

Original Research Article

Coconut Growers: Challenges faced and solutions proposed

Abstract

Aim: To analyse the challenges faced by the coconut growers and suggestion to overcome.

Research Design: Ex-post facto research design

Sample: Coconut growers of Coimbatore district, Simple random sampling

Methodology: A structured interview schedule was developed to collect the data from 200 respondents.

Results: ~~An Ex post facto research was employed and Simple random sampling technique was used to select the 200 coconut growers.~~ Ninety-eight percent of respondents voiced concerns about their insufficient understanding of various plant protection aspects, including chemicals, spray frequency, symptoms, and application methods. Ninety-two and a half percent of respondents are worried about the toxicity of plant protection to both cattle and humans. Additionally, the lack of nearby repair facilities (89%) and the belief that traditional methods are more effective (87%) add to the difficulties encountered by farmers. Ensuring Fair Market Prices for Produce" ranked highest (88%), showing that farmers prioritize stable prices to secure their income and reduce risks. "Technical Guidance on Coconut Farming" (76%) and "Timely Availability of Quality Inputs at Subsidized Rates" (75%) were also important, indicating the need for ongoing support and reliable inputs from the government.

Key words: Coconut growers, Challenges, Plant protection, Market price, Suggestions

Introduction

This study intends to analyse the production aspects of coconut cultivation in Coimbatore district of Tamil Nadu state. During the medieval ages, the coconut was known as "Nuxidica", the Indian nut. During the same period, it was also referred as Nargil tree, "the tree of life". Western literature mentioned the Malayalam name "Tenga" for the coconut palm which is related to Tamil 'Tennai' and believed to have been introduced from Sri Lanka. Its significance exceeds botanical classification, as the coconut holds cultural, economic and nutritional importance in India. India stands as the world's largest producer boasting nearly 31% share of global coconut production (Coconut Development Board 2021)

Coconut cultivation plays a vital role in India, significantly contributing to the nation's economy and agricultural sector. It supports millions of farmers, particularly in states like Kerala, Tamil Nadu, and Karnataka. The crop yields a variety of products, including copra, coconut oil, and coconut water, which are important for both domestic consumption and export. Coconuts are nutritionally rich, providing essential fats, fibre, and minerals. They also hold cultural importance, being prominently featured in religious ceremonies and festivals.

Comment [L1]: Integrate this sentence into the methodology part.

Comment [L2]: Indeed, coconut is an important commodity in India, but it would be more interesting if you could provide recent statistics such as the annual production trend, export earnings, areas planted, etc.

These statistics can help you build up your research problem.

Environmentally, coconut palms are beneficial for preventing soil erosion and thrive in coastal regions, serving as a natural defense against saltwater intrusion. Thus, coconut cultivation is a key component of India's agricultural landscape and economic security, with its uses extending across food and industrial sectors. Coconuts serve as primary raw materials for numerous industrial products, including value-added items used in daily life.

In Tamil Nadu, coconut is a crucial crop, and addressing pest and disease management is essential to maintaining high yields and ensuring farmer livelihoods. This study presents a detailed survey of the primary pests and diseases impacting coconut cultivation in western zone of Tamil Nadu, a major coconut-growing district in Tamil Nadu, which contributes significantly to the state's overall coconut production. The study also aims to identify various information sources utilized by coconut farmers to enhance their agricultural knowledge and practices.

Statement of the Problem

Analyzing the challenges faced by coconut farmers is crucial for boosting productivity, increasing profitability, and maintaining sustainability. Recognizing issues related to pest control, soil health, and climate variability can enhance yields, while tackling economic hurdles like unstable market prices and high costs ensures financial security. Comprehensive understanding about the challenges and suggestion to overcome guides policy, fosters research, and improves the livelihoods of coconut growers, ultimately reinforcing the long-term stability of the sector.

1. To analyse the challenges faced by the coconut growers and suggestion to overcome.

Methodology

An Ex-post facto research was employed for this study since the aim is to describe and analyze the challenges faced by the coconut growers. Having no control over the independent variables stands as the main characteristic of Ex-post facto and it reports what has happened without any manipulation. Coimbatore district constituted the universe for this study. Coimbatore district was chosen purposively partly due to predominant coconut cultivation. From the eleven blocks of the district three blocks of the district were chosen purposively and they were Pollachi South and Pollachi North blocks. From each blocks three villages were selected purposively. The blocks and villages selection were made based on the prominence of coconut cultivation. Simple random sampling technique was used to select the farmer respondents. Due to time and resource constraints, from each villages 10 per cent of the farmers were selected and in total 200 coconut growers were selected. Data were collected from 200 coconut growers from Coimbatore district of Tamil Nadu using a structured interview schedule.

Comment [L3]: Your introduction and statement of the problem highlighted the essence of the coconut industry and the importance of the interventions, like analysing the challenges and solutions and recognizing issues but it does not clearly state or identify the problem. What is the problem? What is the knowledge gap?

For example, the volume of coconut production is declining, and the like...

Comment [L4]: One of the important aspects of ex-post facto research is to determine the cause-and-effect, and one of its characteristics is to identify pre-existing conditions. While your research purposively selected Coimbatore district, you should describe what this district is all about in relation to coconut production. In your description you may include, significant statistics on coconut production in Coimbatore. You may also identify here the research problem or the knowledge gap that will serve as the basis in conducting your research.

Findings and Discussion

CHALLENGES FACED BY THE COCONUT GROWERS

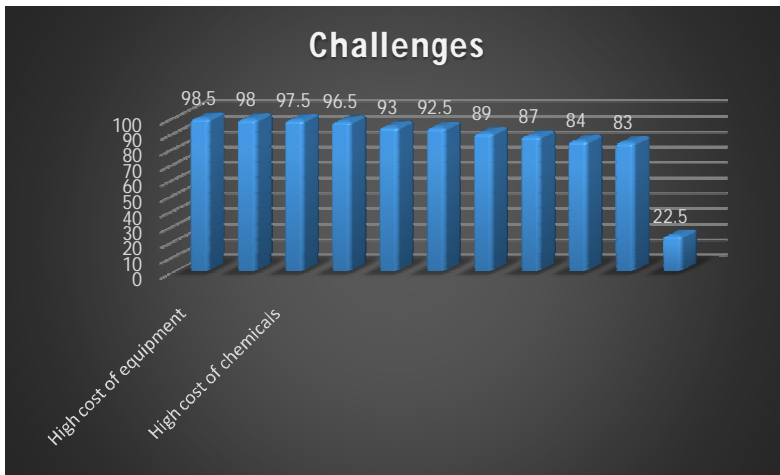
S.NO	Item	Number	Per cent	Rank
1	High cost of equipment	197	98.50	I
2	Lack of knowledge regarding plant protection measures	196	98.00	II
3	High cost of chemicals	195	97.50	III
4	Increased cost of chemicals and equipment	193	96.50	IV
5	Complicated name of chemicals	186	93.00	V
6	Poisons to cattle and human beings	185	92.50	VI
7	Lack of repairing facility at nearby places	178	89.00	VII
8	Traditional system seems to be better	174	87.00	VIII
9	Damaged to the crop due to plant protection measures	168	84.00	IX
10	Non-availability of plant protection equipments nearby places	166	83.00	X
11	Spray equipments not available	45	22.50	XI

Table 1. Distribution of respondents according to the challenges (n=200)

*Multiple responses

Fig 1 :Representing the Challenges Experienced by The Coconut Growers

Comment [L5]: Table 1 and Figure 1 depict the same content; you can present only one. The discussion of Table 1 or Figure 1, should be presented first.



The survey has highlighted various critical challenges affecting the adoption of plant protection measures (PPM). The foremost obstacle is the exorbitant cost of equipment, which affects 98.5% of respondents. Subsequently, 98% of respondents express concerns about their lack of knowledge regarding different aspects of PPM, such as chemicals, spray frequency, symptoms, and application technologies. The high cost of chemicals is ranked third, with 97.5% of respondents deeming it a significant issue. Moreover, 96.5% of respondents mention the increased costs associated with both chemicals and equipment, further exacerbating financial hardships. This results are in line with Anu (2017) and Deepika (2015).

Additionally, 93% of respondents are troubled by the complex names of chemicals, which could impede their proper usage and comprehension. Concerns about the toxicity of PPM to cattle and humans affect 92.5% of respondents. The absence of nearby repair facilities (89%) and the perception that traditional methods are more effective (87%) also contribute to the challenges faced by farmers. Moreover, 84% report crop damage due to PPM, while 83% struggle with the unavailability of equipment in local areas. Although less prevalent, the issue of spray equipment not being available still affects 22.5% of respondents. This results are in line with Priyanka (2018).

Collectively, these findings highlight a spectrum of financial, educational, and logistical barriers to effective plant protection. Addressing these issues through improved access to affordable equipment, enhanced education on PPM, and increased local support services could augment the adoption and efficacy of plant protection strategies. This results in line with the study conducted by Vedamurthy (2002) observed that the main constraints faced by the arecanut growers were price fluctuation, non-availability of labour, lack of finance and lack of knowledge.

Comment [L6]: The result and discussion do not comprehensively describe the cause and effect. There is no in-depth discussion on the identified challenges. Although you find similar reports from other studies about the identified challenges, but you should have also included reference data/similar reports about how these challenges emerged and affected the coconut industry.

This observation applies to all part of the result and discussion.

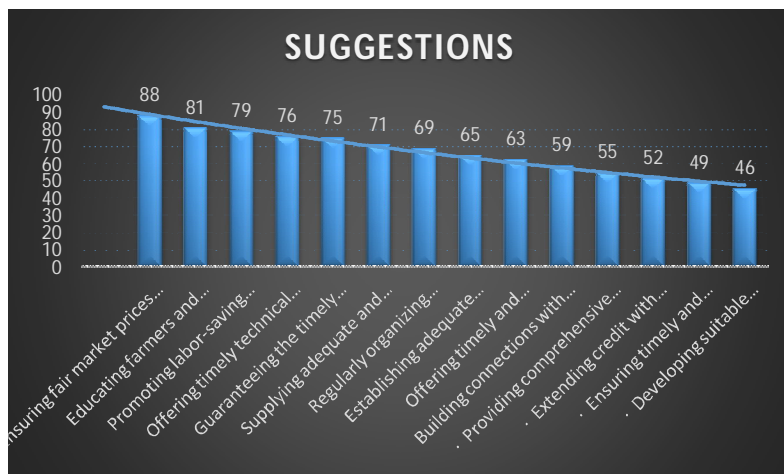
SUGGESTIONS TO OVERCOME THE CHALLENGES OF COCONUT GROWERS

Table 2. Distribution of respondents according to their suggestions (n=200)

SI. No.	Statements	Number	Per cent	Rank

1.	Ensuring fair market prices for produce.	175	88	I
2.	Educating farmers and providing affordable, easy-to-use pest and disease management technologies.	162	81	II
3.	Promoting labor-saving innovations like mulching techniques and coconut harvesting machinery.	158	79	III
4.	Offering timely technical guidance for effective coconut farming practices.	152	76	IV
5.	Guaranteeing the timely availability of quality inputs at subsidized rates.	150	75	V
6.	Supplying adequate and timely information on input availability, prices, and market trends.	142	71	VI
7.	Regularly organizing demonstration and training programs for skill enhancement.	138	69	VII
8.	Establishing adequate irrigation facilities.	130	65	VIII
9.	Offering timely and interest-free credit support.	125	63	IX
10.	Building connections with processing industries and ensuring adequate storage facilities.	118	59	X
11.	Providing comprehensive market information.	110	55	XI
12.	Extending credit with longer repayment terms.	103	52	XII
13.	Ensuring timely and sufficient cash payments.	98	49	XIII
14.	Developing suitable market infrastructure such as transportation facilities.	91	46	XIV

Fig 2: Representing the Distribution of respondents according to their suggestions



The responses are analyzed based on percentage share of respondents supporting each statement. This data is then used to rank the strategies, providing insights into which measures are considered most critical by stakeholders.

1. **Ensuring Fair Market Prices for Produce** ranked the highest (88%), indicating that farmers reflect guaranteed pricing a top priority. This reflects the high dependency on stable market prices to secure income and mitigate the risks associated with price fluctuations. This results are in similarity with Rashmi (2018) [and Gulshan (2022).
2. **Education on Pest and Disease Management (81%)** and **Promoting Labor-saving Innovations (79%)** emerged as the second and third most critical interventions, respectively. This suggests that farmers are pursuing knowledge and technology adoption to optimize productivity and reduce labor costs.
3. **Technical Guidance on Coconut Farming (76%)** and **Timely Availability of Quality Inputs at Subsidized Rates (75%)** were also rated highly. Farmers need constant advisory services and reliable input supply to implement best practices, underlining the significance of government support in these areas.
4. **Providing Adequate Information on Input Availability and Prices (71%)** was ranked sixth, representing that real-time access to information is essential for informed decision-making in farming.
5. **Regular Demonstrations and Training (69%)** was rated seventh, showing a need for continuous learning opportunities to help farmers keep pace with budding agricultural practices.
6. **Provision of Irrigation Facilities (65%)** was placed in the eighth rank. Given the water-intensive nature of coconut farming, having assured irrigation is crucial, predominantly in regions facing erratic rainfall patterns.
7. **Timely and Interest-free Credit Support (63%)** ranked ninth, reflecting the need for affordable financial options to manage both planned investments and unanticipated expenses.
8. **Linkages to Processing and Storage Facilities (59%)** came tenth, highlighting that access to value addition and proper storage is essential to reduce post-harvest losses and improve profitability.
9. **Provision of Comprehensive Market Information (55%)** ranked eleventh, underscoring the necessity for transparency in market operations.

10. **Longer Repayment Period for Credit (52%)** was considered moderately important. This suggests that while credit flexibility is necessary, other factors are perceived as more urgent by farmers.
11. **Ensuring Timely Cash Payments (49%)** ranked lower, implying that liquidity concerns are secondary compared to issues like input availability and technical guidance.
12. **Developing Market Infrastructure (46%)** ranked the lowest. This indicates that while infrastructure is essential, the immediate focus for farmers lies in accessing reliable inputs and technical support.

The analysis indicates that coconut farmers prioritize measures that directly impact their income and productivity. The results are in line with the findings of Thippisamy, (2007). Market price assurance, technical education, and timely availability of inputs are seen as critical for sustaining farming operations. Supportive credit policies and access to market infrastructure, while important, are secondary.

CONCLUSION

To maximize the effectiveness of interventions for coconut farmers, it is recommended to strengthen market support through mechanisms like guaranteed pricing, contract farming, or Minimum Support Price (MSP) schemes to minimize income risks; expand training programs on affordable technologies and labor-saving methods; establish a robust system for timely and subsidized delivery of high-quality inputs; introduce flexible, low-interest credit schemes to support investments in technologies and irrigation; and build linkages between farmers and processors while providing storage facilities for value addition. Implementing these strategies effectively can significantly enhance the profitability and sustainability of coconut farming.

FUTURE SCOPE OF THE STUDY

The study may be taken up with the coconut growers spread over the various climatic zones to have the comparative data and in depth analysis.

Comment [L7]: An analysis of the relationship between/among the challenges and solutions would provide a better understanding of the current condition of coconut production in Coimbatore. A discussion on this aspect would contribute more to the depth of knowledge about the coconut industry.

For example, how does the number 1 rank in the solution -**Ensuring Fair Market Prices for Produce** would contribute to addressing the number 1 challenge - The high cost of equipment.

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