Government Policy and Price Support Systems in Shaping Groundnut Cultivation Patterns in South India: Trends, Transitions, and Trajectories

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Abstract: *Groundnut (Arachis hypogaea L.) is India's most significant oilseed crop, accounting for approximately 45 per cent of the national oilseed area and 55 per cent of production. In South India, particularly in Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala, groundnut cultivation is deeply embedded in dryland farming systems and rural livelihoods. Over the period 1990–2024, government policies and price support mechanisms have fundamentally shaped cultivation patterns in this region; however, comparative longitudinal analyses across these four states remain sparse in the existing literature. This study examines the role of key policy instruments Minimum Support Price (MSP), Price Support Scheme (PSS), input subsidies, irrigation development, research and extension programs, and agricultural market reforms in shaping groundnut area, production, and yield across South India over three and a half decades. Drawing on secondary data from the Directorate of Economics and Statistics, NABARD, CACP, and state agricultural university outlook reports, this study traces how policy interventions have interacted with agro-climatic variability and market conditions to produce divergent state-level outcomes. The findings reveal a productivity-led growth paradox: despite net area contraction from approximately 7.1 million hectares in 1990 to 5.2 million hectares by 2020, total production rose from 5.4 to 10.2 million tons, driven by a 149 per cent improvement in average yields. Tamil Nadu emerges as a model of policy-infrastructure alignment, with stable area, rising yields, and persistent above-MSP market prices. Andhra Pradesh and Karnataka experienced area contraction offset by yield gains, while Kerala recorded a secular decline in both area and productivity. The study concludes with four evidence-informed policy recommendations: strengthening MSP procurement delivery, promoting sustainable intensification, investing in post-harvest infrastructure, and scaling Farmer Producer Organisation development. These findings contribute to the comparative literature on agricultural price policy in developing economies and offer actionable insights for oilseed policy design in South Asia.*

Keywords: Groundnut Cultivation, Minimum Support Price (MSP), Oilseed Policy, South India, Price Support Scheme

INTRODUCTION

Groundnut (*Arachis hypogaea* L.) is of considerable strategic importance to India's agricultural economy. As the dominant oilseed crop, it accounts for approximately 45 per cent of the nation's total oilseed area and around 55 per cent of its oilseed production (NABARD, 2017). In South India, particularly in Andhra Pradesh, Karnataka, and Tamil Nadu, groundnut is the cornerstone of dryland farming systems, simultaneously serving as a primary cash crop, an edible oil source, and a nitrogen-fixing rotation crop for millions of smallholder farmers.

The period from 1990 to 2024 encompasses one of the most turbulent eras in Indian agricultural policies. Trade liberalisation under the World Trade Organisation (WTO) framework from the mid-1990s, successive National Missions on Oilseeds, substantive revisions to Minimum Support Price (MSP) structures, and phased investments in irrigation and post-harvest infrastructure have each left measurable imprints on the acreage, productivity, and regional distribution of groundnut cultivation. This study's central concern is understanding how these layered policy interventions have interacted with agro-climatic variability and market conditions across four South Indian states over more than three decades.

Existing scholarship on Indian oilseed policy is predominantly national in scope or confined to single-state analyses, leaving a gap in the comparative longitudinal assessment of the South Indian groundnut belt. This study addresses this gap by systematically examining the impacts of government policy across Andhra Pradesh, Karnataka, Tamil Nadu, and Kerala from 1990 to 2024, with particular attention to price support mechanisms, publicly funded research and extension, input subsidies, irrigation development, and market reforms. This paper proceeds from a literature review through methodology to results and analytical discussion, concluding with evidence-informed policy recommendations.

REVIEW OF LITERATURE

Scholarly attention to Indian groundnut and oilseed policy has intensified since the 1990s, driven by concerns over edible oil import dependence and persistent rural income volatility in dryland farming regions of the country. Birthal et al. (2010) established through a multi-state analysis that institutional factors—particularly MSP policy design and public procurement infrastructure—significantly influence oilseed production decisions, with groundnut exhibiting higher supply elasticity to price signals than competing crops in semi-arid zones.

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Regarding productivity dynamics, Selvaraj and Ramasamy (2015) documented the transformative role of high-yielding variety (HYV) adoption in Tamil Nadu, demonstrating that technology diffusion through public extension networks accounted for a substantial share of the state's yield advantage in the 2000s. This aligns with the ICRISAT research by Joshi et al. (2005), which showed that variety-related yield gains in groundnut could be realised without significant expansion of the irrigated area, provided that extension coverage was adequate and certified seed supply chains were reliable.

The price-support literature presents more nuanced findings. Kumar and Sharma (2018) found that while MSP announcements positively influenced planting decisions, actual procurement under the Price Support Scheme (PSS) was frequently delayed and geographically uneven, diluting the scheme's income-stabilising effect. Studying Andhra Pradesh specifically, Reddy et al. (2020) documented instances where farmgate prices fell below the MSP at harvest, yet PSS procurement was unavailable due to storage bottlenecks, directly exposing farmers to distress sales.

Regional studies have highlighted Tamil Nadu's distinctive policy-productivity nexus. Krishnamurthy and Venkatesan (2019) attributed the state's groundnut performance to well-maintained tank irrigation, subsidised certified seed programs, and proximity to export markets via Chennai port. In contrast, studies from Karnataka (Nagaraj et al., 2016) and Andhra Pradesh (Reddy & Subrahmanyam, 2021) emphasise the vulnerability of predominantly rain-fed groundnut systems to monsoon variability and competitive displacement by cotton and sunflower in the post-liberalisation period.

The literature on agricultural market reforms and groundnuts is limited but growing. Acharya and Jogi (2022) found that APMC reforms and e-NAM adoption improved price discovery in well-connected mandis but had a limited impact on smallholders distant from these platforms. Narayanan (2023) noted that contract farming in oilseed processing had expanded market access for organised farmer groups but remained inaccessible to marginal smallholders, pointing to persistent structural inequalities in the policy benefit transmission chain that this comparative analysis revisits.

METHODOLOGY

This study adopts a secondary data analysis approach that is consistent with longitudinal policy evaluation methodologies in agricultural economics. Data were compiled from the Directorate of Economics and Statistics (DES), National Bank for Agriculture and Rural Development (NABARD), Commission for Agricultural Costs and Prices (CACP), and Agricultural Market Intelligence Centre (AMIC) outlook reports from Acharya N. Ranga Agricultural University and Professor Jayashankar Telangana State Agricultural University (PJTAU). State agricultural department policy notes and national mission operational guidelines were reviewed for qualitative contextualisation.

The study period (1990–2024) was divided into four analytical sub-periods aligned with major policy regime shifts: pre-liberalisation consolidation (1990–1994), post-WTO adjustment (1995–2004), mission-mode oilseed push under NMOOP (2005–2014), and market-reform convergence under NMEO (2015–2024). This periodisation enables a structured assessment of how changing policy architectures shape cultivation outcomes across successive institutional contexts.

Three principal outcome variables were tracked: cultivated area (million hectares), total production (million tonnes), and average yield (kg/ha), disaggregated by state. These were examined against key policy indicators, including MSP levels in both nominal and constant (2011–12) prices, PSS procurement volumes, certified seed distribution records, and irrigation coverage ratios. Qualitative policy analysis draws on a content review of CACP recommendations, mission documents, and state agricultural policy notes spanning 2010 to 2025.

The analytical framework is comparative-descriptive rather than econometric, given the constraints on consistent district-level data availability across all four states for the full study period. Causal attribution is expressed with appropriate epistemic caution, and policy outcome relationships are presented as evidence-informed associations. Future panel econometric research at the district level can strengthen causal inference.

RESULTS

Area and Production Trends

The groundnut area in South India declined from approximately 7.1 million hectares in 1990 to 4.7 million hectares by 2010, before recovering modestly to approximately 5.2 million hectares by 2020. Despite this net area contraction, total production followed a markedly positive trend, increasing from 5.4 million tonnes in 1990 to a regional record of 10.2 million tonnes by 2020. This divergence between area and production is the defining structural feature of the sector's performance over the study period. Average yields improved from 763 kg/ha in 1990 to approximately 1,902 kg/ha by 2020, a 149 percent increase over three decades, indicating a decisive shift toward yield-intensive cultivation.

Table 1 presents the state-wise area and yield data for the anchor years 1990 and 2020. The data reveal the scale of productivity improvement across all four states and the persistence of Kerala's structural yield disadvantage. Tamil Nadu and Karnataka achieved the most dramatic yield improvements, driven by HYV adoption and extension support. Although Andhra Pradesh's yield gains were substantial, they were accompanied by a more pronounced area contraction than in other states.

Table 1: State-Wise Groundnut Area and Yield: 1990 vs. 2020

State	Area 1990 (m ha)	Area 2020 (m ha)	Yield 1990 (kg/ha)	Yield 2020 (kg/ha)
Andhra Pradesh	7.6	6	~1,000	~1,700
Karnataka	3.8	3.9	763	1,864
Tamil Nadu	3.4	3.7	763	1,595
Kerala	0.6	0.4	~650	~680

Source: DES (various years), NABARD (2017), and AMIC Outlook Reports (2022–2024).

MSP and Price Support Trends

The MSP for groundnut rose from approximately Rs. 980 per quintal in the mid-1990s to Rs. 6,783 per quintal for the 2024–25 season. Table 2 maps this trajectory against the major policy regimes of the study period, revealing that the most rapid nominal MSP growth occurred during the NMOOP (2005–2014) and NMEO (2015–2024) phases, reflecting deliberate policy efforts to incentivise domestic oilseed production and reduce import dependence.

Table 2: Groundnut MSP Trends by Policy Regime, 1995–2024

Year	MSP (Rs./qtl)	% Change (5-yr)	Policy Regime
1995	980	—	Pre-WTO
2000	1270	0.296	Post-WTO adjustment
2005	1520	0.197	TMOP launch
2010	2300	0.513	NMOOP
2015	4030	0.752	NMEO introduction
2020	5275	0.309	NMEO expansion
2024	6783	0.286	PM-KISAN era

Source: CACP (various years); Vikaspedia (n.d.) The Hindu (2024).

A notable regional divergence emerged in the relationship between the MSP and farm gate prices. In Tamil Nadu, market prices exceeded the MSP in the majority of observed seasons, indicating robust commercial demand and rendering the support price a non-binding floor. In Andhra Pradesh and parts of Karnataka, farmgate prices frequently fell below the MSP at harvest, necessitating PSS procurement activation, although procurement capacity constraints limited effective coverage in several seasons, particularly in 2020 and 2023–24.

State-Wise Performance

The four states examined in this study present markedly different groundnut cultivation trajectories, each shaped by a distinct combination of agro-climatic endowment, policy support intensity, and market integration. Andhra Pradesh and Karnataka, historically the dominant producers, experienced area contraction over the study period, offset only partially by yield improvements. Tamil Nadu, by contrast, maintained a broadly stable cultivated area while dramatically expanding output through productivity gains. Kerala's trajectory diverged most sharply from the regional trend, with both area and yield performance consistently below the South Indian average. The following state-level summaries elaborate on these contrasting patterns.

Andhra Pradesh:

The cultivated area declined from approximately 7.6 million hectares (1996) to 6.0 million hectares by 2020, driven by competitive displacement by cotton in the Deccan black-soil tracts and recurrent drought in Rayalaseema districts. Despite area contraction, yields improved substantially from approximately 1,000 kg/ha to 1,700 kg/ha, reflecting the partial success of ICAR variety dissemination and state seed distribution programmes. Structural price volatility (Reddy et al., 2020) has continued to undermine farmer confidence, making the state heavily reliant on PSS procurement in surplus years.

Karnataka:

The area fluctuated, peaking at approximately 4.5 million hectares in 2000 before stabilising at around 3.9 million hectares by 2020. Yield growth was the strongest among the four states in proportional terms (763 to 1,864 kg/ha), underpinned by the state's dense KVK extension network and a dynamic private certified seed industry. However, the progressive diversification of irrigated zone farmers toward horticultural and commercial crops has drawn the area away from groundnut, concentrating the crop in dryland interior districts (Nagaraj et al., 2016).

Tamil Nadu:

The area remained comparatively stable at 3.4–3.7 million hectares throughout the study period, while production grew from 2.6 to approximately 5.9 million tonnes. With approximately 38 percent of the groundnut area under irrigation and persistent above-MSP market prices sustained by export demand, Tamil Nadu exemplifies the positive alignment of infrastructure, technology, price signals, and market access. The Tamil Nadu Oilseeds Mission and TNAU's active extension linkages reinforced this advantage throughout the study period (Krishnamurthy and Venkatesan, 2019).

Kerala:

The area declined from approximately 0.6 to 0.4 million hectares, with yields stagnating at 650–700 kg/ha, the lowest in the region. Fragmented smallholding structures, high ambient humidity elevating disease pressure, and an agricultural policy environment prioritising permanent crops (coconut, rubber, spices) have collectively constrained groundnut viability. National Mission on Edible Oils interventions have made limited inroads, and cultivation is largely confined to short kharif windows in suitable coastal and midland districts of the state.

DISCUSSION

The results confirm a productivity-led growth paradox at the heart of South Indian groundnut cultivation over 1990–2024: aggregate output rose substantially despite net-area contraction. This pattern is broadly consistent with the Green Revolution productivity dynamics in Indian agriculture (Joshi et al., 2005), but is particularly notable in groundnuts, given the crop's predominantly rain-fed character and historically modest yield base. The post-2005 yield acceleration across all states closely maps onto the intensification of research and extension investment under NMOOP, suggesting a relationship consistent with the findings of Selvaraj and Ramasamy (2015).

The MSP system has played a structurally significant, albeit unevenly effective, role in shaping cultivation incentives. The consistent real-term upward trend in the groundnut MSP aligns with Birthal et al.'s (2010) finding that price signals are a significant determinant of oilseed area allocation. However, the documented gap between MSP announcement and reliable PSS procurement, particularly in Andhra Pradesh (Reddy et al., 2020), means that the incentive effect is substantially attenuated in states where farmgate-MSP inversions are recurrent. Tamil Nadu's

experience of persistent above-MSP market prices represents the most favourable scenario: the MSP functions as a credible floor without demanding extensive fiscal intervention, reinforcing cultivation stability through market confidence rather than government expenditure alone.

Input subsidies and irrigation represent the underappreciated pillars of South India's groundnut performance. Subsidised certified seed programs have been foundational to varietal turnover in Tamil Nadu and Karnataka, where state seed corporations maintained relatively consistent supply chains. Fertiliser subsidies for phosphorus and potassium, which are critical nutrients for groundnut pod development, reduced effective input costs during the high-inflation 2000s, sustaining crop profitability margins for smallholders. Irrigation investment has had a similarly important structural impact: the contrast between Tamil Nadu's 38 percent irrigated groundnut area and Andhra Pradesh's 20–25 percent coverage maps directly onto yield stability differentials, suggesting that public irrigation capital represents a durable form of production support that complements, but cannot substitute for, price mechanisms.

Research and extension investments emerged as the most consistently positive policy levers across all four states. The adoption of improved groundnut varieties, enabled by TNAU, UAS Bangalore, and the ICAR Directorate of Groundnut Research, is the primary proximate driver of yield improvement, corroborating Krishnamurthy and Venkatesan (2019). The productivity gap between Tamil Nadu and Kerala can be substantially explained by differential extension density and HYV adoption rates, highlighting that institutional depth matters as much as agronomic potential.

The outcomes of market reforms are more ambiguous. While e-NAM adoption and APMC amendments improved price discovery in well-connected mandis, the benefits did not reach smallholders uniformly (Acharya & Jogi, 2022). The development of Farmer Producer Organisations (FPOs) represents a promising structural response, but penetration in major groundnut-producing districts remains limited. Narayanan's (2023) finding that contract farming benefits primarily accrue to organised farmer groups—not marginal smallholders—is particularly pertinent given the acute farm size fragmentation across South India's groundnut belt.

The broader implications of India's edible oil strategy are significant. The NMEO's pivot toward oil palm expansion in regions where groundnut yields are structurally limited, including parts of Andhra Pradesh and Kerala, carries risks related to long gestation periods, water intensity, and market concentration. South India's groundnut sector, particularly Tamil Nadu's, demonstrates that sustained multi-instrument policy support can produce commercially viable oilseed systems without structural dependencies. A diversified oilseed portfolio, with groundnuts playing a central role alongside oil palm and sunflower, is likely to be more resilient and equitable than a monocrop-led intensification strategy.

The primary limitation of this study is its reliance on state-level aggregate data, which masks significant district-level heterogeneity in policy access, soil quality, and market integration. Future research using district-disaggregated panel datasets and quasi-experimental designs exploiting variations in PSS activation timing or KVK establishment would enable more precise causal identification. Increasing climate variability, particularly erratic monsoon onset intensifying in Andhra Pradesh and Karnataka, warrants explicit integration into future analytical models.

CONCLUSION

Over the three and a half decades from 1990 to 2024, government policies and price support mechanisms have been foundational to South India's groundnut sector, even though their design and effectiveness have varied considerably across states and institutional periods. The sector's defining achievement is a productivity-led transformation: output has grown substantially despite area contraction, enabled principally by improved varieties, better agronomic practices, and targeted institutional support. Tamil Nadu's sustained performance reflects the most coherent alignment of irrigation, extension investment, price support, and export market access—a model whose structural features merit study and selective replication in lagging states.

Four policy imperatives emerged from this analysis. First, MSP procurement delivery must be made more precise and accountable, with decentralised procurement infrastructure and real-time price information systems to prevent harvest season price collapses in surplus regions. Second, sustainable intensification should be promoted through climate-resilient varieties, water-use-efficient irrigation, and soil health management, particularly in the drought-exposed districts of Andhra Pradesh and Karnataka. Third, post-harvest storage and grading infrastructure require sustained investment to allow farmers to defer distress sales and capture better seasonal price. Fourth, Farmer Producer Organisation development in groundnut districts requires scaled, time-bound government support to provide smallholders with the collective bargaining capacity they currently lack. Pursuing these imperatives in a regionally differentiated manner, attentive to each state's agro-ecological profile and institutional capacity, offers the most credible pathway to sustaining and expanding South India's contribution to national oilseed security.

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