

## Importance of Cultivating Oil Palm in the North East Region of India

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### Abstract

The North East Region (NER) of India, with its diverse climatic conditions and abundant rainfall, presents a significant opportunity for the cultivation of oil palm (*Elaeis guineensis* Jacq.). The region's potential for oil palm cultivation remains largely untapped despite the growing demand for edible oils in India, the world's largest importer of palm oil. This paper explores the benefits of cultivating oil palm in the NER, emphasizing its economic potential, contribution to reducing edible oil imports, and its alignment with sustainable agricultural practices. Through a comprehensive analysis of environmental suitability, socio-economic impacts, and policy frameworks, this study suggests that expanding oil palm cultivation in the region could drive both agricultural productivity and socio-economic development. This paper aims to explore the feasibility, challenges, and advantages of cultivating oil palm in the NER, focusing on its potential to enhance India's self-sufficiency in edible oil production and improve the livelihoods of farmers in the region.

### Introduction

India's consumption of edible oil is among the highest in the world, with palm oil accounting for approximately 40% of the total consumption. Despite the increasing demand, the country remains heavily dependent on imports to meet its growing needs. To reduce this dependency, the Government of India has emphasized domestic cultivation of oil palm, especially in regions with favourable climatic conditions. The North East Region (NER) of India, known for its tropical and subtropical climate, is well-suited for oil palm cultivation. Under National Mission on Edible Oils – Oil Palm (NMEO-OP), with a special focus on the North east region, the government is working to expand the cultivation across 8.4 lakh hectares to increase the production of crude palm oil (CPO) up to 11.20 lakh tonnes by 2025-26 (PIB, 2024).

Oil palm, native to West Africa, has been introduced to India National Royal Botanical Gardens, Kolkata in 1886 as part of efforts to increase domestic oil production. India imports around 9 million tonnes (MT) of palm oil annually, amounting to approximately Rs. 40,000 crores, which constitutes about 56% of the total edible oil imports (NMEO, 2022). This substantial import dependency highlights the country's reliance on palm oil to meet its growing demand for edible oils, underscoring the need for increased domestic production to reduce import costs and increase food security. The growing consumption of palm oil reflects its economic significance, both in terms of its cost-effectiveness and its role in the broader vegetable oil market. Currently, palm oil is cultivated in states like Andhra Pradesh, Tamil Nadu, and Karnataka, but the NER remains underdeveloped in this regard. The region's extensive rainfall, warm temperatures, and availability of land present a unique opportunity for the expansion of oil palm plantations. Moreover, the potential socio-economic benefits, such as employment generation, income augmentation for farmers, and rural development, make oil palm a valuable crop for the NER.

### **Environmental Suitability**

The NER of India is characterized by diverse agro-climatic conditions, which are suitable for a wide range of crops. The region experiences an average annual rainfall of 2000mm, which is ideal for oil palm, a water and nutrient-intensive crop. The temperature in the region also supports optimal growth conditions, as oil palm thrives in areas with temperatures between 25°C and 30°C. Moreover, the rich soil profile, predominantly loamy and fertile, is conducive to oil palm cultivation, provided that the drainage systems are well-managed. Studies suggest that with the implementation of suitable agronomic methodologies and region-specific adaptations, oil palm cultivation can be effectively established in the North Eastern Region (NER), without jeopardizing ecological balance (Srinivasan *et al.*, 2021). However, regional variations in climatic conditions, such as excessive rainfall in certain areas, might require adjustments in plantation management techniques, including efficient water drainage systems to prevent diseases and failure of the crop.

### **Economic Potential**

The cultivation of oil palm in the NER holds substantial economic promise. The region is predominantly agrarian, and oil palm offers farmers an opportunity to diversify their crop portfolio, leading to increased income. Oil palm cultivation is exceptionally lucrative due to its



remarkable productivity, yielding 3-8 times more oil per hectare compared to other temperate or tropical oil-bearing crops (Barcelos *et al.*, 2015). Additionally, the by-products of oil palm, including palm kernel cake and biomass, provide opportunities for value-added products such as biofuels and animal feed. The demand for palm oil in India is set to rise in the coming years, driven by population growth, expansion of the food processing and cosmetic industries and NER could become a major contributor to domestic oil production, thereby stimulating local economies, and raise standard of living of rural people (Government of India, 2021).

### **Challenges in Oil Palm Cultivation**

Despite its potential, several challenges hinder the large-scale adoption of oil palm in the NER. One of the primary concerns is the lack of infrastructure, such as access to irrigation facilities, roads, and markets, making it difficult to distribute the harvested fruit to processing units efficiently. While the establishment of processing mills is essential for value addition and reducing post-harvest losses, the high capital investment required for setting up both public and private mills presents a major challenge. In NER, much of the forest land is under communal management and converting these areas to oil palm plantations risks concentrating land ownership among a few powerful individuals, potentially intensifying socioeconomic disparities and undermining local livelihood security. Water resource management is another challenge, as oil palm is a water-intensive crop. Seasonal variations and inadequate water management systems can lead to drought-like conditions, particularly in dry spells.

### **Policy Support and Future Prospects**

Government policies have a crucial role in promoting oil palm cultivation in the NER. The National Mission on Edible Oils – Oil Palm (NMEO-OP), launched in 2021, aims to boost domestic production of oilseeds, including palm oil. This mission has identified the NER as a key region for expansion, providing financial incentives, subsidies for land development, and technical support for farmers. The NMEO-OP has allocated INR 5,870 crore specifically for the North Eastern Region (NER) from the total national budget of INR 11,040 crore for promoting oil palm cultivation, with 90% of the funding provided by the central government and plans to establish 10 new oil mills, the first of which was inaugurated in Arunachal Pradesh. (PIB, 2024). The promotion of contract farming, encouraging private investments, along with public-private partnerships, can help establish mills and processing units and integrating these into local economies could improve overall market access, reduce reliance on distant



processing centres, and enhance profitability for farmers. In addition, environmental sustainability must be a core focus in policy planning. Oil palm cultivation, while profitable, can lead to deforestation and environmental degradation if not managed sustainably. Adopting best practices in land use, promoting agroforestry systems, and ensuring the preservation of biodiversity will be critical to ensuring that oil palm cultivation contributes positively to both the economy and the environment.

### **Conclusion**

The North East Region of India offers immense potential for the cultivation of oil palm, a crop that can enhance India's self-sufficiency in edible oil production, create employment opportunities, and contribute to rural development. The region's favourable climate, availability of land, and suitability for large-scale oil palm plantations make it an ideal location for expanding oil palm cultivation. However, significant challenges related to infrastructure, water management, and market access need to be addressed for successful implementation. Developing infrastructural facilities, water conservation methods such as rainwater harvesting and efficient irrigation techniques, is essential to ensuring the sustainability of oil palm cultivation in the region. Policy interventions, coupled with proper infrastructure development and sustainable farming practices, will be key to unlocking the region's full potential in oil palm production. By capitalizing on this opportunity, India can reduce its dependency on palm oil imports, support its agricultural sector, and promote economic growth in the NER. The future of oil palm cultivation in the region looks promising, provided that efforts are made to overcome the existing barriers and establish a robust framework for its sustainable growth.

### **References**

- Barcelos, E., Rios, S. D. A., Cunha, R. N., Lopes, R., Motoike, S. Y., Babiychuk, E., ... & Kushnir, S. (2015). Oil palm natural diversity and the potential for yield improvement. *Frontiers in plant science*, **6**, 190.
- Government of India. (2021). National Mission on Edible Oils – Oil Palm. Ministry of Agriculture and Farmers Welfare.
- National Mission on Edible Oils – Oil Palm. (2022). National Mission on Edible Oils – Oil Palm. Ministry of Agriculture and Farmers Welfare, Government of India. Retrieved November 4, 2024, from <https://nmeo.dac.gov.in/>



Press Information Bureau. (2024, March 14). Vision for Edible Oil Self-Reliance takes root in the North-East; Launch of Oil Palm Processing Mill under National Mission on Edible Oil.

<https://pib.gov.in/PressReleaseIframePage.aspx?PRID=2014557#:~:text=The%20role%20of%20the%20NorthEastern%20Region%20%28NER%29%20is,hectares%2C%20which%20is%2038%25%20of%20the%20national%20potential>

Srinivasan, U., Velho, N., Lee, J. S. H., Chiarelli, D. D., Davis, K. F., & Wilcove, D. S. (2021). Oil palm cultivation can be expanded while sparing biodiversity in India. *Nature Food*, 2(6), 442-447.

