



# Beyond Cultivation: The Evolving Story of India's Oilseed Industry

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## 1. Introduction

Oilseeds are energy-rich foods containing high oil, fiber, vitamins, minerals, and essential fatty acids. Beside their dietary value, they are used in soaps, textiles, pharmaceuticals, and paints. Oilcakes and meals, by-products of oil extraction, serve as animal feed and manure. India ranks fourth globally in oilseed production, contributing 10 percent of the world's output. Major oilseed-producing states include Rajasthan, Madhya Pradesh, Gujarat, and Maharashtra.

Despite increased production since 1980, India imports nearly 60 percent of its edible oil due to rain-fed cultivation and rising demand. Challenges include lower profitability than cotton and maize, inadequate irrigation (less than 30 percent coverage), inefficient supply chains, and limited adoption of high-yielding varieties. Small farmers struggle with irrigation access, quality seeds, and marketing.

Government programs like the National Food Security Mission and National Mission on Edible Oils aim to boost productivity through financial aid, irrigation expansion, and sustainable farming. To achieve self-sufficiency, India must improve irrigation, enhance R&D, support local processing, and promote technology adoption. Addressing these challenges with targeted policies can reduce import dependence, improve farmer incomes, and strengthen India's oilseed sector.

## 2. Methodology and Data Collection

Secondary data on production, trade, and policies are sourced from IndiaStat, FAOSTAT, and policy

reports. The study covers the triennium ending TE 1980 to TE 2020, utilising a three-year moving average to smooth fluctuations caused by external factors like weather and market volatility.

Trend analysis evaluates changes in oilseed cultivation, production, and yield across India using statistical methods like growth rates and percentage change. It identifies long-term patterns, detecting consistent growth or decline. The percentage change formula,  $\% \text{change} = (\text{new value} - \text{old value}) / \text{old value} * 100$ , measures variations between TE 1980 and TE 2020. This approach provides insights into historical trends and policy impacts on India's oilseed sector.

## 3. Key Findings

Table 1 highlights significant regional variations in oilseed cultivation trends in India from TE 1980 to TE 2020, reflecting changes in area, production, and yield. The north saw a sharp area decline (-53.87 percent), but production rose (52.60 percent) due to higher yields (174.49 percent), with Haryana leading (969.84 percent production growth). Punjab and Uttar Pradesh saw steep area declines. The east showed moderate area expansion (30.38 percent) but strong production growth (165.22 percent), driven by West Bengal (866.95 percent). The West led with a 129.87 percent area and 458.38 percent production rise, mainly from Rajasthan (350.99 percent area growth).

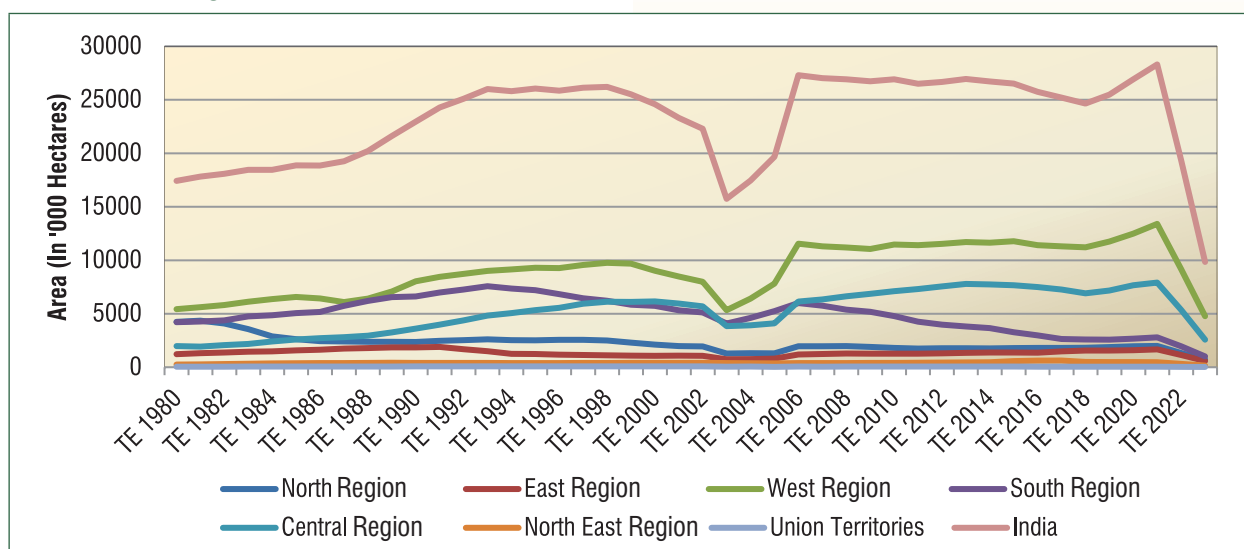
The Central Zone excelled in production (861.43 percent) and area (286.36 percent),

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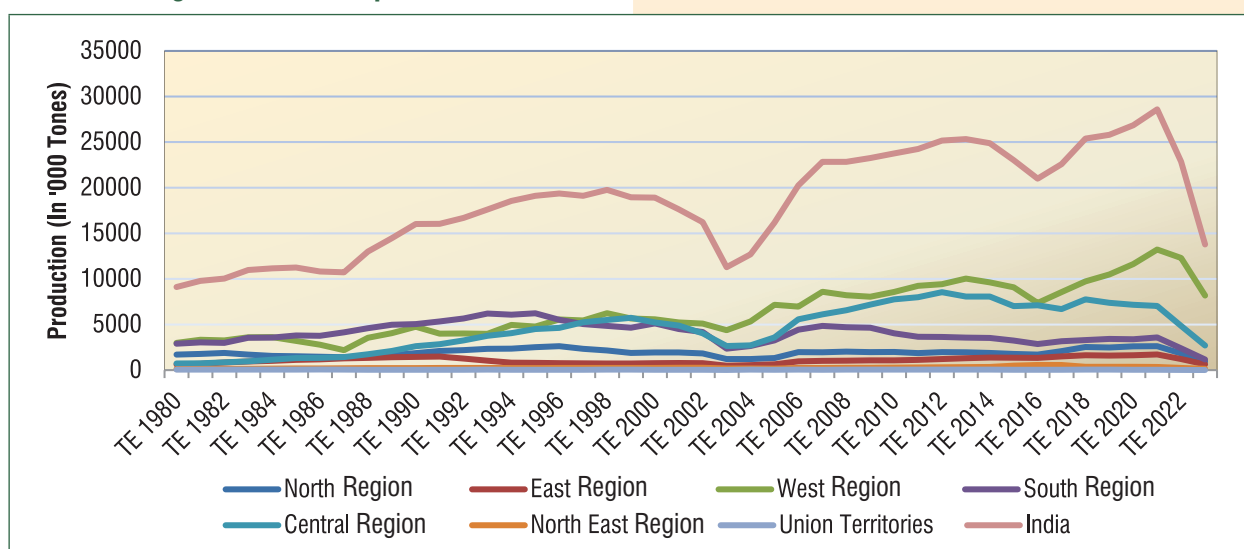
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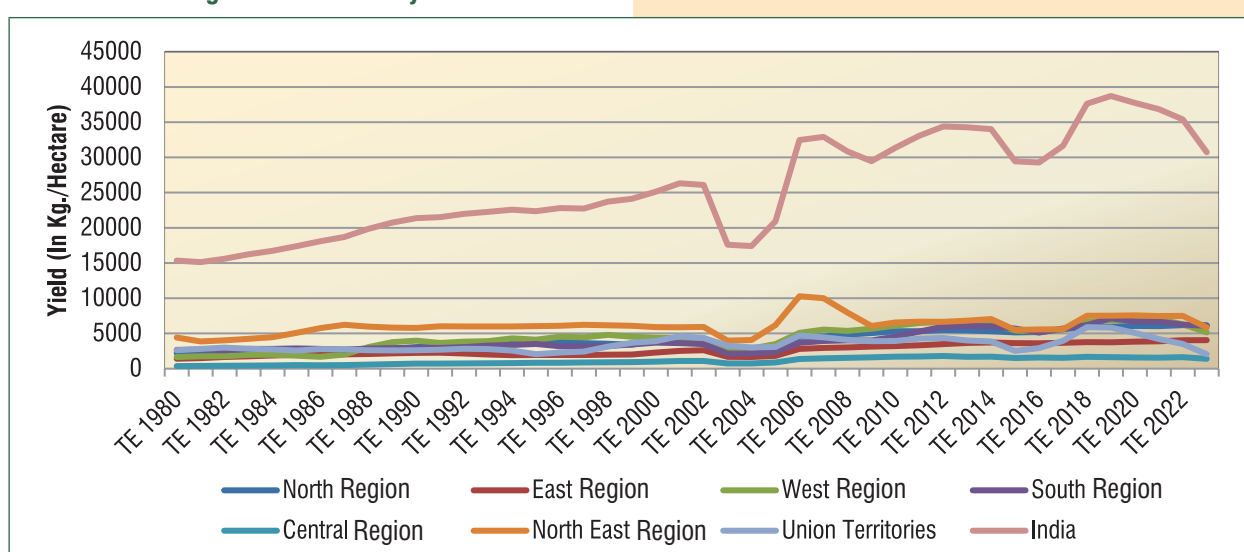
**Figure 1. Trends in area of oilseeds for all zones and union territories in India**



**Figure 2. Trends in production of oilseeds for all zones and union territories in India**



**Figure 3. Trends in yield of oilseeds for all zones and union territories in India**

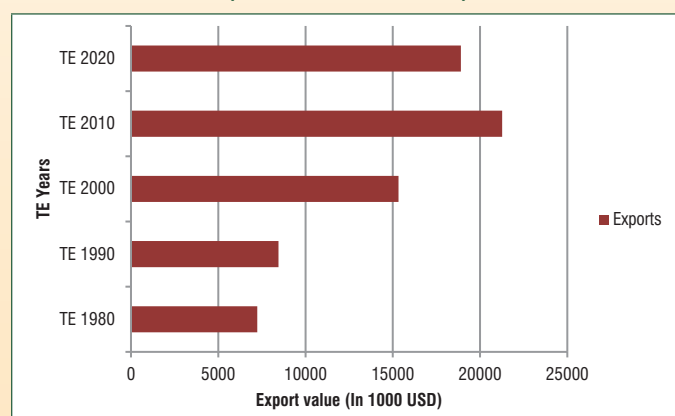


**Table 1. Trends in oilseeds area, production and yield for all zones and union territories in India**

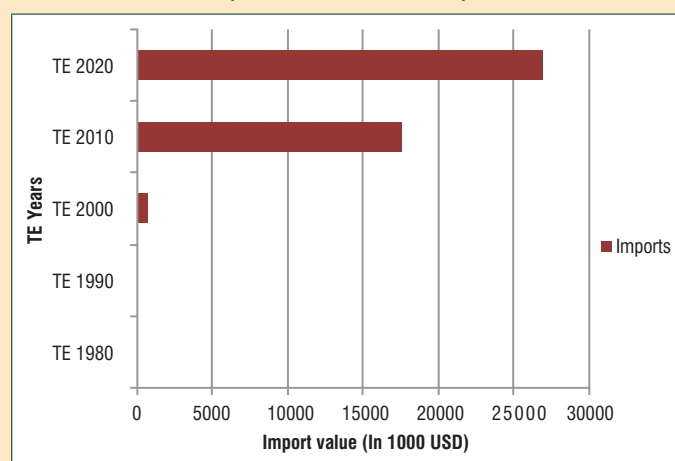
Region	TE 1980 to TE 2020 (% change)		
	Area (In '000 Hectares)	Production (In '000 Tones)	Yield (In Kg / Hectares)
<b>North</b>	<b>-53.87</b>	<b>52.60</b>	<b>174.49</b>
Himachal Pradesh	-52.90	-33.78	42.92
Punjab	-82.32	-65.45	95.29
Uttarakhand	0.00	0.00	0.00
Uttar Pradesh	-67.71	-11.34	176.29
Haryana	238.52	969.84	213.94
<b>East</b>	<b>30.38</b>	<b>165.22</b>	<b>171.31</b>
Bihar	-57.49	16.44	175.04
Orissa	-80.19	-72.65	37.09
Jharkhand	0.00	0.00	0.00
West Bengal	263.95	866.95	168.51
<b>West</b>	<b>129.87</b>	<b>458.38</b>	<b>251.96</b>
Rajasthan	350.99	1717.73	0.00
Gujarat	21.97	179.15	126.97
Goa	0.00	0.00	0.00
Maharashtra	137.27	516.33	159.16
<b>South</b>	<b>-36.83</b>	<b>-3.64</b>	<b>82.76</b>
Andhra Pradesh	-52.52	-34.64	39.67
Karnataka	-19.39	39.18	71.85
Kerala	-98.25	-98.19	9.66
Telangana	0.00	1.37	163.04
Tamil Nadu	-60.86	<b>880.88</b>	<b>334.67</b>
<b>Central</b>	<b>286.36</b>	861.43	162.33
Madhya Pradesh	274.95	0.00	0.00
Chhattisgarh	0.00	<b>215.00</b>	<b>71.47</b>
<b>North East</b>	<b>94.84</b>	89.90	38.69
Assam	37.09	0.00	0.00
Sikkim	0.00	3240.48	-33.79
Nagaland	3349.14	218.11	75.75
Meghalaya	80.97	1822.71	97.92
Manipur	890.28	599.17	423.42
Mizoram	100.56	284.54	54.92
Tripura	150.10	1698.06	83.15
Arunachal Pradesh	1127.93	<b>-3.74</b>	<b>93.72</b>
<b>Union Territories</b>	<b>-3.54</b>	0.00	0.00
Andaman and Nicobar Island	0.00	0.00	0.00
Chandigarh	0.00	-92.86	-21.07
Dadra and Nagar Haveli and Daman and Diu	-93.89	3307.50	467.32
Delhi	501.11	-6.44	-4.85
Jammu and Kashmir	-2.40	0.00	0.00
Ladakh	0.00	0.00	0.00
Lakshadweep	0.00	-77.25	94.48
Pondicherry	-88.35	<b>250.50</b>	<b>126.94</b>
<b>India</b>	<b>54.58</b>	<b>52.60</b>	<b>174.49</b>

while Tamil Nadu's growth (880.88 percent) offset southern losses. Varied trends in the northeast and union territories emphasize the need for targeted policies to address disparities and enhance self-sufficiency. Trade patterns indicate a shift from an export-driven sector to a net importer. In the 1980s and 1990s, India was a strong oilseed exporter, with stable export growth. However, by 2007, imports surpassed exports, signaling increasing domestic demand and production constraints (Figure 4). Import volumes continued to rise, peaking in 2008, 2009, 2016, and 2022, highlighting India's growing reliance on foreign edible oil supplies (Figure 5).

**Figure 4. Oilseeds export value in India (TE 1980 to TE 2020)**



**Figure 5. Oilseeds import value in India (TE 1980 to TE 2020)**



Regional analysis reveals stark differences in oilseed area, production, and yield (Table 1). While the West (129.87%) and Central (286.36%) Zones recorded significant expansions in cultivated area, the North (-53.87%) and South (-36.83%) Zones witnessed declines. Punjab and Uttar Pradesh saw the sharpest area reductions, while Rajasthan's area under oilseeds increased by 350.99 percent. The Central Zone led in

production growth (861.43%), with Chhattisgarh and Madhya Pradesh showing remarkable improvements. However, some regions, particularly the North East Zone (94.84%), faced lower growth rates in both area and yield. Notably, Delhi expanded its oilseed area by 501.11%, while Dadra and Nagar Haveli recorded a steep decline. These findings emphasize the need for targeted policy measures to address regional disparities and enhance India's oilseed sector.

#### 4. Policy Suggestions

The following policy recommendations are put forth based on the study's findings to provide targeted support to the oilseed industry.

**Increase Investment in Research & Development (R&D):** Boosting oilseed productivity requires significant R&D investment in developing high-yielding, drought-resistant varieties and modern agronomic practices. These investments should focus on both the public and private sectors, promoting innovations tailored to India's diverse agro-climatic conditions.

**Expansion of Irrigation Infrastructure:** Since the majority of oilseed crops are grown in rain-fed areas, expanding irrigation can dramatically improve yields. Programmes like the Pradhan Mantri Krishi Sinchai Yojana (PMKSY) should be extended to oilseed-growing regions. Providing micro-irrigation technologies like drip and sprinkler systems can also improve water use efficiency in oilseed cultivation.

**Incentives for Crop Diversification:** To make oilseed cultivation more attractive to farmers, the government should offer incentives and support for crop diversification. Higher minimum support prices (MSPs) for oilseeds, as well as subsidies for inputs like seeds, fertilizers, and machinery, can encourage farmers to shift towards oilseed production. This can be part of an enhanced oilseed production strategy under the National Mission on Edible Oils (NMEO).

**Promotion of Oilseed-Based Agro-Industries:** Setting up local oilseed processing units in major producing states can reduce post-harvest losses, add value for farmers, and boost rural employment. Public-private partnerships in processing infrastructure can enhance market access, strengthen the sector, and reduce import dependence through supportive government policies.

**Technology Transfer and Farmer Education:** To bridge the yield gap, it is essential to equip farmers with modern farming techniques and ensure the transfer of technology to rural areas. This can be done through extension services, training programs, and cluster demonstrations under existing schemes like the National Food Security Mission-Oilseeds & Oil Palm (NFSMOS& OP). The focus should be on precision farming, pest control, and the adoption of bio-fertilisers and pest management techniques.

**Strengthening Seed Supply Chains:** Ensuring the availability of quality seeds is critical for improving productivity. The government should encourage the development of seed hubs and facilitate the production and distribution of certified seeds to ensure that farmers have access to high-quality planting material.

**Promoting Sustainable Practices:** Promoting sustainable practices like conservation agriculture, crop rotation, and organic inputs can enhance soil health and climate resilience. The TRFA (Targeted Rice Fallow Area) scheme can boost oilseed cultivation in rice fallow lands. India's oilseed sector can meet edible oil demand, improve food security, raise farmer incomes, and reduce import dependence. Achieving this requires policy support for productivity, infrastructure, and farmer empowerment through technology and market access. A multi-pronged strategy with technological advancements, farmer incentives, and agro-industrial investment can drive self-sufficiency and strengthen India's agricultural economy.

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