



Cost of Cultivation and Minimum Support Price: A Study with Reference to Tur in Kalaburagi District

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Abstract

Tur is a significant crop of the agricultural economy, accounting for approximately 36 percent of the total cultivated area in the Kalaburagi district of Karnataka state. Given the prominence of the tur crop in the district's agricultural economy, it was essential to examine the issues concerning the cost of cultivation and the minimum support price for this crop in the district. This is particularly relevant despite the fact that the production of tur has seen an increase over the years, both nationally and within Karnataka, especially in Kalaburagi district. The study was conducted in Kalaburagi district of Karnataka state of India, to find out cost of cultivation and minimum support price for tur in Kalaburagi district, to analyze the cost benefit of tur cultivation in Kalaburagi district and to suggest certain measures in the light of empirical study for effective and efficient of cost of cultivation.



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Introduction

India is agriculture major country where 70% population is engaged in this sector. The nation is failing to maintain a sufficient supply of food grains despite concerted efforts and the so-called green revolution. Land cannot be stretched under the unfavorable conditions; instead, the per hectare yield must be increased.¹ Pulses play a significant role in our nation's crop pattern, and among them, tur is significant in many regions. The Kalaburagi region is recognized as one of the country's main tur-growing areas, with the highest tur sown in India in 8 lakh hectares during 2023–2024. The current study was done to find out

cost of cultivation and minimum support price, to analyze the cost benefit of tur cultivation and to suggest certain measures in the light of empirical study for effective and efficient of cost of cultivation.

Objectives of the Study

- To find out cost of cultivation and minimum support price for tur in Kalaburagi district.
- To analyse the cost benefit of tur cultivation in Kalaburagi district.
- To suggest certain measures in the light of empirical study for effective and efficient of cost of cultivation

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Research Methodology

Primary Data

To get the data from the farmers, the survey method is carried out. Data has been collected from 100 respondents by using a Random sampling technique with the help of a structured questionnaire.

Secondary Data

This data has been collected from, research articles, journals, websites and dissertations, etc

Research Design

The present study is analytical and descriptive in nature. It will highlight how cost of cultivation and minimum support price influence the farmers with special reference to tur.

Materials and Methods

Tur, also known as Red gram or Arhar, belongs to the Fabaceae family, rich in protein, typically consumed as a split pulse known as Dal.² It is referred to by various names, including Congo pea, toovar, toor, togari, gandul, Gungo pea, and no eye pea. The tap roots of the plant contain nodules that harbor Rhizobium bacteria, which are capable of fixing atmospheric nitrogen. This crop is believed to have originated in Asia and is cultivated across tropical and subtropical regions, particularly in South Asia, Eastern and Southern Africa, Latin America, and Australia. The primary production areas include the Indian subcontinent, Eastern Africa, and Central America. It is characterized by a single woody stem that

can grow about 4 meters tall and has a robust root system, enabling it to withstand drought conditions.

In India, it ranks as the second most important pulse after Bengal gram. Consumption of tur may correct deficiency of many bio molecules in the human body as proteins, vitamin B, calcium, and phosphorus. For a considerable time, people across all economic backgrounds in various nations have consumed dhal.

Tur can be grown in various soil types, ranging from black clay to sandy soil, although it is highly sensitive to water logging. As a crop that is resistant to drought, it is well-suited for dry-land farming and is often planted alongside other crops such as cotton, sorghum, groundnut, and black gram to enhance yield and maintain and improve soil fertility.

In the Kalaburagi district five important varieties viz. GRG-811, GRG-152, TS-3R (Pink), BRG-5 and LRG-52 are predominantly grown and recommended for commercial cultivation.³

Area Cultivation and Production of Tur in Kalaburagi and Karnataka

In Karnataka, tur is grown in all the districts except Dakshin Kannada, Kodagu and Udupi. The total area under cultivation of tur in Karnataka during 2022-23 was 12,44,937 hectares. Kalaburagi alone has 4,86, 238 hectares which works out to 39.10% of the total area under tur cultivation in Karnataka⁴ (Table -1) Therefore, this district has chosen for the present study.

Table 1: Area and Production of Tur Crop in Kalaburagi and Karnataka during the year 2022-23 (District wise)

Sl. No.	District Name	Area (Hectare)	% of Area	Production (Tonnes)	% of Production
1	Bagalkote	37495	3.01	23260	2.51
2	Bengaluru - Urban	240	0.02	179	0.02
3	Bengaluru - Rural	418	0.03	190	0.02
4	Belagavi	11516	0.93	5327	0.57
5	Ballari	3751	0.3	1665	0.18
6	Bidar	113718	9.13	99296	10.7
7	Vijayapura	375180	30.1	257373	27.8
8	Chamarajanagar	190	0.02	92	0.01
9	Chickballapur	1357	0.11	540	0.06
10	Chikmagalur	55	0	41	0

11	Chitradurga	6815	0.55	3419	0.37
12	Dakshina Kannada	0	0	0	0
13	Davanagere	512	0.04	699	0.08
14	Dharwad	70	0.01	59	0.01
15	Gadag	196	0.02	138	0.01
16	Kalaburagi	486238	39.1	415996	44.9
17	Hassan	227	0.02	108	0.01
18	Haveri	107	0.01	125	0.01
19	Kodagu	0	0	0	0
20	Kolar	459	0.04	241	0.03
21	Koppal	34963	2.81	17200	1.86
22	Mandya	182	0.01	117	0.01
23	Mysuru	1836	0.15	281	0.03
24	Raichur	108337	8.7	60092	6.48
25	Ramanagaram	500	0.04	378	0.04
26	Shivamogga	19	0	14	0
27	Tumakuru	6609	0.53	2228	0.24
28	Udupi	0	0	0	0
29	Uttara Kannada	1	0	1	0
30	Vijayanagar	5804	0.47	2929	0.32
31	Yadgir	48142	3.87	34724	3.75
	State Total	1244937	100	926712	100

Source: Directorate of Economics and Statistics Bengaluru. (2022-23)

The tur cultivation is hence dominated in certain district only, viz., Kalaburagi, Bidar, Raichur Yadagir and Vijayapur in Karnataka State. These districts have significant share both in terms of area and production of tur in Karnataka. More than 93 % of the tur Production is accounted by the districts mentioned above.

Overview of Tur Cultivation in Kalaburagi District

Tur, also known as pigeon pea (*Cajanus cajan*), is a significant pulse crop grown extensively in Kalaburagi District of Karnataka. This crop plays an important role in both the agricultural economy and dietary needs of the region, as it provides essential nutrients and contributes to the livelihood of farmers. Below is a breakdown of the key aspects of tur cultivation in Kalaburagi.⁵

Dietary Importance

Tur as a Protein Source

Tur is a rich source of vegetarian protein and plays a crucial role in the Indian diet, especially in regions where pulses are a staple food. It is commonly used in dal (lentil curry) and sambar, which are essential dishes in many Indian households.

Nutritional Value

It is also a good source of fiber, vitamins (especially B-vitamins), minerals (such as calcium and iron), and antioxidants, contributing to a balanced diet.

Cash Crop

Economic Benefits

Tur is grown primarily for commercial purposes in Kalaburagi, making it an important cash crop for farmers. The district's agro-climatic conditions, including moderate rainfall and well-drained soils, provide a suitable environment for its cultivation.

Market Demand

With growing urbanization and changing dietary habits, the demand for tur in both domestic and international markets has surged, enhancing its profitability.

Utility for Cattle and Soil Health

Fodder for Cattle: Apart from being a food source for humans, the tur plant provides valuable dry fodder for livestock. The leaves and pods of the tur plant are rich in nutrients and serve as animal feed, supporting dairy farming and other livestock activities in the region.

Soil Fertility

Tur is a leguminous plant, which helps in nitrogen fixation, improving soil fertility. Its cultivation enhances the sustainability of agricultural practices, as it reduces the need for chemical fertilizers and maintains healthy soil ecosystems.

Income Generation for Farmers**Increased Revenue**

For the farmers of Kalaburagi, tur cultivation is a major source of income. Given the crop's high market demand and profitability, it helps increase farmers' economic stability.

Employment Opportunities

The cultivation and processing of tur, including tasks like harvesting, threshing, and milling, generate employment for local communities, further boosting the rural economy.

Boost to Dal Mills and Exports**Dal Mills**

Kalaburagi has several dal mills, which process the tur into dal (split and dried pulses). These mills are an integral part of the local economy, providing employment and promoting the value-added processing of tur. The production of dal is a thriving industry in the region, contributing to both domestic and international demand.

Export Potential

With an increasing global demand for pulses, the tur grown in Kalaburagi finds its way into international markets, particularly in countries with large vegetarian populations. This has not only increased export earnings for the region but has also established Kalaburagi as a key player in the global pulse trade.

Trends in Prices of Tur in Kalaburagi District

All agricultural commodities are subject to violent price fluctuations and next to rain changes have at a long been the greatest enemy for the farmers. The price fluctuations of agricultural commodities not only affect the interest of the farmers but also that of the consumers. For farmers, adverse price fluctuations make great inroads into their income and often lead to shifts in cultivation in favour of other crops.

From the average prices constructed it was found that over the 9 year period index number fluctuated between 3828 to 7446 (Table-2).

Table 2: Average Prices of Tur during 2017 to 2025 in Kalaburagi Districts

Years	Prices (Rs.)
2017	4314
2018	3828
2019	4916
2020	5232
2021	6800
2022	6500
2023	7446
2024	5857
2025	6800

Source: www.napanta.com

Minimum Support Price

The Minimum Support Price (MSP) is a government intervention in India designed to safeguard producers from significant declines in agricultural prices. The Government of India announces the MSP at the start of the sowing season for specific crops based on the recommendations of the Commission for Agricultural Costs and Prices. This price is established by the Government of India to shield farmers from drastic price drops during years of high production. Nonetheless, the primary aim of MSPs is to help farmers avoid distress sales and to acquire food grains for public distribution.⁶

Taking into account the farmers' interests as well as the necessity for self-sufficiency, the Government has been declaring the minimum support price for tur. The table-3 presents the minimum support prices over the last decade. The lowest amount of minimum support price was made in 2014-15, from the government i.e., Rs. 4350 followed by Rs. 4625 in 2015-16, during the study period very high minimum support price was made in 2024-25 i.e., Rs 7550. It is clear that there is increase of minimum support price every year.

Table 3: Minimum Support Price of Tur

Years	In Rs/Quintals
2014-15	4350
2015-16	4625
2016-17	5050
2017-18	5450
2018-19	5675
2019-20	5800
2020-21	6000
2021-22	6300
2022-23	6600
2023-24	7000
2024-25	7550

Source: <https://farmer.gov.in>

Results

Tur is one of the main commercial crops grown in Kalaburagi District, and the soil's characteristics during the monsoon season are ideal for its growth. The Tur Development Board is supporting and

safeguarding farmers who grow Tur in this area, and the government has also provided aid to farmers for the development of the agricultural sector. In order to boost their productivity, farmers incorporated fertilizers and used seeds, but they are now having issues in the marketplace. The MSP has been set by the government with farmers' interests in mind.

Status of the Farmers

In the sample area majority of the respondents were engaged in agriculture activity. The farmers of this area were growing number of commercial crops like, Tur, urd, Gram and sugarcane, which are immensely contributing to the socio-economic conditions of the farmers. On the basis of land holding the sample farmers are classified into three categories, viz., marginal, medium and large scale farmers.

The table indicates that most respondents are marginal farmers, accounting for 48%, while medium and large-scale farmers represent 32% and 20%, respectively.

Table 4: Status of the farmers

Status	No. of Respondents	% of Respondents
Marginal	48	48%
Medium	32	32%
Large Scale	20	20%
Total	100	100%

Source: Field survey (2024-25)

Method of Sowing

In the Karnataka state Kalaburagi district is treated as a backward district where majority of the peoples are illiterate specially areas peoples like farmers. Due to lack of information about the new sowing

methods or technology, the areas farmers are adopting the manual methods of sowing only few number of farmers i.e., Large scale farmers are adopting mechanical sowing method.

Table 5: Method of Sowing

Method	No. of Respondents	% of Respondents
Manual	70	70%
Mechanical	30	30%
Total	100	100%

Source: Field survey (2024-25)

From the above table it was found that the majority of respondents with 70% are adopting manual sowing it was a traditional method as well as involving low cost method of sowing and only 30% of respondents were showing the mechanically. This method is not available for every common farmer due to Lack of proper knowledge about using and lack of capital.

The Purpose of Utilizing Fertilizer

Fertilizer being an essential input for raising production in both irrigated and rained conditions, for all types of commodities food and non-food requires Governments attention for increasing its production to reach the stage of self-sufficiency.

Table 6: Purpose of using fertilizer

Purpose	No. of Respondents	% of Respondents
To increase the yield	93	93%
Influence of neighbor farmer	07	07%
Total	100	100%

Source: Field Survey (2024-25)

According to the above table, 93% of the respondents reported using fertilizer to enhance their per acre yield. Only 7% of farmers used fertilizer due to the influence and recommendations from neighboring farmers.

quantity of tur, in order control the insect-pest and to increase the production, there are number of pesticides available in the market place. These pesticides were applied by two methods as written under (Table-7).

Method of Insecticides Application

The insect's problem is one of the major problems faced by the sample areas farmers. Due to this problem the farmers are unable to produce large

The data presented in the table clearly demonstrates that 93% of respondents are utilizing the manual hand sprayer method, while 7% of participants are employing the cart sprayer method.

Table 7: Method of insecticides application

Purpose	No. of Respondents	% of Respondents
Man hand sprayer method	93	93%
Using Cart sprayer method	07	07%
Total	100	100%

Source: Field survey (2024-25)

Table 8: Methods of Harvesting

Mode	No. of Respondents	% of Respondents
Manual	0	0%
Machine	0	0%
Both	100	100
Total	100	100%

Source: Field survey (2024-25)

Methods of Harvesting

The prevailing practice of harvesting are conventional to cut the crop by using manual method was found more in use whereas use of machine was found gaining for separating grain and 100% of respondents holds the both method of harvesting.

Transport Service

Transportation facilities are very essential for selling of tur in the regulated market if they have transfer facility get the better price in the market.

Table 9: Transport service

Service	No. of Respondents	% of Respondents
Tractor	75	75%
Lorry	15	15%
DCM open truck	10	10%
Total	100	100%

Source: Field survey (2024-25)

The above table represents that majority of people prefers to Tractor service. The respondents from this group represent 75% of the total. The next preferred service is lorry and followed by DCM open truck service i.e. 15% and 10% respectively.

to give loan for formers but they didn't give any kind of loan for farmers they take the loan from money lenders and commercial banks it is heavy expenditure to the farmers majority of farmers used the self finance for cultivation.

Source for Crop Loan

Crop loan is very important role in the production of tur, the co-operative credit societies are bound

Table 10: Source for Crop Loan

Source	No. of Respondents	% of Respondents
Money Lenders	18	18%
Commercial Banks	25	25%
Traders/Commission Agents	12	12%
Co-operative credit societies	03	03%
Self Finance	42	42%
Total	100	100%

Source: Field survey (2024-25)

It was found that 18% of the respondents taken crop loan from money lenders for the reason of quick sanction of loan and followed by the 25% of the respondents taken from loan commercial Banks for the reasons for low interest rate, 12% of the respondents taken loan from traders / commission agents because of loan available any time in the year. Only 3% of respondents are taken loan from co-operative credit societies for the reason repayment

time is long and remaining 42% of respondents using the self-finance for the cultivation.

Place of Sale the Tur

Place of sale the tur is determine the profit of the farmers most of the farmers have the awareness of sale the tur in the regulated market, the co-operative marketing societies are not popular in this area.

Table 11: Place of Sale the Tur

Place of Sale	No. of Respondents	% of Respondents
Own village	12	12%
Regulated Market	82	82%
Merchants Premises	06	06%
Co-operative marketing societies	0	0%
Total	100	100%

Source: Field survey (2024-25)

Based on the field survey carried out, it was found that 12% of the respondents disposed of their tur in their village itself to the village merchants premises or other intermediaries coming for procurement (Table-11) while 6% of the sample farmers chose to take their produce to the near by assembling centers in the hope of releasing better prices. The remaining 82% of the respondents were carrying their produce

to the regulated market. These are no co-operative marketing facilities available.

Recommended Minimum Support Price

Generally tur cultivation cost is high compare the market rate so, farmer were recommended the minimum support price is fix the government reasonable rate.

Table 12: Recommended Minimum Support Price

Point of Sale	No. of Respondents	% of Respondents
Below to 9000	20	20%
9000 to 10000	28	28%
10000 to 11000	34	34%
11000 & above	18	18%
Total	100	100%

Source: Field survey (2024-25)

The analysis of table-12 reveals that the chosen 100 respondents majority of the respondents were in the category of 10000 to 11000 i.e., with a share of 34% followed by the recommended price of Rs. 9000 to 10000 i.e., 28% of the respondents within the range of below Rs. 9000 respondents i.e., 20% . It also reveals that only 18% of the respondents were recommended the more than Rs.11000.

Discussions

To study the profit per Acre enjoyed by the farmers the cost of cultivation as estimated by the field survey in the Kalaburagi for the year 2024- 25 is made use of (Table-13). The various costs involved fell under

six categories Viz., cost of preparatory cultivation, cost of seeds and sowing, cost of fertilizer and labour, cost of after cultivation, cost of plant protection and cost of harvesting. Of the estimated cost per Acre Rs. 11250, cost of plant Protection alone comes to Rs. 4600, which accounts to 40.9% of the total cost of cultivation. The cost of harvesting amounted to Rs. 1850/- per Acre. Both these put together account for 57.4% of total cost of cultivation. The remaining 42.6% of cost was distributed among other heads. To these operating costs and fixed cost Rs. 3750/- were added and the total cost per acre came to Rs. 15000/-

Table 13: Cost of Cultivation of Tur in Kalaburagi District

Items	Expenditure Per Acre	% of Expenditure Per Acre
1. Preparatory Cultivation	900	8.00%
2. Seeds and Sowing	1050	9.3%
3. Fertilizer and Labour	1500	13.3%
4. After Cultivation	1350	12.00%
5. Plant Protection	4600	40.9%
6.. Harvesting	1850	16.5%
Total	11250	!100%

Source: Field survey (2024-25)

1. Operating cost	11250
2. Fixed cost	3750
Total cost of Cultivation	15000

According to the Field survey, the estimated Yield per Acre is between 3.5 and 4 quintals per Acre. Therefore, the yields of 4 Quintals have been considered for the objective of determining the profit per acre of tur in the Kalaburagi District.

Due to the high cost of production the profit per Acre from the sale of tur was at Rs. 15200/- (Table-14)

Table 14: Profit for Per Acre of Tur during 2024-25

Items	Expenditure Per Acre
Cost of Cultivation	15000
Yield of tur per Acre (In Quintals)	4.00
Minimum Support Price	7550
Total Sales	30200
Profit Per Acre	15200

Source: Field survey (2024-25)

Suggestions

Adoption of Branded Seeds

While traditional farming methods are still dominant in the region, farmers should be encouraged to use branded seeds that are high-yielding and disease-resistant. Using improved seeds would lead to better productivity, higher quality crops, and ultimately better market prices. Awareness campaigns on the benefits of using quality seeds can be conducted.

Loan Facility Against Produce

Providing loans to farmers against the security of their produce can be an effective way to help farmers manage their finances. This would allow farmers to wait for better prices rather than selling at low rates during the harvest season. It will also help to enhance

their bargaining power in the market and give them the flexibility to sell when the prices are higher.

Strict Supervision of Selling Methods

To promote healthy market competition and ensure that farmers get a fair price, strict supervision of selling practices should be implemented. This can be done through regulating commission agents and market dynamics to avoid monopolistic practices. By fostering a competitive environment, farmers will benefit from a more transparent and efficient pricing system.

Incentives for Post-Harvest Handling

Farmers should be provided with incentives to improve post-harvest handling techniques. Training

and support for methods like drying, grading, and storage can help maintain the quality of the tur. In times of bumper crops, the government should offer a minimum price guarantee (MPG), ensuring that farmers are not left at the mercy of falling prices during high production years.

Supply of New Varieties

The agriculture department should take immediate steps to ensure that newly developed, high-yielding varieties of tur are made available to farmers throughout the district. These varieties should be distributed directly to farmers, especially in rural areas, to encourage adoption. A focused effort in disseminating seeds of improved varieties can significantly boost production and benefit the overall farming community.

Credit Facilities for Marketing

Credit facilities for marketing should be extended to producers through co-operative and commercial banks. These credit facilities could be made available against warehouse receipts, issued either by Agricultural Produce Market Committees (APMCs) or any other government-certified godowns. This will help farmers in accessing financial support for transporting, storing, and marketing their produce without facing liquidity issues.

Consideration of Cost of Cultivation in MSP

The Minimum Support Price (MSP) set by the government should be closely aligned with the cost of cultivation. Farmers often face challenges due to fluctuating monsoon patterns, leading to variable yields. The MSP should factor in such uncertainties and be revised to ensure that it covers the true cost of production, including seeds, fertilizers, labor, and irrigation costs.

Early Announcement of MSP

To help farmers plan effectively, the Minimum Support Price should be announced well before the sowing season. This would enable farmers to choose the right crops to sow based on economic viability, reducing uncertainty and promoting informed decision-making.

Conclusion

The study concludes that the investment on operating cost and fixed cost are cost of cultivation

of tur. The profit of the farmers are depend upon the prices of tur in market, the minimum support prices are considered as an important pillar of Indian agricultural price policy rolled out with an intention of providing price security to farmers.

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Data Availability Statement

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Ethics Statement

This research did not involve human participants, animal subjects, or any material that requires ethical approval.

Informed Consent Statement

This study did not involve human participants, and therefore, informed consent was not required.

Permission to Reproduce Material from other

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Author Contributions

The sole author was responsible for the conceptualization, methodology, data collection, analysis, writing, and final approval of the manuscript.

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