl. No	District	Summer Area (ha)	Summer Production (tonnes)	Summer Productivity (Kg/ha)	Winter Area (ha)	Winter Production (tonnes)	Winter Productivity (Kg/ha)	Autumn Area (ha)	Autumn Production (tonnes)	Autumn Productivity (Kg/ha)
7	Ernakulam	0.52	0.90	1733	10.64	21.79	2047	5.86	5.36	914
8	Thrissur	1.37	2.94	1984	23.26	40.69	1749	72.90	127.67	1751
9	Palakkad	5.22	5.86	1126	44.02	78.16	1776	8.74	14.04	1607
10	Malappuram	2.61	6.38	2446	151.87	210.26	1384	0.40	0.48	1203
11	Kozhikode	4.58	3.39	740	666.85	574.38	861	1.80	0.90	502
12	Wayanad	3.44	7.69	2235	522.35	1204.83	2307	0.00	0.00	0
13	Kannur	0.32	0.40	1244	355.03	477.94	1346	127.04	199.79	1573
14	Kasaragod	6.70	14.02	2092	291.58	547.66	1878	52.68	102.04	1944
Kerala Total	28.08	49.53	1764	2343.32	3556.58	1518	389.58	558.78	1434	

Note: Wetland paddy only Source: Department of Economics and Statistics, Government of Kerala

The seasonal paddy cultivation figures across Kerala reveal clear differences in cropping intensity and productivity. Summer cultivation remains marginal, with just 28 hectares producing 50 tonnes at an average yield of 1,764 kg/ha. In contrast, winter is the dominant season, covering over 2,343 hectares and generating 3,557 tonnes, though with moderate productivity of 1,518 kg/ha. Autumn cultivation contributes 390 hectares and 559 tonnes, with productivity averaging 1,434 kg/ha. District-level variations are notable: Kozhikode and Wayanad lead in winter area, while Kannur and Kasaragod show strong autumn performance. Productivity outcomes vary widely, with Pathanamthitta and Malappuram achieving high summer yields, whereas Kozhikode records low winter productivity despite extensive area. Overall, the data underscores winter as the backbone of Kerala's rice output, with summer and autumn playing supplementary roles and productivity shaped by district-specific conditions.

III. CONCLUSION

The analysis reveals that agriculture's share in both national GVA and Kerala's GSVA has declined over the past decade, underscoring structural transformation toward non-agricultural sectors. Kerala's agricultural growth remains highly volatile, shaped by climatic variability and structural constraints. Rice cultivation continues to play a pivotal role, with productivity gains offsetting reductions in cultivated area. Seasonal diversification through Puncha, Mundakan, and Virippu crops demonstrates resilience, with Palakkad and Alappuzha districts emerging as key contributors. Policy interventions under the Rice Development Scheme and input assistance programs highlight Kerala's commitment to sustaining paddy cultivation. Going forward, consistent policy support, climate-resilient strategies, and integrated farming systems will be essential to stabilize growth and ensure agriculture's continued contribution to food security and rural development.

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