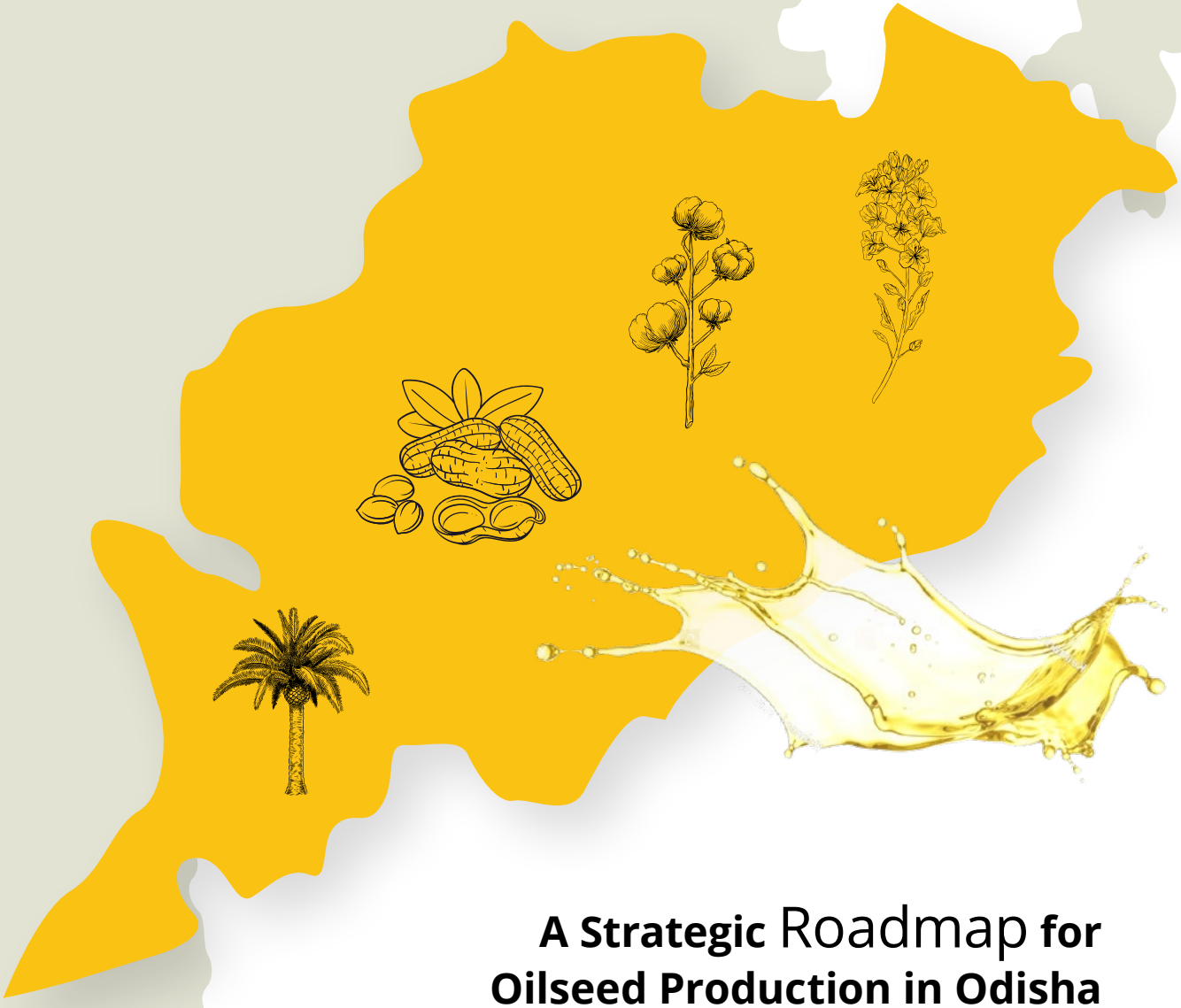
Solidaridad

# *From* Field *to* Fortune



## A Strategic Roadmap for Oilseed Production in Odisha

*From*

# Field

*to*

# Fortune

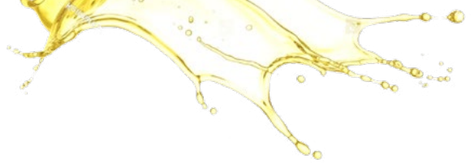
## A Strategic Roadmap for Oilseed Production in Odisha

Solidaridad

THE SOLVENT EXTRACTORS' ASSOCIATION OF INDIA

NARVOS

NATIONAL ALLIANCE FOR REGENERATIVE VEG OIL SECTOR



## ACKNOWLEDGEMENT



**Solidaridad Project Team:** Nitin Rao, Kritika Banerjee, Sumit Roy and Suresh Motwani

**Contact:** suresh.motwani@solidaridadnetwork.org

**Website:** www.solidaridadnetwork.org

**Editing:** Rituparna Sengupta

**Design:** An Eye On

# CONTENTS



भाकृअनुप - राष्ट्रीय जैविक स्ट्रैस प्रबंधन संस्थान
बरौंडा, रायपुर – 493225, छत्तीसगढ़, भारत
ICAR-NATIONAL INSTITUTE OF BIOTIC STRESS MANAGEMENT
Indian Council of Agricultural Research
(DARE, Ministry of Agriculture and Farmers' Welfare)
Baronda, Raipur - 493225, Chhattisgarh, India

**Dr. P. K. Rai**
Director

**MESSAGE**

Agriculture in India stands at a pivotal juncture where sustainability, productivity, and profitability must converge to ensure long-term food and nutritional security. Within this framework, oilseed crops hold strategic importance—not only for enhancing farmer incomes but also for reducing the nation's dependence on imported edible oils.

The publication, ***From Field to Fortune: A Strategic Roadmap for Oilseed Production in Odisha***, presents a comprehensive, research-driven analysis of Odisha's potential to emerge as a key contributor to India's oilseed economy. The roadmap effectively integrates scientific insights, policy recommendations, and field-level interventions to strengthen the entire value chain—from production and processing to market linkages.

This initiative resonates strongly with the national vision of achieving self-reliance in edible oil production through region-specific strategies, technological innovation, and climate-resilient approaches. Its emphasis on farmer collectivization, sustainable intensification, and investment promotion reflects a forward-looking model of agricultural transformation that can inspire similar initiatives across the country.

I commend Solidaridad for developing this visionary and strategic document that not only identifies key opportunities but also translates them into a clear and actionable roadmap for inclusive and sustainable growth. I am confident that it will serve as an insightful and practical reference for policymakers, researchers, and development practitioners committed to strengthening India's edible oil ecosystem and advancing the nation's journey toward self-reliance.

(P.K.RAI)

Mobile: +91 9549810486, 8209754716, Phone (O) : +91-771-2225352 / 2277333 Ext.: 615
Email: director.nibsm@icar.gov.in, director.nibsm@gmail.com, Website : https://nibsm.icar.gov.in



# FOREWORD

Oilseeds play a crucial role in strengthening India's edible oil security, enhancing farmer incomes, and ensuring sustainable growth across the agricultural value chain. Odisha, with its diverse agro-climatic zones, vast rice-fallow areas, and increasing focus on oilseed crops, holds strong potential to emerge as an important contributor to the country's edible oil ecosystem.

The study, "From Field to Fortune: A Strategic Roadmap for Oilseed Development in Odisha," provides a clear and well-organised analysis of the state's opportunities and challenges in scaling oilseed production. Its focus on improved seed varieties, timely availability of quality seed, adoption of scientific agronomic practices, and efficient utilisation of fallow lands is well aligned with national priorities for boosting domestic edible oil production.

The document further emphasises strengthening Farmer Producer Organisations, improving value-chain linkages, enhancing market access, and expanding extension support—critical components for achieving higher productivity, better farm-gate prices, and stronger rural enterprises. Such a structured, evidence-based roadmap offers valuable guidance for policymakers, state departments, research institutions, and industry partners working towards sustainable growth in the oilseed sector.

I also appreciate the efforts of Solidaridad for their role in consolidating field insights, stakeholder perspectives, and relevant data into a concise and practical roadmap. Their continued commitment to improving farmer livelihoods, strengthening value chains, and promoting sustainable agriculture is commendable and adds significant value to studies of this nature.

This report provides a timely contribution to informed planning and coordinated implementation. It will certainly support efforts to strengthen oilseed development in Odisha and contribute to building a more self-reliant and robust edible oil ecosystem for the country.

**Mr. Sanjeev Asthana**
President - The Solvent Extractors' Association of India (SEA)
CEO, Patanjali Foods Ltd.

# FOREWORD

It gives me great pleasure to present this insightful publication, “From Field to Fortune: A Strategic Roadmap for Oilseed Production in Odisha.” This timely and well-researched report highlights Odisha’s immense potential to emerge as a key hub for oilseed cultivation and edible oil production in India.

Odisha, endowed with 11.7 lakh hectares of rice fallows, ten agro-climatic zones, and emerging cotton and groundnut belts, is strategically positioned to become the next growth frontier for India’s oilseed sector. The joint study by Solidaridad Asia and SEA, “From Field to Fortune,” maps a clear pathway for a dedicated Odisha Edible Oil Mission (2025-30) to convert rice fallows into productive, climate-resilient oilseed areas.

The comprehensive structure of the report - encompassing landscape analysis, policy mapping, strategic interventions, and economic impact assessment - demonstrates a pragmatic and forward-looking approach to achieving self-sufficiency in edible oils. The proposed Odisha Edible Oil Mission offers a robust and actionable framework built on four essential pillars:

- expanding acreage through effective use of rice fallows,
- improving productivity through Good Agricultural Practices (GAPs),
- strengthening FPO and seed ecosystems, and
- developing post-harvest, processing, and investment infrastructure.

Equally commendable is the report’s emphasis on nutrition, employment, and environmental sustainability. By integrating oilseed cultivation with livelihood diversification, rural entrepreneurship, and climate resilience, the roadmap not only strengthens agricultural value chains but also advances multiple Sustainable Development Goals (SDGs).

In collaboration with NARVOS and Solidaridad, The Solvent Extractors’ Association of India (SEA) is proud to support initiatives that strengthen India’s edible oil ecosystem through innovation, inclusivity, and partnerships. I am confident that the vision outlined in “From Field to Fortune” will inspire collective action and position Odisha as a model for sustainable and inclusive growth in the oilseed sector.

**Dr. B. V. Mehta**
Executive Director
The Solvent Extractors’ Association of India



# FOREWORD

141 lakh tonnes. This is the distance Atmanirbhar India has to travel to plug the projected demand and supply gap in edible oil by 2030. Export curbs every now and then, and disruptions in the wake of Russia-Ukraine conflict have shown how quickly global tremors become retail pain.

India’s growth aspirations are tied to its ability to achieve self-sufficiency in edible oil and slash reliance on imports. This, as traditional hubs in western India like Maharashtra and Gujarat are over-saturated in terms of land under edible oil cultivation. This is why the potential in the east needs to be tapped.

The report, “From Field to Fortune: A Strategic Roadmap for Oilseed Production in Odisha”, demonstrates a strong case for Odisha to emerge as a frontier oilseed hub in India. It enjoys an edge with 10 distinct agro-climatic zones that are conducive to cultivation of a variety of oilseeds, and proximity to major consumption centres like Kolkata, Chennai and Visakhapatnam, as well as export markets.

To policymakers, the report advocates a dedicated, five-year Edible Oil Mission. It presents an actionable roadmap to expand the state’s oilseeds acreage by using the rice fallow area to grow short-duration oilseeds in Rabi, and improve production through access to improved and certified seeds and adoption of good agricultural practices under the proposed Odisha Edible Oil Mission.

The gains are significant and long-lasting.

Projected increase in farmer income by almost double through intercropping and cultivating oilseeds in rice fallow areas. A boost to local employment, with an additional 363 lakh man-days of direct employment in the farm sector and 0.8 lakh man-days in the processing sector per year.  Stimulation for the state economy with 32 times the initial investment, over a period of five years, through backward and forward linkages.

Reducing import dependency and helping bridge approximately 5.4 percent of the projected national edible oil demand-supply gap by 2030. Improved nutritional outcome for agricultural households through increased income and access to affordable edible oil. And, the shift away from monocropping helping in long-term sustainability and meeting the government’s objective of increased cropping intensity and crop diversification.

I am confident this report will inspire engagement and collaboration between different stakeholders in the edible oil sector to create a self-sufficient, scalable and sustainable edible oil ecosystem in Odisha, and contribute to building a self-reliant India.

**Shatadru Chattopadhayay**
Managing Director
Solidaridad Asia
18 November 2025

# EXECUTIVE SUMMARY

## THE CONTEXT

The consumption of oilseeds and edible oils grew at a compound annual growth rate (CAGR) of 3.2 percent between 2013-14 and 2022-23, driven by population growth, urbanization and rising incomes. However, with domestic production meeting only 44 percent of the demand, there is a significant reliance on imports, with the demand-supply gap expected to reach 141 lakh tonnes by 2030.

Odisha can produce an additional 35.6 lakh tonnes[a] of oilseeds by 2030, contributing an additional 7.7 lakh tonnes of edible oil to help meet 5.4 percent of India's edible oil demand-supply gap.

Odisha offers an environment conducive to the cultivation of a variety of oilseeds, due to its 10 distinct agro-climatic zones and the state's cropping patterns.

Odisha's strategic location along the eastern economic corridor allows it proximity to major consumption centres such as Kolkata, Chennai and Visakhapatnam, as well as export markets including Bangladesh.

Odisha offers a cost-effective alternative with untapped processing capacity and rising local demand, compared to oversaturated hubs like Gujarat or Maharashtra, making it attractive for both domestic processors and export-oriented units.

## ODISHA'S GROWTH PATHWAY

A focused and multidimensional strategy, bundled as *Odisha Edible Oil Mission,* can unlock the untapped potential of the oilseeds sector.

### ODISHA EDIBLE OIL MISSION

A dedicated *Odisha Edible Oil Mission* under the Directorate of Agriculture and Food Production for a period of 5 years, with an outlay of INR 1,525 crore, can increase edible oil production and achieve self-sufficiency. The focus could be on key oilseed crops including groundnut, rapeseed and mustard, sunflower and oil palm with targeted interventions in secondary oilseeds such as rice bran and cottonseed. The *Edible Oil Mission* will entail:

### EXPANSION OF OILSEED ACREAGE

A 50 percent allocation of the available 11.7 lakh hectares of rice fallow area[1] could increase oilseeds' acreage by 5.9 lakh hectares within the state. Additionally, intercropping of oilseeds with other crops like *moong*, maize, cotton and pigeon pea could expand the acreage, adding another 3.9 lakh hectares for focus oilseeds like groundnut and sunflower.

### INCREASED PRODUCTION THROUGH INTENSIFICATION

With 58 percent lower yield than the national level and that of frontier states, Odisha has significant potential to improve oilseed production to match frontier states such as Tamil Nadu, Gujarat, West Bengal through increased seed replacement rate and promotion of good agricultural practices (GAPs).

### FOCUS ON LIMITED OILSEEDS

The focus on limited oilseed crops (groundnut, mustard and sunflower among traditional oilseeds, oil palm, rice bran and cotton seed among secondary oilseeds) will ensure efficient use of resources and leverage existing strength in production and research.

---

[a]This includes production of relevant traditional oilseeds (rapeseed and mustard, groundnut, sunflower) as well as secondary oilseeds (oil palm, rice bran, and cottonseed).

### CLUSTER APPROACH TO CULTIVATION

A cluster-based approach for smallholder farmers would improve production and profitability by providing focused support, extension services, and economies of scale. These clusters can also use common infrastructure to sort the produce, ensuring that only high-quality products are processed, which increases the industry's competitiveness.

### INCREASED SEED PRODUCTION AND ENSURING TIMELY SUPPLY

The current demand and supply gap of around 15,000 tonnes (i.e. 79 percent of the total seed demand), can be increased through promotion of seed entrepreneurs within Seed Village Programs and/or leveraging Farmer Producer Organizations (FPOs). Additionally, collaborating with private sector entities and leveraging the expertise and resources available at agricultural universities/research centres can boost the production of stress-resistant and high-yield seed varieties and seed production capabilities.

### STRENGTHENING THE FPO ECOSYSTEM

The creation of 100–150 FPOs in identified oilseed-growing clusters over the next five years will help increase quality seed production and meet the gap in seed demand. Select FPOs could be developed as end-to-end value chain managers, capable of handling production, aggregation, processing, branding and marketing of edible oils.

### NEW STORAGE INFRASTRUCTURE

A minimum of 10 percent of the 318 existing warehouses operated by Primary Agricultural Cooperative Societies (PACS) and MARKFED need to be upgraded and earmarked for oilseed storage to meet the storage capacity of at least 4 lakh tonnes by 2030. The warehouses should be registered with the Warehousing Development and Regulatory Authority (WDRA) to enable warehouse receipt financing, allowing farmers to access credit against their stored produce. The state government's Financial Assistance to Cold Storage Scheme aims to establish at least one modern cold storage facility in each of the state's 58 subdivisions, allowing 30 cold storage facilities to be prioritized in oilseed clusters, to store oilseeds and value-added products like cold-pressed oils.

### EFFECTIVE AND EFFICIENT SUPPLY CHAIN MODELS

This is critical to improve farmer incomes, enhance oil availability and promote value addition at the grassroots level. Some of the potential models are:

- **Hub and Spoke model:** The model centers on a hub managed by either a federation of FPOs or an FMCG company, streamlining production and distribution.

- **Microenterprise-based Cooperative model:** The model supports small-scale oilseed processing units established by individual entrepreneurs, lead farmers or FPOs which drive local value addition, generate employment and promote entrepreneurship within communities.

### DEDICATED INVESTMENT CELL

The establishment of a Dedicated Investment Promotion Cell (Edible Oil Cell) within the Industrial Promotion & Investment Corporation of Orissa Limited (IPICOL) will unlock private sector participation, attract capital and build processing and value-addition infrastructure across the state. The categorization of edible oil as a 'thrust sector' under the State Industrial Policy and the Edible Oil Cell could fast-track approvals for land allotment, regulatory clearances and incentives under the Odisha Food Processing Policy and MSME frameworks.

### ESTABLISHMENT OF CENTRE OF EXCELLENCE AND INCUBATION CENTRE

The establishment of a Centre of Excellence and Incubation for Oilseeds will promote R&D in the development of high-yielding, stress-resistant oilseed varieties suited to Odisha's agro-climatic zones and for piloting and demonstration of scientific farm practices. The Incubation Centre could also promote sustainable agricultural practices and incubate agri-tech startups working on oilseed cultivation, precision farming, value-added products and processing technologies.



### INTERNATIONAL PARTNERSHIPS FOR TECHNICAL COLLABORATION

Odisha could pursue strategic technical partnerships with frontier countries like the Netherlands and Brazil. By integrating global innovations into local systems, Odisha can significantly improve oilseed yields, reduce production costs and make its edible oil sector globally competitive.

### CLIMATE RESILIENCE AND OILSEEDS

Risk reduction involves using geospatial tools to create vulnerability maps and promoting adaptive practices in vulnerable areas, alongside infrastructure improvement. Preparedness emphasizes strengthening weather advisory systems and establishing local preparedness committees to deliver timely information and training on climate-smart agronomy. Response and recovery should prioritize expansion of weather-indexed insurance coverage under Pradhan Mantri Fasal Bima Yojana (PMFBY) and rapid damage assessment using technology for processing of claims, providing contingency capital and minimizing losses through compensation towards cost of inputs in case of crop failure.

## THE EDIBLE OIL MISSION'S GAINS FOR ODISHA

### INCREASING FARMER INCOME

Cultivating oilseed crops offer returns of up to 2.3 times the investment, compared to a return of 1.7 times from traditional crops like paddy. Hence, on average, farmer income could double by intercropping and cultivating oilseeds in rice fallow areas, increasing it from INR 60,000 to INR 121,000–185,000 (101 percent–209 percent), depending on the oilseed crop.

### STIMULATING STATE ECONOMY

The government investment of INR 1,525 crore is anticipated to catalyze additional private investments and stimulate the state's economy through backward and forward linkages. This is projected to generate an output impact of approximately INR 49,410 crore over a period of five years, 32 times the initial investment, and contributes an additional 0.2–1.3 percent to Odisha's Gross State Domestic Product annually. Additionally, the output impact is projected to contribute approximately INR 6,770 crore over the 15-year lifecycle of the processing plants to the state exchequer, 4.4 times the return on the initial investment.

### BOOSTING LOCAL EMPLOYMENT

Expanding oilseed cultivation and edible oil processing can significantly boost local employment, generating an additional 363 lakh man-days of direct employment in the farm sector and 0.8 lakh man-days in the processing sector per annum, over a period of five years.

### REDUCING IMPORT DEPENDENCY

Expanding oilseed cultivation and improving yields could lead to an additional 7.7 lakh tonnes of edible oil production by 2030, helping bridge approximately 5.4 percent of the projected national edible oil demand-supply gap by 2030.

### IMPROVING NUTRITIONAL OUTCOMES

Diversification into oilseed crops can significantly improve nutritional outcomes of agricultural households as well as people at the bottom of the pyramid, through increased income and affordable access to edible oil.

### BENEFITING THE ENVIRONMENT

Expanding oilseed cultivation will help increase cropping intensity, enhance soil quality, reduce water use and lead to a shift away from monocropping, helping in long-term sustainability and meeting the government's objective of increased cropping intensity and crop diversification.

# 1

# ODISHA

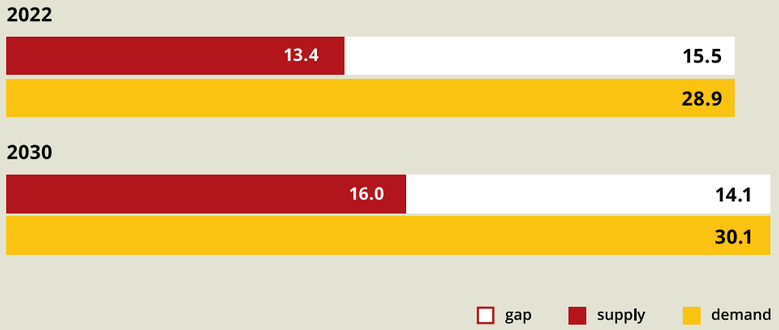
## INDIA'S BEST BET FOR OILSEED AND EDIBLE OIL PRODUCTION

# AT A GLANCE

- **Odisha's strong cultivation potential:** Odisha is highlighted as an ideal location for oilseed production, possessing **10 distinct agro-climatic zones** suitable for crops like groundnut, mustard, and sesame. The state's productivity for **groundnut and sunflower** is at par with or exceeds the national average.
- **Growth in secondary oil sources:** The state produces a significant number of secondary sources of vegetable oil, such as rice bran (being the fifth largest rice producer) and cottonseed (ranking ninth in cotton production), which can help meet increasing demand.
- **Robust state economic and policy support:** Odisha has a strong fiscal position, growing at a higher rate than the national average, allowing it to offer policy-linked incentives (like capital subsidies and tax breaks) and "plug-and-play" infrastructure through Mega Food Parks.
- **Strategic location and ecosystem advantages:** Odisha's location along the eastern economic corridor provides strategic proximity to major consumption markets (Kolkata, Chennai) and multiple ports (including Paradip) for trade.
- **A robust R&D ecosystem:** Odisha University of Agriculture & Technology, ICAR-KVKs can help strengthen innovation and farmer productivity.
- **Stable but shifting oilseed acreage:** Odisha's total oilseed acreage showed a marginal decline from 6 lakh hectares in 2019–20 to 5.5 lakh hectares in 2023–24. Within this, groundnut dominates the composition (approximately 37.2 percent of acreage in 2023–24), but sunflower acreage saw the fastest growth, rising at a 7.4 percent CAGR between 2019–20 and 2023–24.
- **Production growth led by groundnut:** Total oilseed production grew at a 1.4 percent CAGR, from 5.7 lakh tonnes in 2019–20 to 6.0 lakh tonnes in 2023–24. Groundnut is the dominant crop, contributing 70.4 percent of the state's total oilseed production, followed by rapeseed and mustard (9.5 percent).
- **Oilseed yield:** The overall oilseed yield improved from 0.9 quintals per hectare in 2019–20 to 1.1 quintals per hectare in 2023–24, at a 3.8 percent CAGR. However, sunflower yield sharply declined at a −5.5 percent CAGR.
- **Promising secondary oil sources and oil palm expansion:** Odisha is the fifth largest rice producer and ninth largest cotton producer in India, offering significant potential for rice bran and cottonseed oils. Furthermore, oil palm production demonstrated a remarkable 24.1 percent CAGR between 2014–15 and 2023–24, with the state targeting an additional 9,000 hectares by 2025–26.

## 1.1 OVERVIEW: EDIBLE OIL IN INDIA

India's diverse agro-ecological zones support the cultivation of a wide range of oilseed crops, ranking second after food grains, both in area and production. Currently, India grows nine annual oilseed crops – seven edible oilseeds (groundnut, rapeseed and mustard, soybean, sunflower, sesame, safflower) and two non-edible oilseed crops (castor and linseed). However, there is a substantial gap between domestic demand and supply of edible oils, which is expected to reach 141 lakh tonnes in 2030.



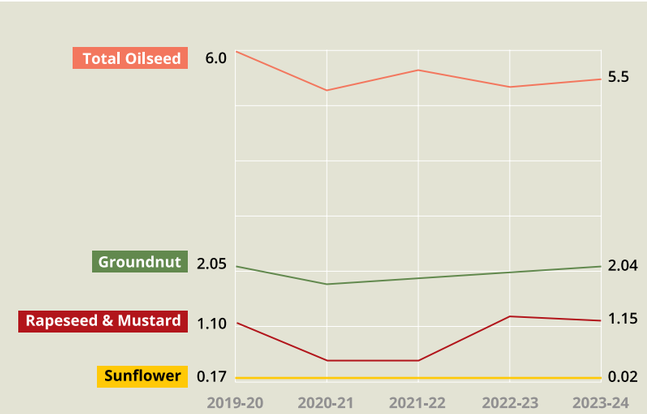

*Source: Agriculture Statistics at a Glance, Government of India, NITI Aayog Report 2024*

*Figure 1: Demand-Supply Gap in Edible Oil (in million tonnes)*

## 1.2 ODISHA: OILSEEDS OVERVIEW

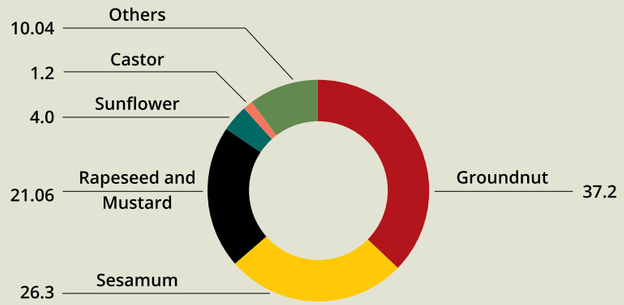
### 1.2.1 OILSEEDS

Odisha's oilseed acreage of 5.5 lakh hectares in 2023–24 is a marginal decline from 6 lakh hectares in 2019–20. Groundnut has seen a marginal decline of 0.1 percent over the past five years, while oilseed crops like rapeseed and mustard have seen a growth of acreage at a CAGR of 1 percent and sunflower has seen a more significant rise in acreage with a CAGR of 7.4 percent between 2019–20 and 2023–24.




*Source: Directorate of Agriculture & Food Production, Government of Odisha.*
*Note: Others include Niger (9.3 percent), Linseed (1.1 percent), and Safflower (0.1 percent)*

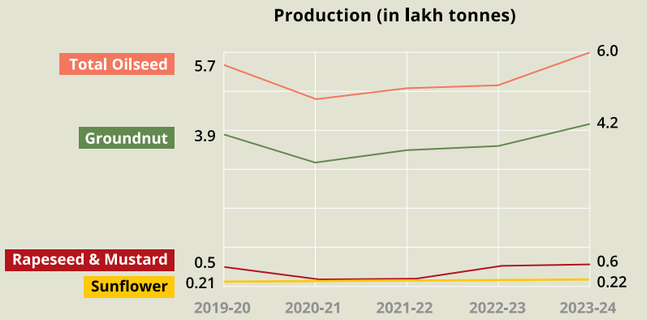
*Figure 2: Acreage under Oilseeds (in lakh hectares)*




*Source: Directorate of Agriculture & Food Production, Government of Odisha.*
*Note: Others include Niger (9.3 percent), Linseed (1.1 percent), and Safflower (0.1 percent)*

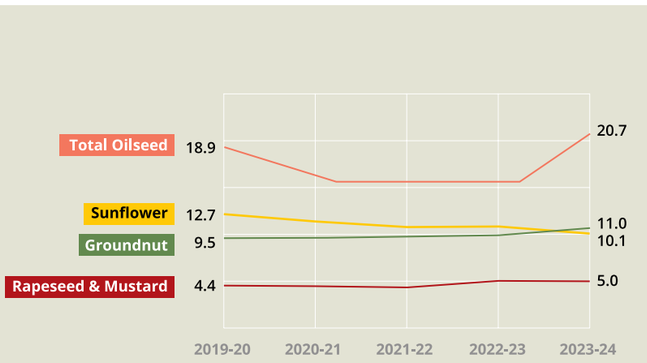
*Figure 3: Composition of Oilseeds Acreage (%) – 2023-24*

The total oilseed production has increased from 5.7 lakh tonnes in 2019–20 to 6 lakh tonnes in 2023–24, at a CAGR of 1.4 percent. Groundnut contributed 70.4 percent of the total oilseed production in the state, growing at a CAGR of 2.2 percent. Rapeseed and mustard have contributed 9.5 percent, growing at a CAGR of 4.4 percent, and sunflower contributed 3.7 percent of the production, growing at a CAGR of 1.4 percent between 2019-20 and 2023-24. Together, they contributed to over 80 percent of the state's oilseed output.




*Source: 5 Decades of Odisha Agriculture Statistics – 2020, Directorate of Agriculture & Food Production, Government of Odisha.*
*Note: Others include Niger (9.3 percent), Linseed (1.1 percent), and Safflower (0.1 percent)*

*Figure 4: Oilseed Production and Composition in Odisha*



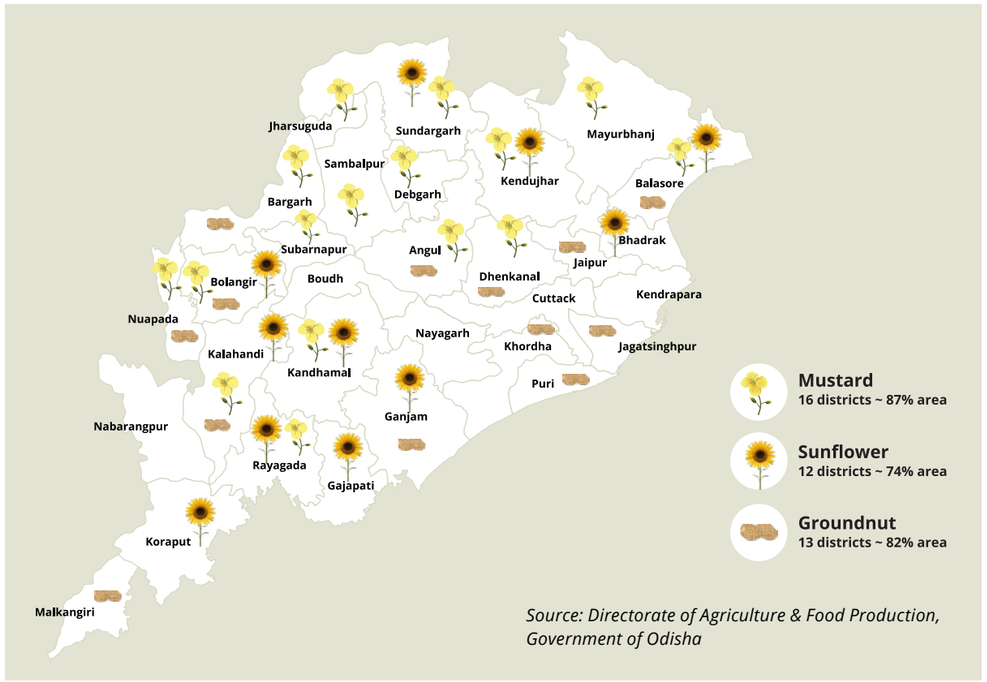

*Source: 5 Decades of Odisha Agriculture Statistics – 2020, Directorate of Agriculture & Food Production, Government of Odisha*

*Figure 5: Oilseeds Yield (in Qtls/Ha)*

There has also been an improvement in the yield, increasing from 0.9 quintals per hectare in 2019–20 to 1.1 quintals per hectare in 2023–24, at a CAGR of 3.8 percent. The productivity of groundnut has grown at a CAGR of 2.3 percent, while rapeseed and mustard have witnessed an increase at a CAGR of 3.3 percent. In contrast, sunflower has experienced a sharp deceleration at a CAGR of – 5.5 percent between 2019–20 and 2023–24 (see Figure 5).

### 1.2.2 DISTRICT-WISE MAPPING

In Odisha the acreage of oilseeds varies across districts, ranging from 0.4 lakh hectares in Ganjam to 0.02 lakh hectares in Bhadrak, while the production ranges from 0.5 lakh tonnes in Kalahandi to 0.02 lakh tonnes in Bhadrak. Ganjam, Kalahandi, Angul, Dhenkanal and Keonjhar are the top five districts in terms of oilseeds acreage, collectively covering 1.5 lakh hectares, constituting 33 percent of the total acreage. Similarly, Kalahandi, Bargarh, Ganjam, Malkangiri, and Dhenkanal lead in oilseed production, producing 2.4 lakh tonnes collectively, accounting for 39.2 percent of the total production.




*Source: Directorate of Agriculture & Food Production, Government of Odisha*

*Figure 6: District-wise Coverage of Oilseeds*

#### SOYBEAN CULTIVATION IN ODISHA

Soybean was cultivated on a small scale in Odisha in the early 2000s but has ceased completely in the subsequent years since 2004. Reviving soybean cultivation confronts several challenges due to decades of dormancy and lack of knowledge about the good practices. This is coupled with insufficient government support and inadequate marketing and processing facilities. Soybean also has relatively low oil content with solvent extraction yielding around 18 percent and *Kachi Ghani* yielding only 11 percent. The value and commercial gain of soybean are mainly derived from soybean meal and various other products like tofu, milk, sauce, etc. Being a *Kharif* crop, soybean also competes with paddy, 60–70 percent of which is procured by the government. Additionally, the state government has also announced an input subsidy of INR 800 per quintal over and above the Minimum Support Price (MSP) of INR 2,300, effectively increasing it to INR 3,100 per quintal since the *Kharif* market seasons of 2024. This makes it difficult to induce farmers to shift from paddy to soybean.

# 1.3 SECONDARY OIL SOURCES

## 1.3.1 OIL PALM

Oil palm production is still in its early stages in the state, occupying 8,867 hectares as of 2023-24, i.e., ~2 percent of the total area under oil palm cultivation in the country. However, approximately 34,000 hectares can be brought under cultivation.

Odisha has been promoting oil palm under various programs including under the National Mission on Edible Oils – Oil Palm (NMEO-OP). The state government of Odisha has entered into Memorandums of Understanding (MoUs) with 11 private companies, including national entities such as Godrej Agrovet, Ruchi Soya Industries, and 3F Oil Palm Agrotech Ltd to promote oil palm cultivation and processing. The aim is to expand cultivation, targeting an additional 9,000 hectares by 2025–26. Efforts are also underway to converge these plantation activities with MGNREGS to overcome shortage of labor.

Between 2014–15 and 2023–24, oil palm production grew at a remarkable CAGR of 24.1 percent, increasing from 4.4 thousand tonnes to 30.7 thousand tonnes, with an expansion in the cultivation area at a CAGR of 5 percent, increasing from 5.7 thousand hectares to approximately 8.9 thousand hectares.

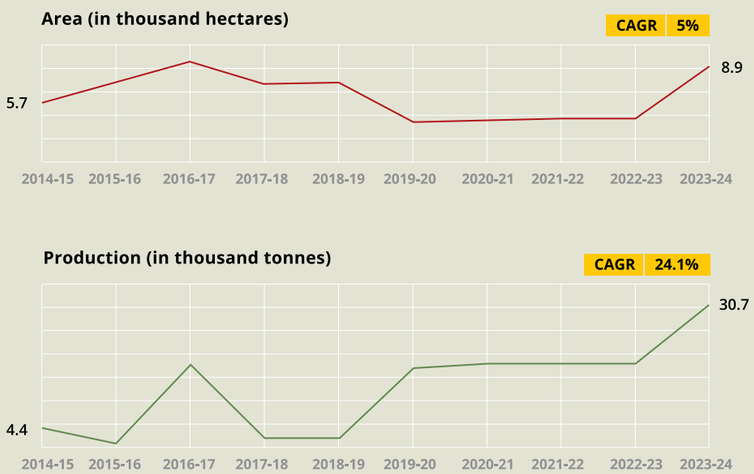



*Figure 7: Time-trends and Oil Palm Crop*

## 1.3.2 RICE BRAN AND COTTONSEED

Secondary edible oils, sourced mainly from rice bran and cottonseed, represent a significant portion of India's vegetable oil supply, contributing about 36 lakh tonnes (27 percent of total production) in 2023–24, with cottonseed oil (31.4 percent) and rice bran oil (28.3 percent) dominating this segment. The opportunity is substantial, as both rice bran and cotton contain 15–20 percent oil.

As of 2023-24, Odisha ranks fifth in rice production (8 percent national share) and ninth in cotton production (9 percent national share). Paddy is cultivated on 40.9 lakh hectares, accounting for 44.7 percent of the state's gross cropped area (GCA), while cotton is grown on 2.4 lakh hectares, accounting for 2.6 percent of the GCA, concentrated in the Bolangir, Kalahandi, and Rayagada districts. The production of both these crops has shown substantial growth between 2019–20 and 2023–24, with cotton increasing at a CAGR of 9.1 percent and paddy witnessing 4.3 percent CAGR. There are 11 rice bran oil (RBO) processing entities operating in Odisha currently, with a potential to further enhance operations.

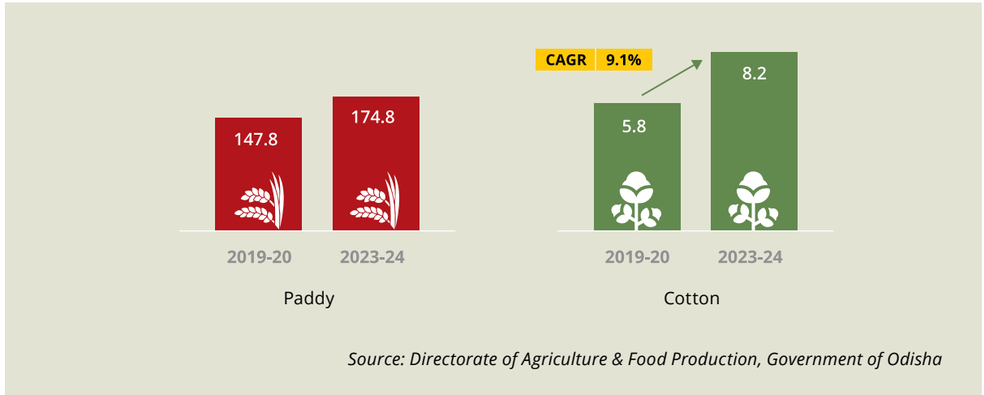



*Figure 8: Production of Paddy & Cotton (in lakh tonnes)*

# 1.4 PROCESSING CAPACITY

The number of food processing enterprises in Odisha is comparatively lower than several other states like Andhra Pradesh, Tamil Nadu, Telangana, Punjab and Maharashtra. Based on Annual Survey of Industries (ASI) 2022–23, Odisha has 1,263 food processing enterprises, accounting for 3.5 percent of total functional food processing enterprises in India, with a potential to grow further.

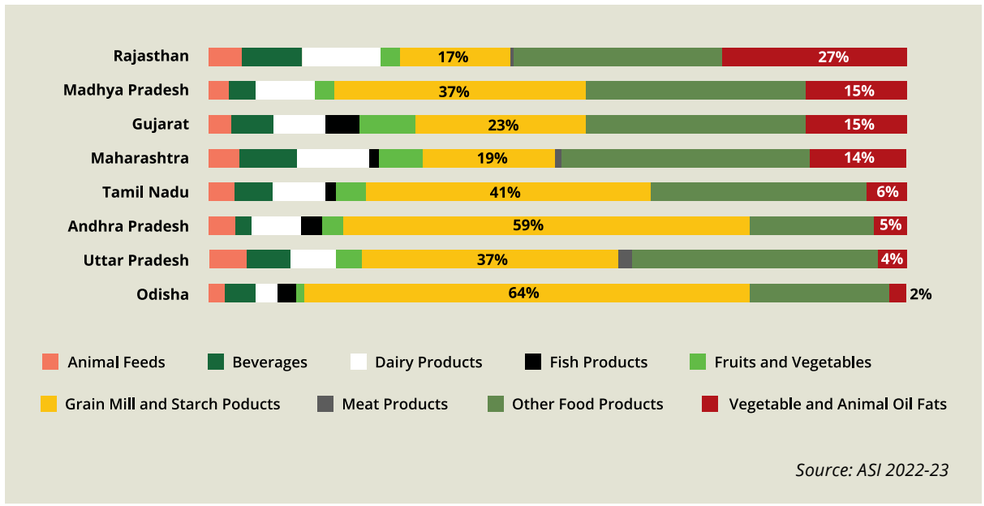



*Figure 9: Share of Functional Factories across Sub-Sectors (percent) – 2022-23*

Of 1,263 functional food processing enterprises, 2 percent (26 enterprises in the organized sector and 252 in the unorganized sector) are engaged in edible oil production in the state according to the Annual Survey of Industries and the Annual Survey of Unincorporated Sector Enterprises (ASUSE). During 2022–23, these enterprises collectively produced approximately 33,000 tonnes of edible oil within the state, with groundnut oil as the prominent product, followed by sunflower oil.

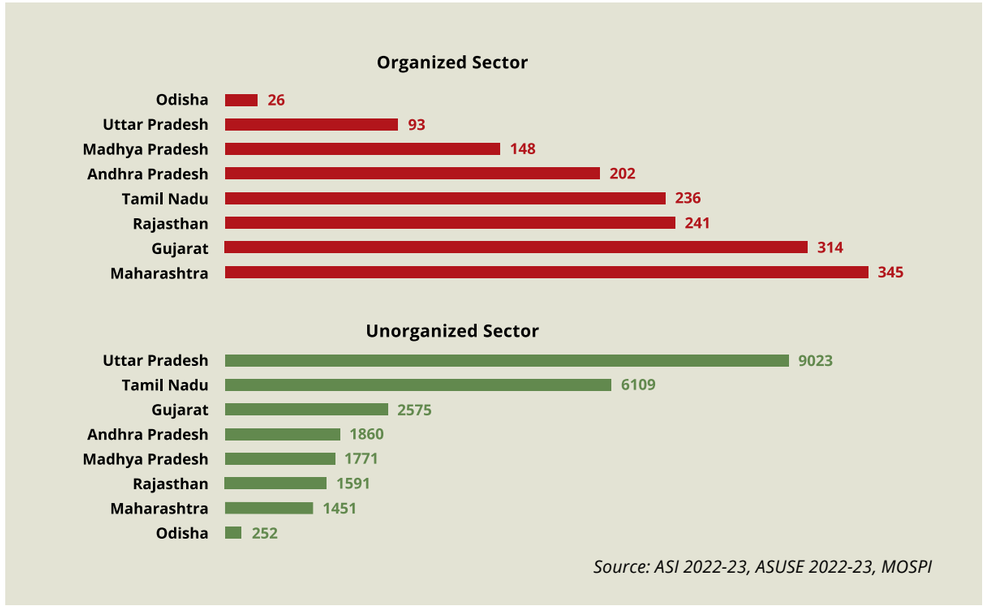



*Figure 10: Vegetable and Animal Oil Factories*

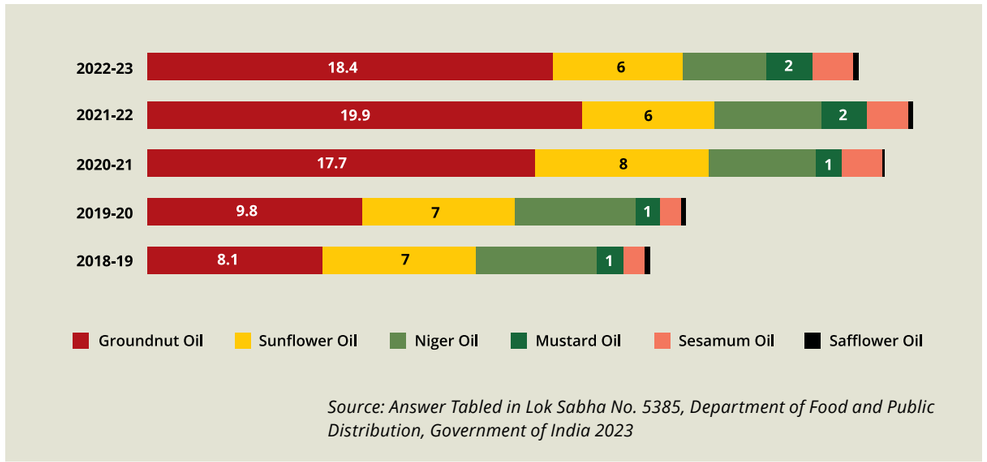



*Figure 11: Edible Oil Production in Odisha (in thousand tonnes)*

# 1.5 BLUEPRINT FOR SUCCESS

**ODISHA HAS 10 DISTINCT AGRO-CLIMATIC ZONES, MAKING IT HIGHLY CONDUCIVE FOR CULTIVATION OF OILSEEDS.**

With a current oilseed acreage of 5.5 lakh hectares, the state produces 6 lakh tonnes of oilseeds, of which groundnut accounts for 37 percent, followed by sesame (26 percent), mustard (21 percent), sunflower (4 percent), etc. While the overall productivity of oilseeds is lower than the national level, the state's productivity for groundnut and sunflower is at par with or even exceeds the national average, highlighting the potential for growth and development in the oilseed sector.

**ODISHA GROWS A SIGNIFICANT NUMBER OF SECONDARY SOURCES OF VEGETABLE OIL, SUCH AS OIL PALM, RICE BRAN AND COTTONSEED, DUE TO THE STATE'S CROPPING PATTERNS.**

Odisha is the fifth largest rice producer in the country (174.8 lakh tonnes) and ranks ninth in cotton production (8.2 lakh tonnes) as of 2023–24. The production of secondary sources can meet the increasing demand for vegetable oils, supported by several state initiatives to promote crop diversification targeting cash crops including oilseeds.

**ODISHA IS GROWING AT A HIGHER RATE THAN THE ALL-INDIA GROWTH RATE.**

The state has been able to maintain revenue surplus, low fiscal deficit and low debt, enabling it to allocate higher public investments and offer policy-linked incentives to industries in priority sectors without endangering fiscal sustainability. The sector can potentially benefit from this flexibility through capital subsidies, tax breaks and infrastructure support.

It has also established Mega Food Parks and Agro-Processing Clusters with ready-to-use infrastructure, with these plug-and-play facilities supporting cluster-based development and making the supply chain and logistics more efficient while lowering the barriers for new businesses.

**ODISHA'S RESEARCH AND EXTENSION FACILITIES CAN STRENGTHEN INNOVATION AND ENSURE HIGHER MARKET VALUE FOR PRODUCTS.**

The agricultural research and extension institutions like Odisha University of Agriculture and Technology (OUAT), ICAR institutes and ICAR-Krishi Vigyan Kendras (KVKs) in the state can actively help improve farmer productivity, promote adoption of best practices and ensure that technology flows into the hands of producers, making the state an ideal platform for oilseed-focused innovation. Furthermore, with increasing consumer preference for cold-pressed oils, there is a high potential of capturing premium urban markets and exports, ensuring higher value for farmers and processors.

**ITS STRATEGIC LOCATION IS CONDUCIVE FOR EASIER TRADE AND CONNECTION WITH THE WORLD.**

Odisha is geographically situated along the eastern economic corridor, providing strategic proximity to major consumption markets such as Kolkata, Chennai and Visakhapatnam, helping reduce logistics costs and transit time for edible oil producers. The availability of multiple ports, including Paradip, allows for import of crude edible oils for refining and export of value-added products. Compared to oversaturated hubs like Gujarat or Maharashtra, Odisha offers a cost-effective alternative with untapped processing capacity and rising local demand, making it attractive for both domestic processors and export-oriented units.

**ODISHA POLICIES PROVIDE ENABLING AND SUPPORTIVE ENVIRONMENT**

Odisha's Samrudhi Agriculture *Policy* 2020 aims to enhance agriculture growth by promoting cash crops and ensuring remunerative prices through adequate forward linkages and private sector participation. The state government has also implemented a range of schemes and policies for farmers, aimed at boosting the overall productivity and efficiency of the sector. These include:

- Access to subsidies, support for high-quality seeds, fertilizers and modern farming equipment
- Training programs and front-line demonstrations on the best agricultural practices and the use of technology to increase oilseeds yield
- Development of post-harvest infrastructure, supported by policies such as the Agriculture Infrastructure Fund and Cold Storage Policy, helping strengthen private sector participation in establishing storage and processing facilities to minimize post-harvest losses
- Initiatives like the Food Processing Policy that offer fiscal incentives to set up processing units

## POLICY LANDSCAPE AND OILSEED SECTOR

### Cultivation

| | | |
|---|---|---|
| **Seed Village Programme: Distribution of Seeds** | 60% of foundation/certified seeds cost for 1 acre land | INR 15,000 for training on seed production and post-harvest seed technology per group |
| **PMKSY, JALANIDHI & JALANIDHI-II – Harnessing Surface & Ground Water** | Subsidy of 75% or max. capital expenditure of INR 50,000 for creating dug wells, bore wells, etc. | Expansion of irrigation infrastructure including mega lift projects |
| **Farm Mechanization (SMAM/RKVY)** | 50% assistance on purchase of machinery | |

### Post Harvest & Marketing

| | | |
|---|---|---|
| **Agriculture Infrastructure Fund (AIF)** | Interest subvention up to 3% per annum up to INR 2 crores for a period of 7 years | For setting up and modernizing warehouse, cold chain storages, CHCs etc. |

| | | | |
|---|---|---|---|
| **Cold Storage Policy – 2025** | 50% subsidy on fixed capital expenditure up to INR 6 crore | 25% interest reimbursement on working capital support for amount above INR 1 crore | 50% electricity tariff subsidy for seven years |

### Value Addition & Processing

| | | |
|---|---|---|
| **Mukhya Mantri Krushi Udyog Yojana (MKUY) / AIF** | Capital Investment Subsidy (CIS) of 40% up to INR 50 lakhs for setting up food processing industry | AIF for establishment of solvent extraction machines, oil seed cakes, etc. |
| **Odisha Food Processing Policy – 2022** | CIS of 30% up to INR 3.5 crore for general enterprises and additional 5% for setting up in backward districts | 35% of cost of standalone New Reefer Vehicle(s)/Mobile pre-cooling van(s) up to INR 25 lakh |

### Oilseeds Value Chain Development

**Comprehensive Rice Fallow Management (CRFM)**

| | | |
|---|---|---|
| Diversify rice fallows to oilseeds during Rabi | Soil samples are collected and analyzed for essential nutrients along with pH, organic carbon | Advisory services via Ama Krushi call-centre |

**Crop Diversification Programme in Mega Lift Irrigation Projects (CDP-MLIP)**

Diversify to oilseeds in upland/medium land during Kharif

**National Mission on Edible Oil – Oilseeds (NMEO-OS)**

| | |
|---|---|
| **Production inputs:** | **Mechanization support:** |
| Assistance for purchase of breeder seed, seed infrastructure development, block demonstration, distribution of gypsum/pyrite/liming, insecticides/biopesticide, micronutrients | Improved farm implements, sprinkler sets, pipes carrying water from source to field |

**National Mission on Edible Oil – Oil Palm (NMEO-OP)**

| | | |
|---|---|---|
| **Area expansion inputs:** | **Production inputs:** | **Transfer of technology:** |
| Assistance for planting material, maintenance/cultivation cost, inputs for inter-cropping during gestation | Drip irrigation, borewell/water harvesting structure, machinery | Assistance for training of farmers/officers, custom hiring centre cum harvester group |

# 2

# ODISHA

## THE NEXT BIG HUB FOR OILSEEDS IN INDIA

# AT A GLANCE

- **Strategic Roadmap:** Enhancing Oilseed and Edible Oil Production
- **Proposed edible oil mission:** A dedicated Edible Oil Mission is proposed, with an estimated cost of INR 1,525 crore over five years (2025–26 to 2030–31), aimed at achieving self-sufficiency in edible oil by concentrating on priority crops (groundnut, mustard, sunflower, and oil palm) and secondary sources (rice bran, cottonseed).
- **Horizontal acreage expansion:** The roadmap emphasizes expanding oilseed cultivation by leveraging approximately 5.9 lakh hectares of existing rice-fallow land in the *Rabi* season. Additionally, promoting intercropping (e.g., groundnut with cotton/maize) is projected to add another 3.9 lakh hectares under oilseed acreage.
- **Addressing yield and seed gaps:** A critical focus is on closing the 58 percent overall oilseed yield gap compared to frontier states. This will be achieved by increasing the Seed Replacement Rate (SRR), adopting Good Agricultural Practices (GAPs), and addressing the current 15,000 tonne deficit in domestic seed production through the Seed Village Program and FPOs.
- **Value chain models and cluster approach:** An oilseed cluster approach will help standardize quality and achieve economies of scale. Two key supply chain models include the Hub and Spoke model (FMCG or FPO federation-managed processing hubs) and the Microenterprise-based Cooperative model for local processing and branding.

## 2.1 THE ODISHA EDIBLE OIL MISSION

There is a need to launch a dedicated Edible Oil Mission under the Department of Agriculture and Food Production, (2025–26 to 2030–31) to increase production and achieve self-sufficiency in edible oil. The proposed Mission is expected to cost INR 1,525 crore[b] over a period of five years, i.e. approximately INR 300 crore per year. The Mission will concentrate on key oilseed crops such as groundnut, rapeseed and mustard, sunflower and oil palm, while also implementing targeted interventions for secondary oilseeds like rice bran and cottonseed. A comprehensive approach will be adopted, addressing each stage of the value chain – from input supply to production, storage, processing and market access. The key activities under the mission are as portrayed in Figure 12.

Based on the Government of Odisha's historical agriculture budget increases and its medium-term fiscal strategy, the state has sufficient fiscal headroom to allocate INR 300 crore on an annual basis for the Edible Oil Mission. The strategic initiative can facilitate self-sufficiency in edible oils within the state and reduce the country's dependence on imports by enhancing domestic oilseed production and edible oil processing.


*Figure 12: Activities under Edible Oil Mission*

[b]The proposed five-year budget is based on comprehensive cost estimates for both oilseed cultivation and edible oil processing investment components.

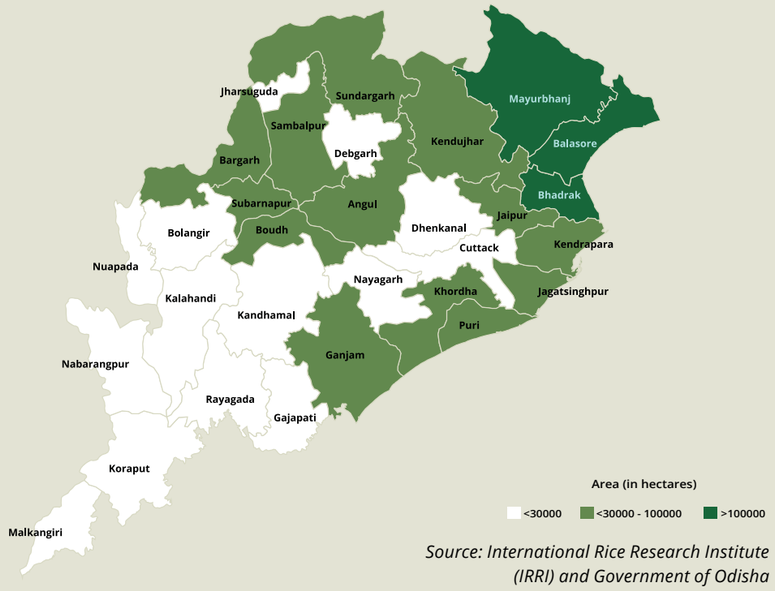
# 2.2 ODISHA EDIBLE OIL MISSION COMPONENTS

## 2.2.1 INCREASED OILSEED ACREAGE

### EXPANSION INTO RICE-FALLOW AREAS

An estimated 20 lakh hectares of rice fallow land, available for cultivation after the *Kharif* paddy harvest and another 11.7 lakh hectares are conducive for growing pulses and oilseeds, given soil moisture-based suitability mapping[2]. The rice fallows are areas where the *Kharif* paddy is sown but remains uncropped during the *Rabi* season due to various factors like irrigation facilities, suitable short duration varieties etc. These extensive fallow lands present significant opportunities to expand the cultivation area for oilseed production to grow medium/short duration oilseed crops, thereby optimizing the cropping system and maximizing farm returns.

Since rice fallow lands can support the growth of other crops, finding the optimal mix is crucial, especially with government efforts promoting the cultivation of non-paddy crops in the state including pulses, and millets. Allocating at least 50 percent of the fallow land would allow expansion to an area of up to ~5.9 lakh hectares across districts within the state.




*Source: International Rice Research Institute (IRRI) and Government of Odisha*

*Figure 13: District-wise Suitable Rice Fallows (in hectares)*

### INTERCROPPING OF OILSEEDS

Intercropping oilseeds with pulses and cereals will help in the optimization of land use and increasing overall productivity without requiring additional farmland, thus allowing farmers to grow multiple crops in the same season. Groundnut could be intercropped with cotton, maize and pigeon pea in rainfed upland areas of Odisha, as these crops complement each other, leading to better pest management and reduced chances of crop failure. Similarly, sunflower could be intercropped with *mung* bean.

The intercropping strategy is projected to result in the addition of 3.9 lakh hectares under oilseeds acreage, with groundnut and sunflower significantly contributing to enhanced oilseed output in the state. The Mission could provide support through input subsidy and mechanization support to farmers, helping ensure higher incomes and long-term sustainability.

| Oilseed Crop | Base Crop | Acreage under Base Crop 2023-24 | Area under Intercropping for Oilseeds |
|---|---|---|---|
| Groundnut | Cotton | 2.4 | 1.6 |
| | Maize | 3.0 | |
| | Pigeon Pea | 1.4 | |
| Sunflower | Mung Bean | 9.2 | 2.3 |

*Source: Estimated based on crop ratio and acreage under base crop(s). Directorate of Agriculture & Food Production, Government of Odisha*

*Table 1: Expansion of Oilseed under Intercropping (in Lakh Ha)*

Acreage expansion, including across rice fallow areas and via intercropping, by year is provided in the Table 2.

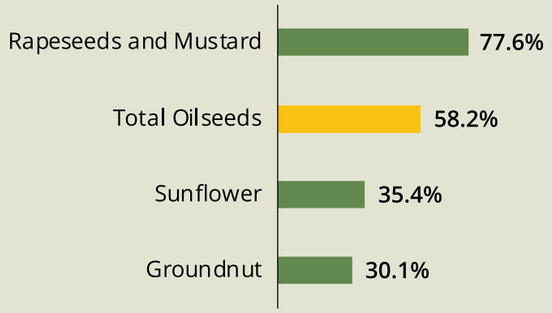
| Timeline | Acreage expansion target |
|---|---|
| Year-1 | 98 |
| Year-2 | 146 |
| Year-3 | 195 |
| Year-4 | 244 |
| Year-5 | 293 |
| **Total** | **976** |

*Source: Estimated based on crop ratio and acreage under base crop(s). Directorate of Agriculture & Food Production, Government of Odisha*

*Table 2: Expansion of Oilseed into Rice Fallow Areas (in '000 hectares)*

## 2.2.2 INCREASED INTENSIFIED PRODUCTION

The oilseeds yield has increased at a CAGR of 3.8 percent between 2019–20 and 2023–24. While this has been encouraging, Odisha still has a productivity gap as compared to the national average as well as traditional oilseed growing states. Currently, the yield gap for overall oilseeds is 58 percent, with specific gaps ranging from 30 percent for groundnut to 78 percent for rapeseed and mustard.




*Source: Directorate of Agriculture & Food Production, Government of Odisha, Department of Agriculture & Farmers Welfare, Government of India. Note: Frontier states are as follows: Overall Oilseeds (Tamil Nadu), Groundnut (West Bengal), Rapeseed and Mustard (Gujarat), Sunflower (Punjab)*

*Figure 14: Yield Gap: Odisha and Frontier States, TE2023-24*

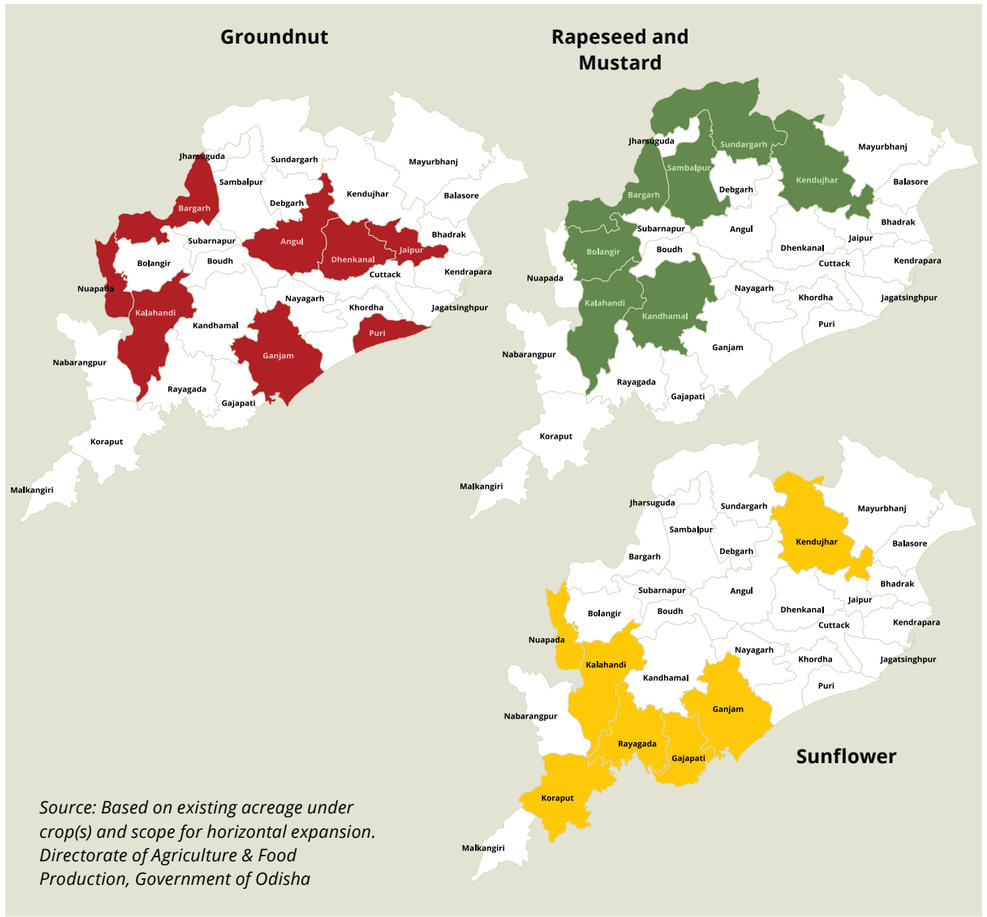
The state has significant potential to improve oilseed productivity to the level of Tamil Nadu's, Gujarat's, and West Bengal's, through increased seed replacement rate (SRR) and promotion and adoption of good agricultural practices (GAPs). GAPs consist of principles, regulations, and recommendations designed to promote sustainable and efficient farming while improving farmers' livelihoods and can be identified and applied on-ground in collaboration with research and academic institutions such as ICAR and OUAT, among others. Additionally, support from Solidaridad can be leveraged in scaling up sustainable practices and enhancing livelihood of smallholder farmers.

### 2.2.3 FOCUS ON PRIORITY CROPS

The focus on limited oilseeds crops like groundnut, mustard and sunflower among primary oilseeds, and oil palm, rice bran and cotton seed within secondary oil, is essential to ensure efficient use of resources and leverage existing strength in production and research. It would enable building targeted infrastructure for increasing production and reducing imports.

### 2.2.4 ADOPTION OF A CLUSTER APPROACH

The quality of oilseeds and edible oils is greatly affected by the availability and access to high-quality inputs. Implementing a cluster approach can help ensure these inputs are available to oilseed cultivators and in turn meet the standardized quality requirements of processors and end users. Clusters would also increase the economies of scale and achieve higher production and profitability by reducing cost and increasing market access. Based on existing acreage under key oilseed crops and scope for horizontal expansion via rice fallow areas, the study has identified potential clusters for individual crops.




*Source: Based on existing acreage under crop(s) and scope for horizontal expansion. Directorate of Agriculture & Food Production, Government of Odisha*

*Figure 15: Clusters across individual oilseeds*

Clusters enable smallholder farmers to access high-quality inputs collectively, receive training on best practices for crop cultivation, manage harvest and post-harvest activities effectively and achieve economies of scale. Additionally, it can facilitate the sorting of produce based on quality at aggregation points, ensuring that only products meeting specific standards are sent for processing, helping improve the competitiveness of the industry. In essence, clusters can help in production planning, demand adjustment (i.e., in terms of quality) and product placement, including direct marketing. It can also help processors/end-users resolve problems in the quality of produce that they procure, the management of multiple vendors and ensuring sustainability of supply. The clusters can help set up rural economic zones dedicated to edible oil processing, providing ready-to-move infrastructure and common facility centres to support local enterprises.

### 2.2.5 INCREASED SEED PRODUCTION AND ON-TIME SUPPLY

Currently, the SRR across oilseed crops is low in Odisha. The SRR for groundnut was 16 percent, 15 percent for rapeseed and mustard and 34 percent for sunflower, as of 2021. There is a demand and supply gap of 15,000 tonnes of seeds, i.e. 79 percent of the total seed demand in the state. The deficit in seed production has led to imports from states like Rajasthan, Gujarat, Andhra Pradesh, Maharashtra, etc. However, the seeds are often not suitable to local agro-climatic zones leading to germination issues and low yield. Therefore, there is a need to increase domestic production of suitable varieties and supply seeds at an affordable rate, since suitable stress resistant, high yielding, and high oil content seeds are important to ensure proper germination, high production and protect the crop against biotic and abiotic stress.

| Items | Supply | | | Demand (assuming ideal seed rate) | Demand – Supply Gap |
|---|---|---|---|---|---|
| | Kharif | Rabi | Total | | |
| Groundnut | 410 | 3716 | 4127 | 19398 | 15272 |
| Mustard | | 69 | 69 | 458 | 389 |
| Sunflower | | 24 | 24 | 106 | 82 |
| | | | | **Total** | **15743** |

*Source: 5 Decades of Odisha Agriculture Statistics – 2020, Directorate of Agriculture & Food Production, Government of Odisha*

*Table 3: Demand-Supply Gap in Seeds (in tonnes)*

Seed production can be enhanced through several strategic initiatives including the following:

- The promotion of seed entrepreneurs within seed village programs and/or leveraging FPOs by empowering local communities and fostering a sustainable agricultural ecosystem
- Collaboration with private sector entities and leveraging the expertise and resources available at agricultural universities/research centres can boost seed production capabilities.
- Robust monitoring and support mechanisms for seed multiplication and development processes can help ensure quality and efficiency in seed production efforts.

## 2.2.6 STRENGTHENING THE FPO ECOSYSTEMS

While the involvement of the FPOs is limited in the oilseeds value chain, there is scope to expand the number of FPOs to 100–150 in identified oilseed clusters over the next five years, to help increase production of and timely supply of certified seeds along with enhanced processing and value addition. This strategy can be supported by initiatives under the State Rural Livelihoods Mission (SRLM) and the Small Farmers' Agribusiness Consortium (SFAC), which play crucial roles in fostering the growth and development of FPOs in these regions. This synergy can improve seed quality and yield, contributing to a more resilient seed ecosystem in the following ways:

- The SRLM, with its extensive network of Self-Help Groups (SHGs) and community institutions, can play a pivotal role in mobilizing farmers and initial capacity building, organization of exposure visits and facilitating connections with input suppliers and technical advisors.
- It can support the formal registration of FPOs, provide equity grants and offer credit guarantee coverage.
- The SFAC can aid in developing market linkages, integrating value chains, and ensuring convergence with initiatives like the PM Formalization of Micro Food Processing Enterprises (PM-FME) scheme or the Agri Infrastructure Fund.

FPOs can collaborate with the private sector, agricultural universities, and research centres to facilitate knowledge transfer and leverage advanced technologies and expertise.

## 2.2.7 STORAGE INFRASTRUCTURE

Presently the state operates 4,714 warehouses with a combined capacity of 15 lakh tonnes, with 35 cold storages offering 1.7 lakh tonnes of storage. The storage ecosystem can be improved through a two-pronged strategy that includes earmarking certain existing capacity for oilseeds and building new warehouses and cold storages under existing schemes and policies.

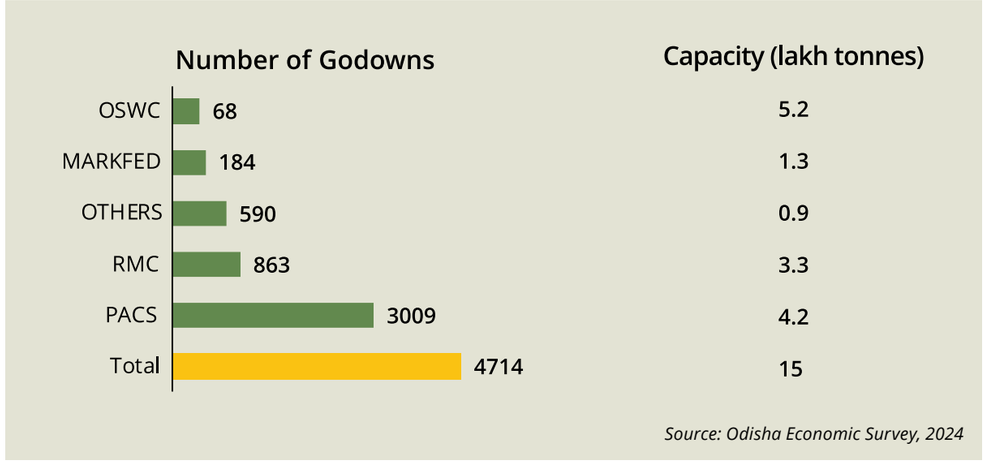



*Figure 16: Storage Capacity*

At least 318 units (10 percent) of the existing warehouses operated by the Primary Agricultural Cooperative Societies (PACS) and MARKFED should be upgraded and used specifically for oilseed storage, contributing around 55,000 tonnes of capacity. This will partly address the required storage capacity of at least 4 lakh tonnes, for the additional oilseeds production of 35.6 lakh tonnes by 2030. These warehouses could also be encouraged to register with the Warehouse Development and Regulatory Authority (WDRA) to enable warehouse receipt financing, allowing farmers to access credit against stored produce.



The state government has launched the Financial Assistance to Cold Storage Scheme to enhance cold storage infrastructure, aimed at establishing at least one modern cold storage facility in each of the state's 58 subdivisions. A budget of INR 252 crore has been allocated for the scheme over the next five years, offering capital investment subsidies, interest reimbursement, working capital support and electricity tariff subsidies to incentivize private investment. Under this policy, 30 strategically located cold storages could be prioritized in oilseed clusters to support storage of oilseeds and value-added products such as cold-pressed oils. These facilities could enable better handling of oil-bearing seeds such as sunflower and groundnut that are sensitive to moisture and temperature conditions.

*Support available under Financial Assistance to Cold Storage Scheme*

**Capital subsidy:**
Inclusive of cost of land & building for new cold storages covering up to 50% of the cost subject to a ceiling of INR 6 Cr

**Interest reimbursement** on differential amount between sanctioned bank loan amount and eligible upfront capital investment subsidy by APICOL up to 6%

**Power subsidy:**
50% of bill for cold storage operations up to 7 years from commencement of operations

Reimbursement of interest on loan account in case of cash credit/working capital loans

| | Subsidy |
|---|---|
| ≤10 Lakh | 100% |
| > 10 Lakh & ≤ 50 lakh | 75% |
| > 50 Lakh & ≤ 1 cr | 50% |
| > 1 cr & ≤ 5 cr | 25% |

Through this integrated strategy Odisha can not only reduce storage bottlenecks and crop losses but also unlock credit for farmers, improve price realization and support value chain development in oilseeds. Public-private collaboration, backed by targeted subsidies and regulatory facilitation, could be central to building a resilient storage ecosystem aligned with the long-term goals of the Edible Oil Mission and broader food security in the state.

## 2.2.8 SUPPLY CHAIN MODELS FOR EDIBLE OIL PRODUCTION

The development of an efficient and inclusive supply chain for oilseed processing is critical for improving farmer incomes, enhancing oil availability and promoting value addition at the grassroots level. Some of the potential models are outlined below:

### A. HUB AND SPOKE MODEL

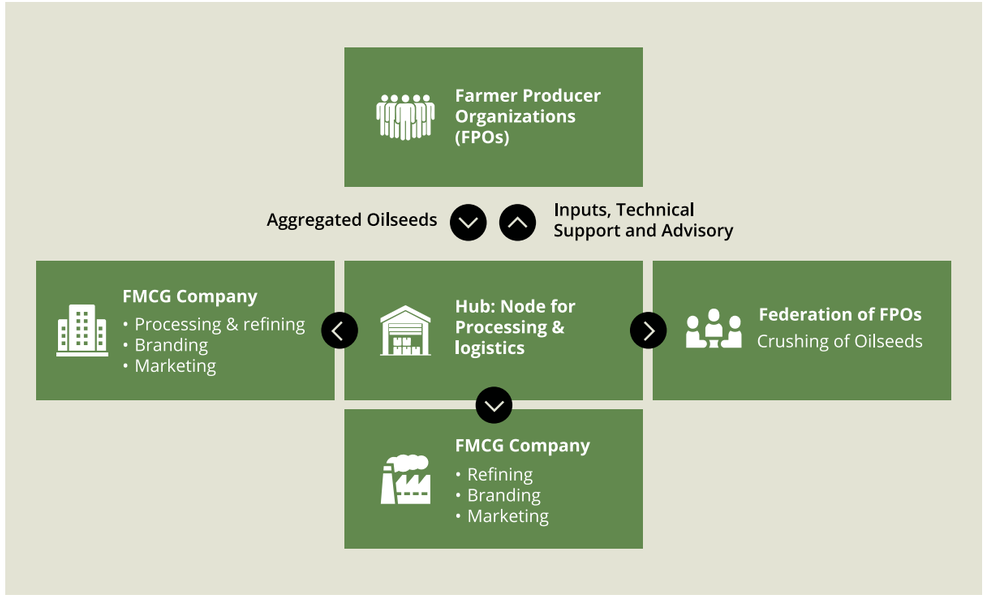
The model presents a decentralized and participatory approach to edible oil processing, tailored to integrate smallholder farmers and FPOs into higher-value markets.

**I. Hub:**

The hub functions as a processing and logistics node for oilseed crushing and edible oil production. Depending on the context, the hub can either be managed by an FMCG company or a federation of FPOs.

**FMCG-managed hub**: The company collaborates with FPOs to implement backward integration strategies – providing high-quality inputs including seeds/saplings, fertilizers and advisory services on agricultural practices and crop management. It then procures oilseeds from FPOs and manages downstream processes including crushing, refining, packaging, branding and distribution. The model introduces professional management, quality control and improved market access, while offering FPOs stable procurement arrangements and a fair pricing structure.

By sourcing directly from FPOs, the company ensures traceable procurement and offers farmers assured markets with transparent pricing. Purchases can be made under pre-agreed terms, with prices linked to market benchmarks or the MSP. If market prices drop below the MSP, a government-designed price-gap compensation mechanism can be implemented to cover the difference, protecting farmer incomes while maintaining the company's commercial viability. For the company, this ensures a reliable, quality-assured supply of oilseeds, and the scale of operations allows for efficient extraction and refining of oil, which is then branded and distributed through retail networks.




**Federation-managed hub:** When the hub is governed by the Federation of FPOs, the FPOs directly engage with input suppliers to provide farmers with essential resources such as seeds, saplings and fertilizers ensuring that farmers have access to high-quality inputs. The focus then shifts to the production of crude edible oil, which is supplied to FMCG companies for further processing. This model enhances local ownership and ensures that a greater share of the value generated from processing activities is retained within the community. By emphasizing decentralized decision-making, it fosters grassroots empowerment and community-driven strategies, ultimately promoting sustainable growth and development.

**II. Spokes**

The spokes managed by FPOs serve as the operational link to smallholder farmers. FPOs play the dual role of enabling backward and forward integration. They facilitate production of and access to certified seeds and quality inputs through bulk procurement or partnerships with suppliers, processors or FMCG companies which manage the hub. They also act as localized extension arms, disseminating tailored agronomic advisories that reflect regional agro-climatic conditions.

Post-harvest, FPOs take charge of aggregating produce and conducting primary processing activities such as drying, cleaning, sorting and grading at the village level, which improves shelf life, enhances price realization and reduces downstream processing losses. Additionally, they coordinate first-mile logistics to transport oilseeds to the hub, ensuring batch-level traceability and lowering transaction costs.

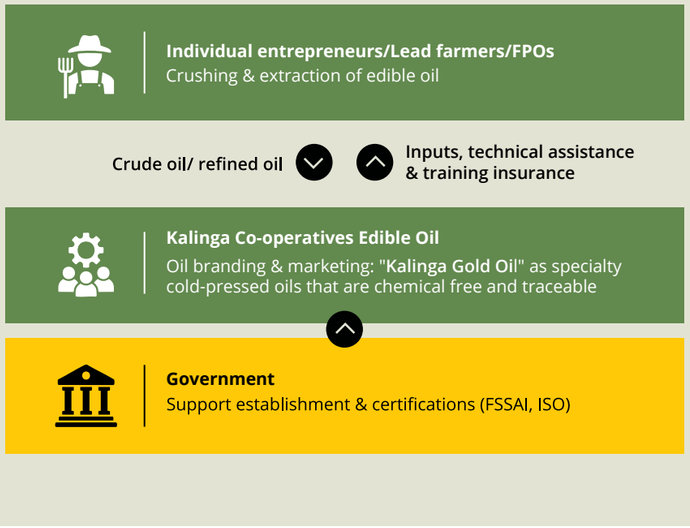
The effectiveness of this model depends on the institutional capacity of FPOs which represent the spokes. This can further be strengthened by working capital support, investment in infrastructure such as dryers, mini-graders, weighing bridges and capacity building in quality assurance and traceability, helping them integrate into higher-value supply chains.



The model enhances farmers' bargaining power and income security, fosters local employment, ensures traceable and quality-assured supply for downstream buyers and helps retain a larger share of value addition within rural economies. This makes it a scalable and inclusive solution aligned with both rural development and private sector efficiency objectives.

**B. MICROENTERPRISE-BASED COOPERATIVE MODEL**

The model empowers individual entrepreneurs, lead farmers or FPOs to set up small-scale crushing and extraction units within identified oilseed clusters. This initiative creates a platform for farmers to either process their oilseeds at these units — enabling them to sell the extracted oil directly to households or local markets — to sell their oilseeds to the units for processing. It enhances grassroots value, creates local employment, and fosters entrepreneurship.




Surrounding these units are cooperatives that serve as the critical link between individual extraction units and retail markets. These cooperatives focus on packaging, branding and marketing of the extracted edible oil, alleviating the financial burden on individual entrepreneurs while enhancing operational quality and scalability. By promoting cold-pressed oil varieties under potential brands including *Kalinga Gold*, the enterprises and cooperatives can attract premium segments of health-conscious consumers. Cooperatives could also implement outreach initiatives to disseminate innovative technologies to small and resource-limited farmers such as facilitating access to breeder seeds from state agricultural universities, supporting soil testing programs, organizing pre-sowing camps to raise awareness about various suitable varieties and providing technical expertise on pest control and good agricultural practices.

The government can play a crucial role by assisting both entrepreneurs and cooperatives in obtaining essential certifications, including the Food Safety and Standards Authority of India (FSSAI), Hazard Analysis and Critical Control Points (HACCP) and ISO. These certifications are vital for ensuring food safety compliance, accessing retail markets, and boosting consumer confidence.

### 2.2.9 DEDICATED INVESTMENT PROMOTION CELL

The establishment of a Dedicated Investment Promotion Cell within the Industrial Promotion & Investment Corporation of Odisha Limited (IPICOL) can unlock private sector participation and attract capital across the edible oil value chain. This cell could serve as a single-window facilitation and policy advocacy unit working in close coordination with various line departments like agriculture and industry. It is expected to act as a catalyst for industrial development, ensuring that Odisha not only becomes self-sufficient in edible oil production but also emerges as a national hub for oilseed processing.

While the Food Processing Policy 2022 offers an attractive array of incentives for industries, the categorization of edible oil as a "thrust sector" under the State Industrial Policy could signal the government's long-term commitment, enhance investor confidence and bring edible oil processing on par with other high-growth sectors. The Cell could act as a facilitation body to fast-track approvals for land allotment, regulatory clearances and incentives under the Odisha Food Processing Policy and MSME frameworks. Industries may also receive priority attention and additional incentives, such as support for obtaining quality certification from NABL-accredited laboratories and improved access to business development service providers, among others.

*Support available under Food Processing Policy 2022*

**Capital subsidy:**

New & existing enterprises with investment in plant & machinery up to INR 50 Cr

| General industries | Anchor industries | Technical entrepreneurs |
|---|---|---|
| 30% of CIS up to INR 3.5 Cr | 30% of CIS up to INR 5 Cr | 35% of CIS up to INR 4 Cr |

Additional 5% up to INR 50 Lakhs for enterprises in backward areas over and above

**Power subsidy:**

25% of cost of setting up captive solar power plant up to INR 25 Lakhs over and above

35% of the cost of standalone New Reefer Vehicle(s) / Mobile pre-cooling van(s) up to INR 25 Lakh

Up to INR 3 Lakh per **Entrepreneurship Skill Development Program** (ESDP) (of 25 to 30 trainees) to Government ITs / OUAT/ Industries Associations for 30-day Certificate Program on Food Processing

50% of expenditure for **Domestic Study Tour/ Exposure Visit** - max 2 batches (10-25 persons per batch) p.a up to INR 2 Lakh per batch

50% of cost of **Conducting Studies/ Surveys/ Feasibility** Report up to INR 4 Lakh

The Cell could play an integral role in promoting Odisha as a viable state for edible oil investments through regular edible oil fairs as part of the Utkarsh Odisha Summit. This platform could bring together producers, processors, seed companies, packaging firms, investors and policymakers to foster networking, showcase innovations and announce key investment opportunities. It could also serve as a marketplace for technology transfer and marketing tie-ups, particularly for cold-pressed, traceable and certified oils. Additionally, the Cell could conduct sector-specific roadshows, investor roundtables and policy dialogues both within and outside the state, targeting key industrial hubs and agri-investment platforms across India.

### 2.2.10 ESTABLISHMENT OF CENTRES OF EXCELLENCE AND INCUBATION

Setting up a Centre of Excellence (CoE) and an Incubation Centre for Oilseeds will help drive innovation and support long-term sustainability through research, innovation, capacity building and technology transfer, focusing on the entire oilseed value chain. The Centre will help in the R&D of high-yielding, stress resistant oilseed varieties suited to Odisha's agro-climatic zones and piloting and demonstration of scientific farm practices. In collaboration with OUAT, ICAR and international research bodies, the Centre could help improve varietal performance and seed quality to enhance productivity and reduce vulnerability to climate change. It could promote sustainable agricultural practices, including efficient water use, organic inputs and integrated pest management. Demonstration through model oilseed farms could enable farmers to witness best practices first-hand and encourage adoption. Additionally, the Centre could focus on developing and disseminating efficient post-harvest and processing technologies, along with conducting regular training programs for farmers, FPOs and agri-entrepreneurs. It could also incubate agri-tech start-ups working on oilseed cultivation, precision farming, value-added products and processing technologies, supported through access to mentorship, funding opportunities and market linkage facilitation.



### 2.2.11 INTERNATIONAL PARTNERSHIPS FOR TECHNICAL COLLABORATION

Technical partnerships with frontier countries under its Edible Oil Mission could help Odisha focus on the transfer of advanced technologies, best practices and institutional knowledge in oilseed cultivation and processing. Partnerships with countries like the Netherlands, known for its high mustard yields and expertise in precision agriculture and Brazil, a global leader in groundnut productivity, could bring in advanced crop management models that can be localized for Odisha's agro-climatic conditions.

International partnerships will help bring in emerging technologies such as drones, satellite-based imaging and AI-driven analytics to help optimize soil health monitoring, irrigation scheduling and nutrient application ensuring both higher productivity and environmental sustainability. Exposure to international processing technologies could support the development of modern, efficient oil extraction and refining infrastructure in the state.

### 2.2.12 CLIMATE RESILIENCE

Odisha is highly vulnerable to adverse climate events such as cyclones, floods, droughts and heatwaves that pose threats to agricultural activities and its sustainability. Addressing climate-related challenges in Odisha requires an integrated approach that combines risk assessment, mitigation, preparedness, response and recovery, supported by technological innovation and community participation.

**Risk reduction and mitigation:** Efforts should focus on leveraging geospatial tools and local knowledge to develop detailed agro-climatic vulnerability maps and zones, highlighting areas prone to drought, floods, and cyclones. Based on the analysis, the state should promote adaptive agronomic techniques within identified vulnerable zones, ranging from short-duration, stress-tolerant oilseeds varieties to intercropping with pulses to reduce vulnerability. Infrastructural investments towards creation of buffer zones, raised beds for oilseeds planting, elevated and resilient storage facilities are crucial to protect inputs, crops, and harvested produce from extreme events.

| Mitigation | Preparedness | Recovery |
|---|---|---|
| Agro-climatic vulnerability zoning using historical weather trends | Localized early warning & information systems | Expansion of weather-indexed insurance coverage under PMFBY |
| Adaptive agronomic practices [climate-resilient oilseed varieties, intercropping, cover cropping] | Disaster preparedness committees | Access to contingency working capital |
| Disaster resilient infrastructure across value chain [windbreaks, vegetative buffer zones, raised beds, decentralized, elevated & resilient storage] | Farmer capacity building on coping strategies & preparedness | Compensation towards cost of inputs in case of crop failure |

**Preparedness:** Odisha should strengthen its weather advisory systems by ensuring that timely, localized and understandable agro-meteorological information reaches farmers through mobile apps, community radios and voice-based messaging in regional languages. Local disaster preparedness committees should be established to coordinate early warning dissemination and emergency response at the village level. Routine farmer trainings can be conducted by KVKs and agricultural extension services to equip farmers with knowledge on climate-smart agronomy and contingency cropping plans.

**Response and recovery:** It is essential to establish robust mechanisms that enable swift damage assessment using drones and satellite imagery. This will help facilitate timely crop insurance claims under schemes such as the Pradhan Mantri Fasal Bima Yojana (PMFBY) and enable disbursement of contingency working capital to revive agricultural activities. Compensation towards input used, in case of crop losses, can also be provided to enable revival of agricultural activities.

# 3

# FUELING ODISHA'S FUTURE

## ECONOMIC, ENVIRONMENTAL AND SOCIAL GAINS

Credit: © Solidaridad/Dinesh Khanna

# AT A GLANCE

- **Significant farmer income boost**: Oilseed cultivation offers a 2.3 times return on investment, compared to 1.7 times for traditional crops like paddy. This shift is projected to double farmer incomes in Odisha from the current ~INR 60,000 to a range of INR 121,000 to 185,000 annually.
- **Economic output multiplier:** The proposed INR 1,525–crore Edible Oil Mission is expected to generate a total economic output impact of approximately INR 49,410 crore over five years. This represents an economic output worth 32 times the initial government investment.
- **Substantial employment generation:** The projected expansion of oilseed acreage by 9.8 lakh hectares will create an average of 363 lakh man-days of direct employment annually in the farm sector. The expansion of processing capacity is also expected to create an additional 0.8 lakh man-days of annual employment.
- **Addressing the edible oil deficit:** By fully utilizing the potential of traditional oilseeds, oil palm, and secondary sources (rice bran and cottonseed), the state has the potential to produce an additional 7.7 lakh tonnes of edible oil by 2030. This production could potentially cover the anticipated demand-supply gap in the state.
- **Environmental and nutritional benefits**: Expanding oilseed cultivation supports environmental sustainability by reducing water usage (groundnut requires significantly less water than paddy), improving soil quality through crop rotation, and increasing the state's cropping intensity. Additionally, oilseeds are a vital source of nutrients (Vitamins A, D, E, K, Omega 3) that can improve nutritional outcomes and food diversity.

## 3.1 INCREASED FARMER INCOMES

Agricultural households in Odisha earn an average income of INR 60,000, with 51.8 percent coming from wages. Crop production contributes to 30.7 percent of the income, followed by non-farm business and livestock rearing, each contributing 8 percent respectively. In comparison, crop production accounts for over 40 percent of income earned by agricultural households in oilseed growing states like Madhya Pradesh, Maharashtra and Uttar Pradesh. In Maharashtra, agricultural households earn approximately INR 57,000 from crop production, while in Madhya Pradesh and Uttar Pradesh, earnings amount to INR 52,000 and INR 40,000 respectively, compared to INR 20,000 in Odisha.

Oilseed crop cultivation offers returns of up to 2.3 times the investment, compared to traditional crops like paddy, which yield a return of 1.7 times. Hence, farmers in Odisha have the potential to earn additional incomes by cultivating oilseeds in rice fallows and through intercropping. Oilseed cultivation could help double farmer incomes in the state, from INR 60,000 to INR 121,000–185,000 per year, reflecting a 101–209 percent increase.

| CLASS | RAPESEED AND MUSTARD | SUNFLOWER | GROUNDNUT |
|---|---|---|---|
| Average farm size | 61 | 74 | 125 |
| Marginal (74.7%) | 36 | 44 | 75 |
| Small (18.2%) | 101 | 122 | 208 |
| Medium (1.0%) | 355 | 430 | 732 |
| Large (0.01%) | 1388 | 1481 | 2677 |

*Source: Estimates based on forecasted yield and MSP of oilseeds. Directorate of Agriculture & Food Production, Government of Odisha, various rounds of Cost of Cultivation data, Department of Agriculture & Farmers Welfare, Government of India, Agriculture Census 2015-16. Note: Figures in the parenthesis is percent of total holdings.*

*Table 4: Possible Income from Oilseeds Cultivation (in INR '000) in Odisha*

## 3.2 ECONOMY-WIDE IMPACT

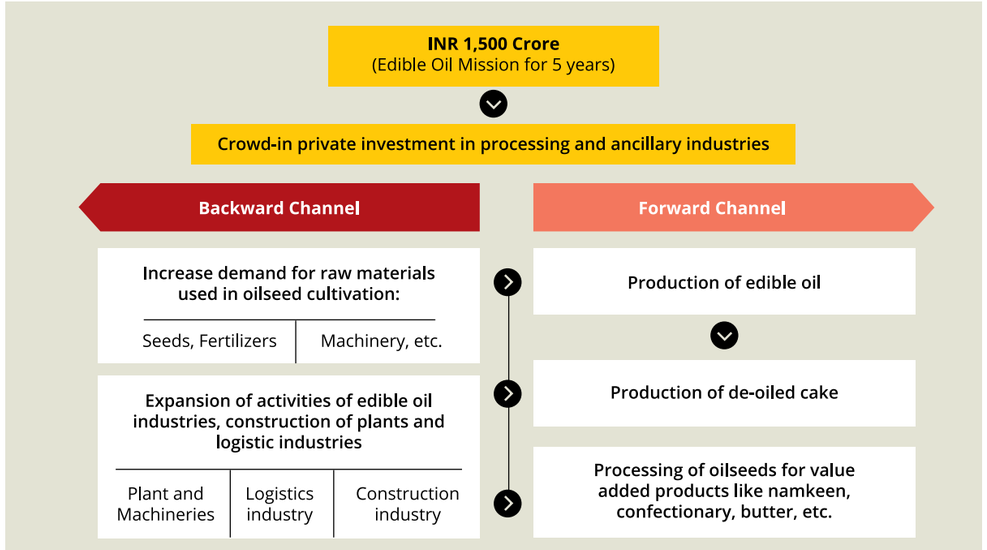
With a substantial increase in oilseed output expected over the next five years, the Edible Oil Mission will prioritize the development of both cultivation and processing infrastructure to fully realize this potential. By leveraging government investment and crowding-in private investment, the Mission aims to create a strong impact across the entire value chain, driving broad-based economic growth in the state.

Based on the forecasted cost of cultivation estimates per hectare and the anticipated expansion in oilseed acreage over the next five years, an additional farm-level investment of INR 9,105 crore will be required. The state will also need to significantly expand its processing and refining capacity, requiring an estimated investment of approximately INR 810 crore over the next five years.

The proposed Edible Oil Mission would require INR 1,525 crore (averaging INR 360 crore per annum over five years), of which INR 1,160 crore shall be allocated for farm subsidy and 360 crore INR shall be dedicated toward industrial subsidy to set up oil processing and refining infrastructure[c].

The government shall provide a subsidy covering 30 percent of seed costs, disbursed annually to all oilseed cultivators under the Edible Oil Mission to encourage farmers to adopt oilseeds cultivation. A capital investment subsidy of 45 percent shall be extended to private sector investors, over the existing incentives under the Food Processing Policy, as a one-time incentive to encourage the emergence of the state as an oil processing hub in the region and foster employment opportunities for youth.

[c]Under the Mission, the investors in the edible oil processing sector shall be extended the support as a one-time subsidy to encourage capacity establishment/augmentation and modernization.




*Source: Estimated based on cost of cultivation for individual crop(s), and assumptions regarding operations of processing plant. Directorate of Agriculture & Food Production, Government of Odisha, various rounds of Cost of Cultivation data, Department of Agriculture & Farmers Welfare, Government of India, DPRs released by National Institute of Food Technology Entrepreneurship and Management (NIFTEM), ASI 2022-23*

*Figure 17: Economy-wide impact of Oilseed Mission*

The investment across sectors is expected to significantly boost the state's economy through backward and forward linkages. The production and processing of oilseeds is expected to create direct, indirect and induced economic effects. The direct effect considers increased demand for various raw materials involved in oilseeds[d] and edible oil production[e], while the indirect effect includes the impact on upstream sectors that supply these raw materials (e.g., fertilizer manufacturers, equipment suppliers, etc.). The induced effect captures increased domestic consumption resulting from higher employment and income generated by the direct and indirect effects. The expanded oilseed production is also anticipated to create significant economic impacts through the production of edible oil including refined oils, de-oiled cake (DOC) and marketable oilseeds products[f]. Therefore, the investment is projected to lead to a total output impact of approximately INR 49,410 crore, after adjusting for the initial investment to avoid potential double-counting, as portrayed in Figure 17.

In essence, an investment of INR 1,525 crore will help the Edible Oil Mission to attract an additional private investment and generate economic output worth 32 times the initial investment. The output contribution to GSDP would be between 0.2-1.3 percent over a five-year period. The Edible Oil Mission is also expected to contribute about INR 6,770 crore to the government exchequer over a 15-year lifecycle of processing plants, 4.4 times the initial government investment[g].

[d]The investment in the agriculture sector covers costs related to seeds; machine and animal labor (both hired and owned); hired human labor; fertilizers, pesticides, and manure; irrigation charges; land revenue, cess, and taxes; interest on working capital; rent for leased land; and depreciation on implements and farm buildings. But this excludes minor and major irrigation infrastructure spending, other relevant infrastructure, insurance etc.

[e]In the processing and refining sector, investments considered include plant and machinery costs but exclude working capital and land.

[f]Oilseed products, including traditional oilseeds like groundnut, rapeseed and mustard, are valued for their direct consumption and use in producing snacks.

[g]It's estimated assuming an output to GSVA ratio of 4.4 per cent and average tax-to-GSVA ratio of 7 per cent.

# 3.3 EMPLOYMENT OPPORTUNITIES

Agriculture employs 49 percent of the state's total workforce, while industry and services account for 26 percent and 25 percent respectively. As of 2022–23, Odisha had 278 operational edible oil processing units – 26 in the organized sector and 252 in the unorganized sector – employing a total of 1,685 workers, accounting for about 0.5 percent of the industrial workforce. This is significantly lower compared to major oil-producing states such as Rajasthan, which has 1,832 units employing 15,667 workers (2.2 percent of industrial workforce), Gujarat with 2,889 units employing 24,421 workers (1 percent of the industrial workforce) and Maharashtra with 796 units employing 17,969 workers (0.8 percent of the industrial workforce).

With the proposed expansion of oilseed cultivation by 9.8 lakh hectares, Odisha is poised for a significant boost in agricultural employment. Based on data from the Estimates of Cost of Cultivation/Production and Related Data, the average labor requirement across groundnut, rapeseed and mustard and sunflower is estimated at 74 man-days per hectare. With the projected expansion in oilseed acreage, an average of 363 lakh man-days of direct employment is expected annually over the next five years in the farm sector.

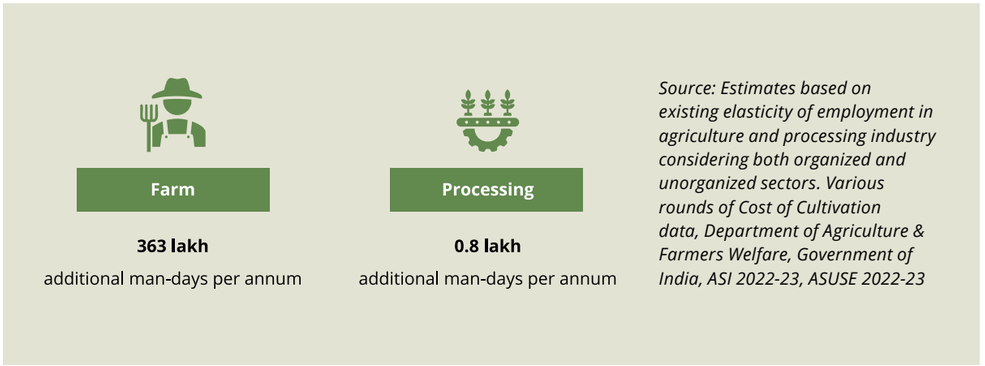
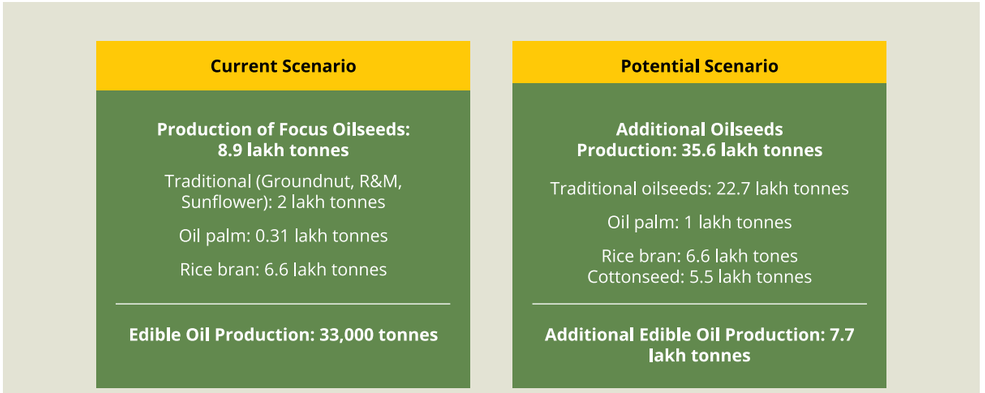



*Figure 18: Potential Increase in Employment for promoting oilseeds*

The anticipated increase in oilseed output could require the establishment of new facilities across key segments including traditional oilseeds, and secondary sources such as rice bran, cottonseed and oil palm. The projected expansion in processing and refining capacity will require an average of 0.8 lakh man-days of direct employment annually, over the next five years.




*Source: Estimates based on forecasted oilseeds production and oil conversion rates across oilseed crop(s). 5 Decades of Odisha Agriculture Statistics – 2020, Directorate of Agriculture & Food Production, Government of Odisha, Literature review*

*Figure 19: Edible Oil Production Potential*

## 3.4 REDUCED IMPORT DEPENDENCE

Based on the oilseed area expansion and yield improvement, the state is expected to produce an additional 22.7 lakh tonnes of traditional oilseeds (groundnut, rapeseed and mustard, and sunflower) by 2030. In parallel, oil palm cultivation in the state also offers a substantial opportunity to augment edible oil output. With full utilization of the potential area and improvements in yield, the state could produce approximately an additional 1 lakh tonnes of fresh fruit bunches (FFBs) by 2030. Additionally, leveraging the untapped potential of secondary sources of edible oil, the state could produce an additional 6.6 lakh tonnes of rice bran and 5.5 lakh tonnes of cottonseed.

These diverse sources would lead to an additional 7.7 lakh tonnes of edible oil production by 2030, comprising 6.3 lakh tonnes from traditional oilseeds, 0.1 lakh tonnes from oil palm and 1.3 lakh tonnes from secondary oilseeds. This would potentially address the anticipated demand-supply gap in 2030.

## 3.5 IMPROVED NUTRITION

Oilseeds are a vital source of various nutrients including vitamins A, D, E, K, essential fatty acids and omega 3 among others. Diversification into oilseed crops can significantly improve nutritional outcomes of agricultural households as well as people at the bottom of the pyramid through increased income and affordable access to edible oil respectively.

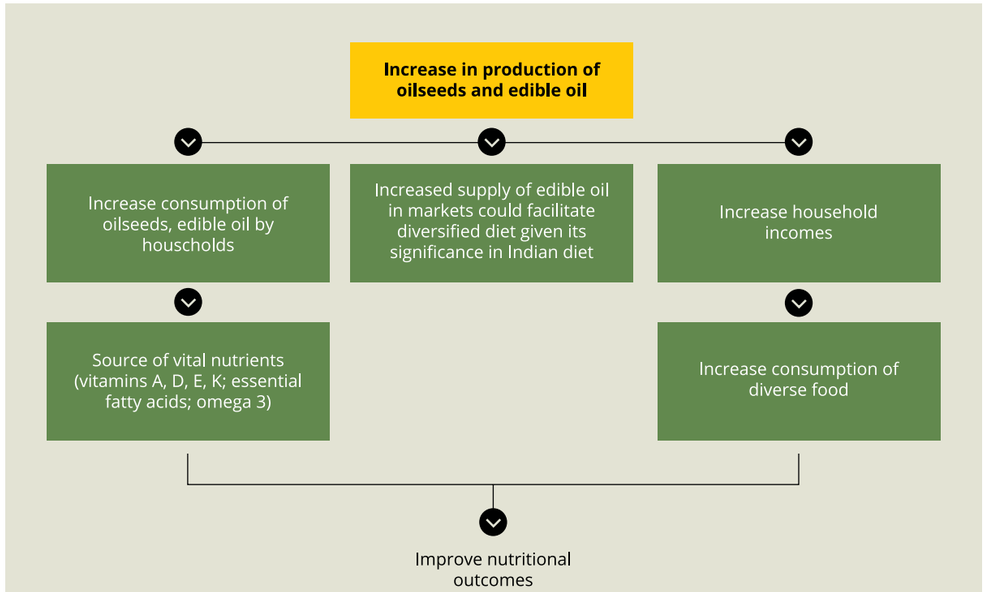



*Figure 20: Pathways to Improving Nutritional Outcomes*

Research has shown a strong link between crop diversification and improved dietary diversity for both households and individuals[3]. The access to edible oil facilitates consumption of a diversified diet given the significant importance of edible oil in the Indian diet.

## 3.6 ENVIRONMENTAL BENEFITS

Expanding oilseed cultivation in Odisha can yield substantial environmental benefits like increased cropping intensity, enhanced soil quality, reduced water usage and a shift away from monocropping. These play a critical role in building agricultural sustainability in the state, and would enable the government to increase cropping intensity and promote crop diversification.

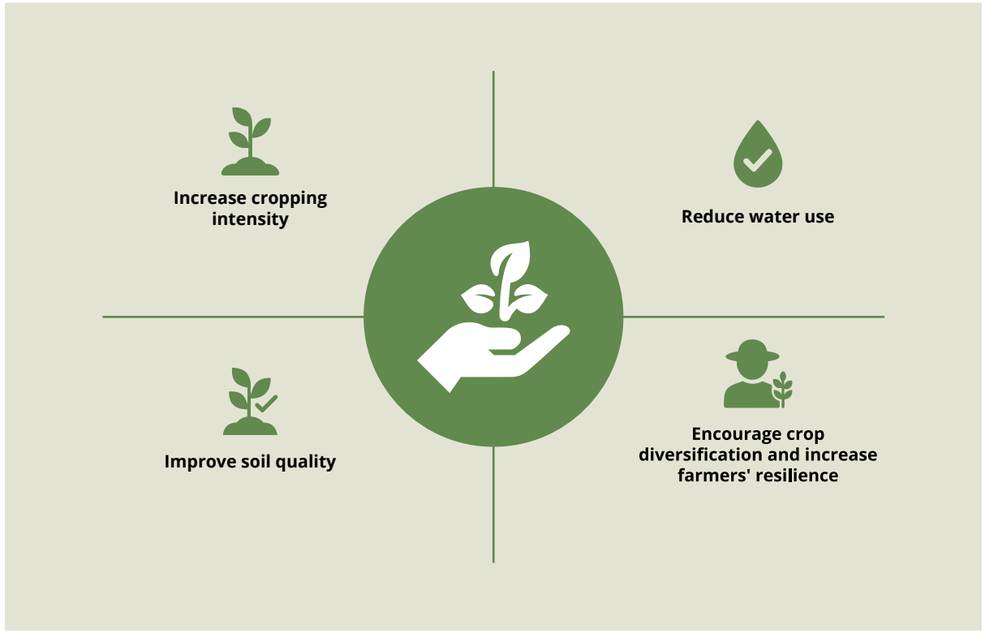



*Figure 21: Potential Environmental Benefits*

**Increased cropping intensity:** According to the state's Economic Survey 2024–25, Odisha's cropping intensity is 164 percent, less than the desirable level of at least 200 percent. Several districts practice monocropping which impacts yield and soil quality. Oilseed cultivation in the *Rabi* season would increase cropping intensity and productive use of land, usually kept vacant after *Kharif* paddy.

**Improved soil quality:** Crop rotation with species diversification aids in controlling pests, diseases and weeds, while also improving soil fertility and boosting profitability in production systems[4]. Crop rotation can also improve physical, chemical and biological soil attributes, especially by increasing the content of organic carbon, nitrogen and nutrients readily available to plants. Hence, diversification into oilseeds can help mitigate land degradation and minimize the need for chemical inputs as well as restoration of soil nutrients.

**Water conservation:** Oilseeds have lower water requirements as compared to paddy. Short-duration paddy requires 333 mm to 480 mm of water while medium-duration paddy crops need between 470 mm and 629 mm and long-duration paddy crops require between 600 mm and 821 mm. In contrast, groundnut crops grown during the *Rabi* season require only 270–330 mm of water[5]. Hence, expanding the adoption of oilseed crops can reduce the water footprint of the agricultural sector while enhancing agricultural production. Additionally, oilseed cultivation can be a more water-conservative option in regions experiencing groundwater depletion.

**Increased crop diversification:** Encouraging the cultivation of oilseed crops can help reduce agricultural households' dependence on a limited range of crops, such as paddy. The diversification can enhance farmers' income streams, improve their resilience and minimize their vulnerability to climate change and market fluctuations which arise from monocropping and concentration on few agricultural products.

# 4

# THE WAY FORWARD

# LAUNCH OF AN EDIBLE OIL MISSION

## PROPOSED FOR FIVE YEARS (2025–26 TO 2030–31)

**UNDER THE DEPARTMENT OF AGRICULTURE AND FOOD PRODUCTION WITH AN OUTLAY OF INR 1,525 CRORE TO COORDINATE EFFORTS TO INCREASE PRODUCTION AND ACHIEVE SELF-SUFFICIENCY IN EDIBLE OIL**

- Enhance quality seed production to meet the 15,000-tonne deficit in local seed supply by promoting seed entrepreneurs under the Seed Village Program and leveraging FPOs.
- Support smallholder farmers through capacity building, enabling structural reforms and facilitating access to warehouse receipt financing and credit.
- Strengthen R&D and extension services through a Centre of Excellence (CoE) and Incubation Centre.
- Bridge the infrastructure gap by upgrading a minimum of 10% of existing warehouses to ensure a storage capacity of at least 4 lakh tonnes by 2030, and prioritize the establishment of cold storage facilities in oilseed clusters.

# PRODUCTION ENHANCEMENT

**FOCUSED APPROACH TARGETING KEY PRODUCTION AREAS TO DRIVE ACREAGE AND YIELD GROWTH**

- Expand oilseed cultivation by utilizing up to 5.9 lakh hectares of existing rice-fallow area during the Rabi season and an additional 3.9 lakh hectares by promoting intercropping.
- Adopt Good Agricultural Practices (GAPs) for a substantial increase in the Seed Replacement Rate (SRR).
- Focus on priority crops like groundnut, mustard, and sunflower (primary oilseeds), alongside secondary sources like oil palm, rice bran and cottonseed, to ensure efficient resource deployment.

# SUPPLY CHAIN AND INVESTMENT PROMOTION

**MODELS TO BOOST LOCAL VALUE ADDITION AND MARKET ACCESS**

- Implement efficient supply chain models like the Hub and Spoke model and the Microenterprise-based Cooperative model to enhance local value addition and market access.
- Establish a Dedicated Investment Promotion Cell (Edible Oil Cell) to attract private capital, fast-track approvals, and catalyze private sector participation.
- Pursue international partnerships with frontier countries like the Netherlands and Brazil for technical collaboration, technology transfer, and institutional knowledge exchange.

# 5

# CASE STUDY

## CASE STUDY

# HOW ASSAM IS REVIVING OILSEED INDUSTRY TO ATTAIN SELF-SUFFICIENCY

In Assam, rapeseed and mustard are cultivated throughout the state, but these are particularly favoured in regions where **early-maturing rice varieties are planted**. The current production in Assam meets 20 percent edible oil consumption demand while the rest (80 percent) is met through imports. The average yield of mustard in Assam is 644 kg/ha, significantly lower than the national average of 1524 kg/ha for 2020–21. The cultivation of rapeseed and mustard in the state is largely rainfed due to a lack of irrigation facilities. Additionally, nearly 90 percent of the crop is grown by farmers on marginal and sub-marginal land. The production of rapeseed and mustard is further constrained by the failure to adopt recommended agronomic practices, such as timely sowing, lack of irrigation and infrastructure, non-adoption of improved technologies and proper seed replacement rates, all of which significantly diminish yield.

In April 2020, Directorate of Agriculture, Government of Assam, signed an MoU with ICAR – Directorate of Rapeseed-Mustard Research (DRMR) for technical advisory support for augmenting rapeseed-mustard production in Assam for securing sustainable livelihoods. The major objective was to make Assam self-sufficient in edible oil by reducing 80 percent of its import dependency, with a focus on enhanced area under cultivation, productivity and resource use. It also included strengthening the existing services and a focus on post-harvest management, efficiency and profitability. ICAR-DRMR is supporting the department through technical backstopping, human resource placement, creating awareness and capacity building of all stakeholders on improved seed varieties and scientific cultivation of rapeseed and mustard under the project.

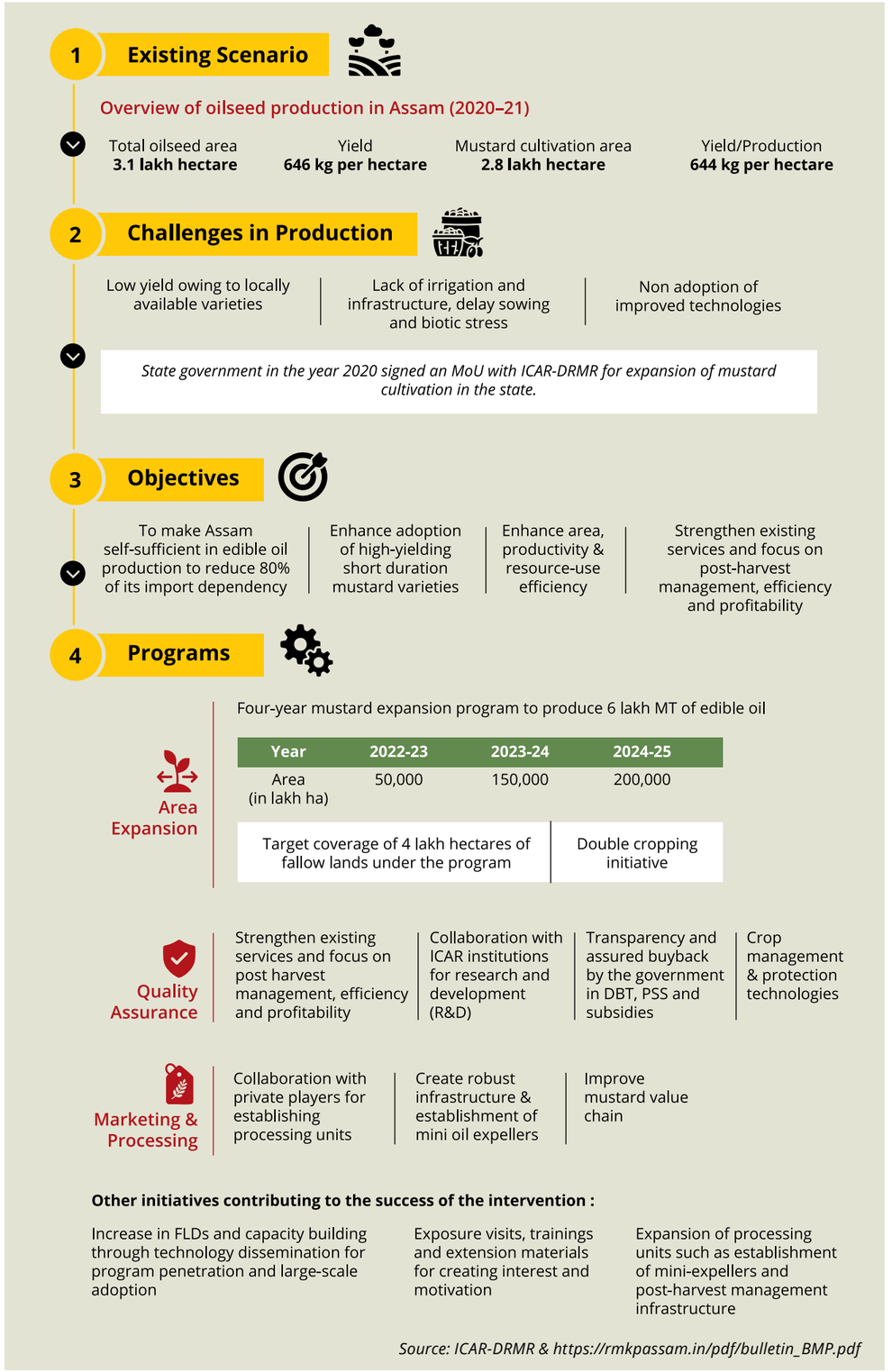
The flowchart on next page, highlights the issues and the key interventions by the state to revive its oilseed industry.

These interventions and early successes can be attributed to these:

a) Increase in frontline demonstrations (FLDs) and capacity building through technology dissemination,

b) Exposure visits, trainings and extension materials for creating interest and motivation,

c) Expansion of processing units such as establishment of mini-expellers and post-harvest management infrastructure.




*Flow diagram for expansion of rapeseed-mustard cultivation in Assam*

# STAKEHOLDERS CONSULTED

The key findings and recommendations provided in this report have been arrived at following consultations with a diverse stakeholder group, including manufacturers, associations, government representatives, and farmers/farmer producer organizations. A total of 25 such consultations were conducted to gather insights on key challenges and opportunities in the oilseed and edible oil sector for Odisha.

## LIST OF STAKEHOLDER CONSULTATIONS

| # | STAKEHOLDER GROUP | ORGANIZATION |
|---|---|---|
| 1 | **Manufacturers (4)** | Patanjali Foods-Ruchi Soya |
| 2 | | Bio Nutrients India Private Limited |
| 3 | | SNM Business Private Limited (Solvent Division) |
| 4 | | Godrej Agrovet – Oil Palm Division |
| 5 | **Trader (1)** | Individual trader based in Jajpur, Odisha |
| 6 | **Associations (3)** | Solvent Extractors' Association of India |
| 7 | | SOPA – The Soybean Processors Association of India |
| 8 | | Society for Promotion of Oil Palm Research and Development |
| 9 | **Academic/Research Institutions (4)** | ICAR-Central Institute of Agricultural Engineering (CIAE) |
| 10 | | ICAR-Directorate of Rapeseed-Mustard Research (DRMR) |
| 11 | | Odisha University of Agriculture & Technology (OUAT) |
| 12 | | Siksha 'O' Anusandhan University |
| 13 | **Government Body (6)** | Directorate of Oilseeds, Government of Odisha |
| 14 | | Oil Palm Cell, Horticulture Department, Government of Odisha |
| 15 | | Odisha State Seed & Organic Product Certification Agency (OSSOPCA) |
| 16 | | Odisha State Seeds Corporation (OSSC) |
| 17 | | Agricultural Promotion and Investment Corporation of Odisha Limited (APICOL) |
| 18 | | Directorate of Agriculture (Information) |
| 19 | **Farmer Producer Organization (2)** | Harabhangi LA FED FPC – Sunflower |
| 20 | | Binjharpur FPCL – Groundnut |
| 21 | **Focused group with Farmers (3)** | Radhe Shyam Biswal, Ainthi Sahoo, Suratha Paikaray (Groundnut and Sunflower) |
| 22 | | Individual farmers – Sabrina Swain, Ramesh Barik (Mustard) |
| 23 | | Individual farmers – Jitendra Pradhan, Goutam Khuntia (Mustard, Groundnut and Sunflower) |
| 24 | **Small oil expeller units (2)** | Individual cold-pressed oil expeller units with 20-24 kg capacity |
| 25 | | Cold-pressed mini-oil expeller unit, Bhubaneswar, Odisha |

# REFERENCES


1. International Rice Research Institute (IRRI) mapped and assessed rice fallow areas in Odisha for suitability based on soil moisture using satellite imagery from Sentinel-1 and Landsat 8 based on data from 2015 to 2021. Accessed at https://rkb-odisha.in/wp-content/ uploads/2024/09/Rice-Fallow-Management-in-Odisha.pdf

2. International Rice Research Institute (IRRI) mapped and assessed rice fallow areas in Odisha for suitability based on soil moisture using satellite imagery from Sentinel-1 and Landsat 8 based on data from 2015 to 2021. Accessed at https://rkb-odisha.in/wp-content/ uploads/2024/09/Rice-Fallow-Management-in-Odisha.pdf

3. Jones. (2017). Critical review of the emerging research evidence on agricultural biodiversity, diet diversity, and nutritional status in low- and middle-income countries, Vol. 75(10):769-782; Bhagowalia, Headey, & Kadiyala. (2012). Agriculture, Income, and Nutrition Linkages in India. IFPRI Discussion Paper.

4. Volsi, Higashi, & Bordin. (2022). The diversification of species in crop rotation increases the profitability of grain production systems. Nature.

5. Khatua (2017). Crop Water Requirement for Major Crops Grown in Various Agro-Climatic Zones of Odisha. International Journal of Agricultural Science and Research (JASR), 313-320.

# Solidaridad