

International Journal of Agriculture Extension and Social Development

Volume 9; Issue 5; May 2026; Page No. 489-492

Received: 15-03-2026
Accepted: 24-04-2026

Indexed Journal
Peer Reviewed Journal

An economic assessment of Naga king chilli cultivation in Kohima district of Nagaland

¹Mhajan Tungoe, ¹Mukesh Kumar Maurya and ²Ashwini Choudhary

¹Department of Agricultural Economics, Sam Higginbottom University of Agriculture Technology and Sciences, Prayagraj, Uttar Pradesh, India

²Department of Agricultural Economics, BAU, Sabour, Bhagalpur, Bihar, India

DOI: <https://www.doi.org/10.33545/26180723.2026.v9.i5f.3616>

Corresponding Author: Mhajan Tungoe

Abstract

The present study entitled “An Economic Assessment of Naga King Chilli Cultivation in Kohima District of Nagaland” was undertaken to examine the economics of Naga King Chilli cultivation in Kohima district of Nagaland. The objectives of the study were to estimate the cost and returns of Naga King Chilli cultivation in the Kohima district and to analyze the profitability and benefit-cost ratio of the Naga King Chilli for farmers. Both primary and secondary data were collected from sample farmers comprising marginal, small, and medium farm categories through a structured interview schedule. The findings of the study revealed that the total cost of cultivation increased with increase in farm size. The total cost of cultivation per hectare was estimated at ₹84,000, ₹89,200, and ₹94,500 for marginal, small, and medium farmers, respectively. Human labour constituted the major share of the total cultivation cost, indicating the labour-intensive nature of the crop. The cost of production per kilogram was found to decrease with increase in farm size, while the benefit-cost ratio increased among medium farmers, indicating better resource utilization and higher economic efficiency. The study suggests the need for improved access to quality seeds, strengthening extension services, promoting irrigation facilities, providing input subsidies, and adopting improved pest and disease management practices to enhance the productivity and profitability of Naga King Chilli cultivation in the study area.

Keywords: Economic efficiency, input subsidies, management practices, productivity, profitability, schedule

Introduction

Agriculture plays an important role in the economy of Nagaland, where a large proportion of the rural population depends on farming and allied activities for livelihood. Among the various horticultural crops cultivated in the state, Naga King Chilli (*Capsicum chinense*), popularly known as Bhut Jolokia or ghost pepper, occupies a unique position due to its exceptional pungency, high market demand, and economic value. Indigenous to the North-Eastern region of India, particularly Nagaland, Assam, and Manipur, the crop is internationally recognized as one of the hottest chillies in the world, exceeding one million Scoville Heat Units (SHU). In Nagaland, Naga King Chilli is widely cultivated across many districts, including leading areas such as Peren district, Dimapur district, Mon district and Kohima district, where the agro- ecological conditions favour its growth. Traditional cultivation methods — often using jhum (shifting cultivation) or mixed cropping systems, with indigenous soil and pest-management practices — remain common

among farmers. Among the various districts, Naga King Chilli is widely cultivated in Kohima district because of the favourable agro-climatic conditions such as moderate temperature, high rainfall and fertile soil rich in organic

matter. The crop serves as an important source of income for rural households, especially small and marginal farmers due to its premium price in domestic and export markets. In addition to its use in traditional cuisine, the chilli is utilised in food processing, pharmaceuticals, natural pest repellents, and defense-related products because of its high capsaicin content. Naga King Chilli (*Capsicum chinense*), locally called *Raja Mircha*, received a Geographical Indication (GI) tag in 2008. This boosted its reputation across India. Naga King Chilli exports are growing, but its Revealed Comparative Advantage (RCA) is less than 1, meaning its share in India's total exports is still negligible. Despite its economic importance, the cultivation of Naga King Chilli is associated with several production-related challenges. Assessing the economic viability of Naga King Chilli cultivation in Kohima district is therefore crucial to understanding its profitability, improving resource utilization, sustainability, and role in enhancing farmers' socio-economic status. In this context, the present study was undertaken to analyze the cost of cultivation, cost of production, and profitability of Naga King Chilli cultivation among different categories of farmers in Kohima district, Nagaland. The study also attempts to suggest suitable measures for improving productivity and profitability.

Objectives of the Study

1. To estimate the cost and returns of Naga King Chilli cultivation in the Kohima district.
2. To analyze the profitability and benefit-cost ratio of the Naga King Chilli for farmers.

Research Methodology

The procedures that were followed to collect data have been detailed as: Primary data collected from selected farmers for the agricultural year 2025-2026. Subsequently, the secondary data was collected with the help of various journals, government records, reports, websites and related sources.

The study was conducted in Kohima district of Nagaland. The sub- district Chiephobozou was purposively selected on the basis of highest area under Naga King Chilli cultivation. Three villages were randomly selected from the Chiephobozou district. Multistage stratified random sampling procedure was selected for the present investigation to select ultimate unit of the sample. Primary data were collected from sample farmers through a structured interview schedule. The farmers were categorized into marginal, small, and medium farm groups. Tabular analysis, cost concepts, and marketing analysis techniques were used for data interpretation. Secondary data was collected with the help of journals, articles, websites, documents and related sources.

Analytical tools used

CACP Cost Concepts was used for cost of cultivation analysis, Benefit- Cost Ratio was also used.

Gross Income = Yield x Rate per kilogram of King chilli

Net Income = Gross Income – Total Costs

$$B:C = \frac{\text{Gross Return}}{\text{Total Cost}}$$

Where:

- Gross Return (Benefit) = Total income obtained from the crop/product
- Total Cost = Total expenditure incurred in production (fixed + variable costs)

Results and Discussion

The results show that the total cost of cultivation per hectare increases with the size of the farm. Medium farmers incurred the highest cost of cultivation (₹94,500/ha), followed by small farmers (₹89,200/ha) and marginal farmers (₹84,000/ha).

Among the various cost components, human labour constituted the largest share of total cultivation cost for all categories of farmers. This is because the cultivation of Naga King Chilli requires intensive labour for operations such as transplanting, weeding, staking, and harvesting. Expenditure on farmyard manure and fertilizers was also significant, as these inputs are necessary to maintain soil fertility and improve crop productivity. Medium farmers generally used slightly higher quantities of inputs, which explains the higher cultivation cost in this category.

The findings indicate that although the cost of cultivation is relatively high, Naga King Chilli remains a high-value crop in Nagaland, offering substantial income potential to farmers due to its premium market price.

Table 1: Cost of cultivation of king chilli across different farm size groups

Particulars	Marginal Farmers (₹/ha)	% Share	Small Farmers (₹/ha)	% Share	Medium Farmers (₹/ha)	% Share
Land preparation	12,500	14.88	13,200	14.8	14,000	14.81
Seed / Seedlings	7,200	8.57	7,500	8.41	7,800	8.25
Farmyard manure	9,800	11.67	10,200	11.43	10,500	11.11
Fertilizers	6,500	7.74	6,900	7.74	7,200	7.62
Plant protection chemicals	4,800	5.71	5,200	5.83	5,500	5.82
Human labour	22,000	26.19	23,500	26.35	25,000	26.46
Irrigation	3,200	3.81	3,400	3.81	3,700	3.92
Staking & intercultural operations	6,300	7.5	6,800	7.62	7,200	7.62
Harvesting & picking	8,500	10.12	9,000	10.09	9,800	10.37
Miscellaneous expenses	3,200	3.81	3,500	3.92	3,800	4.02
Total Cost of Cultivation	84,000	100	89,200	100	94,500	100

The results show that the total cost of cultivation per hectare increases with the size of the farm. Medium farmers incurred the highest cost of cultivation (₹94,500/ha), followed by small farmers (₹89,200/ha) and marginal farmers (₹84,000/ha).

Among the various cost components, human labour constituted the largest share of total cultivation cost for all categories of farmers. This is because the cultivation of Naga King Chilli requires intensive labour for operations such as transplanting, weeding, staking, and harvesting.

Expenditure on farmyard manure and fertilizers was also significant, as these inputs are necessary to maintain soil fertility and improve crop productivity. Medium farmers generally used slightly higher quantities of inputs, which explains the higher cultivation cost in this category.

The findings indicate that although the cost of cultivation is relatively high, Naga King Chilli remains a high-value crop in Nagaland, offering substantial income potential to farmers due to its premium market price.

Table 2: Different types of costs across different farm size groups

S.N	Cost Concepts	Marginal Farmers (₹/ha)	Small Farmers (₹/ha)	Medium Farmers (₹/ha)
1	Cost A1 (All paid-out costs)	64,000	68,500	72,000
2	Cost A2 (Cost A1 + rent paid for leased land)	64,000	69,500	73,000
3	Cost B1 (Cost A1 + interest on fixed capital)	67,200	71,900	75,600
4	Cost B2 (Cost B1 + rental value of owned land)	79,500	84,200	89,000
5	Cost C1 (Cost B1 + imputed value of family labour)	75,500	80,400	85,700
6	Cost C2 (Cost B2 + imputed value of family labour)	87,800	92,700	99,100

The results indicate that the total cost of cultivation (Cost C2) was highest for medium farmers (₹99,100/ha) followed by small farmers (₹92,700/ha) and marginal farmers (₹87,800/ha). The higher cost for medium farmers can be attributed to greater use of inputs such as fertilizers, plant protection chemicals and hired labour.

The difference between Cost A1 and Cost C2 highlights the

significant contribution of family labour and land value in the overall cost structure of Naga King Chilli cultivation.

These cost concepts help in assessing the profitability and economic viability of the crop and are widely used in agricultural economics studies to estimate farm income and returns.

Table 3: Cost of production per kg across different farm size groups

Farmer Category	Total Cost of Cultivation (₹/ha)	Yield (kg/ha)	Cost of Production (₹/kg)
Marginal Farmers	87,800	1,650	53.21
Small Farmers	92,700	1,800	51.5
Medium Farmers	99,100	2,000	49.55

Table 3 shows that the cost of production per kilogram decreases with an increase in farm size. Medium farmers recorded the lowest cost of production (₹49.55/kg), followed by small farmers (₹51.50/kg) and marginal farmers (₹53.21/kg).

The lower cost of production among medium farmers can be attributed to higher productivity and better utilization of resources, which reduces the cost per unit of output. In contrast, marginal farmers produce smaller quantities, which increases the per unit cost of production.

The findings indicate that improving productivity and efficient resource utilization can significantly reduce the cost of production and enhance the profitability of Naga King Chilli cultivation in the study area.

economically viable in the study area. The highest B:C ratio (8.07) was observed among medium farmers, suggesting more efficient utilization of resources compared to marginal and small farmers.

Overall, the findings indicate that Naga King Chilli is a high-value cash crop with strong income-generating potential for farmers in Kohima district.

Summary and Conclusion

The present study entitled “An Economic Assessment of Naga King Chilli Cultivation in Kohima District of Nagaland” was undertaken to analyze the economics of Naga King Chilli cultivation in the study area.

The study revealed that Naga King Chilli cultivation is a profitable enterprise in Kohima district. The total cost of cultivation per hectare was estimated to be ₹84,000 for marginal farmers, ₹89,200 for small farmers, and ₹94,500 for medium farmers, indicating that the cost of cultivation increased with increase in farm size. Among the various cost components, human labour accounted for the highest share of total cost, reflecting the labour-intensive nature of Naga King Chilli cultivation.

The analysis further showed that the cost of production per kilogram decreased with increase in farm size due to higher productivity and better utilization of resources by medium farmers. Similarly, the benefit–cost ratio was found to be higher among medium farmers compared to marginal and small farmers, indicating better economic efficiency and profitability among larger farm categories.

Based on the findings, the study suggests that government support in the form of subsidies, training programs and institutional credit can help farmers reduce production costs and improve profitability.

Overall, the study concludes that Naga King Chilli possesses strong economic potential in Kohima district of Nagaland. However, appropriate technological, institutional, and policy interventions is necessary to ensure sustainable production and improved livelihood opportunities for farmers.

Table 4: Benefit-cost ratio across different farm size groups

Particulars	Marginal Farmers	Small Farmers	Medium Farmers
Yield (kg/ha)	1,650	1,800	2,000
Average price (₹/kg)	400	400	400
Gross return (₹/ha)	6,60,000	7,20,000	8,00,000
Total cost of cultivation (Cost C ₂) (₹/ha)	87,800	92,700	99,100
Net return (₹/ha)	5,72,200	6,27,300	7,00,900
Benefit–Cost ratio	7.52	7.77	8.07

The results from Table 4 show that Naga King Chilli cultivation is highly profitable in the Kohima district. Medium farmers obtained the highest gross return (₹8,00,000/ha), mainly due to higher yield levels compared to marginal and small farmers.

The net return was also highest for medium farmers (₹7,00,900/ha) followed by small farmers (₹6,27,300/ha) and marginal farmers (₹5,72,200/ha). The higher returns among medium farmers can be attributed to better input use, improved crop management practices, and higher productivity.

The benefit–cost ratio was greater than 1 for all categories of farmers, indicating that Naga King Chilli cultivation is

References

1. Anwarul H, Fatimah MA. Technical efficiency of chili production. *American Journal of Applied Sciences*. 2010;7(2):185-190.
2. Bisht KS, Bhat A. Economic analysis of chilli production and marketing in North East India. *Indian Journal of Agricultural Economics*. 2017;72(3):345-352.
3. Chand R. Development policies and agricultural markets. *Economic and Political Weekly*. 2012;47(52):53-63.
4. Commission for Agricultural Costs and Prices. Reports on price policy for Kharif and Rabi crops. New Delhi: Ministry of Agriculture and Farmers Welfare, Government of India; 2022.
5. Garrett HE, Woodworth RS. *Statistics in psychology and education*. New York: Longmans Green and Co.; 1969.
6. Gomez KA, Gomez AA. *Statistical procedures for agricultural research*. 2nd ed. New York: John Wiley & Sons; 1984.
7. Government of India. *Agricultural statistics at a glance*. New Delhi: Ministry of Agriculture and Farmers Welfare; 2023.
8. Government of Nagaland. *Statistical handbook of Nagaland*. Kohima: Directorate of Economics and Statistics; 2022.
9. Meena GL, Singh H. Production and marketing constraints of chilli in Rajasthan. *Indian Journal of Agricultural Marketing*. 2013;27(3):65-72.
10. Natarajan A, Sahu M, Srivastava SC, Jaulkar AM. Study on cost of cultivation and economic returns from chilli crop growing districts of Telangana, India. *International Journal of Environment and Climate Change*. 2023;13(9):1592-1601.
11. Rajur BC, Patil BL, Basavaraj H. Economics of chilli production in Karnataka. *Karnataka Journal of Agricultural Sciences*. 2008;21(2):237-240.
12. Reddy SS, Ram PR, Sastry TVN, Devi IB. *Agricultural economics*. 3rd ed. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd.; 2017.
13. Velayutham LK, Kuppusamy D. An economic analysis of chillies production in Guntur district of Andhra Pradesh. *International Journal of Research in Economics and Social Sciences*. 2015;5(9):43-49.