

Livelihood Security Through Coconut Farming in Tumakuru District, Karnataka

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Abstract:

Coconut farming plays a vital role in the agrarian economy of India by providing income, employment, and livelihood security to rural households. Besides its importance in the production of copra and coconut oil, coconut is widely used in the manufacture of soaps, cosmetics, hair oil, and other industrial products, making it a valuable commercial crop. This study examines the contribution of coconut farming to the economic status and livelihood security of farmers in Tumakuru District, Karnataka. It analyzes farmers' perceptions of livelihood security derived from coconut cultivation and evaluates its role in improving income, employment opportunities, and overall socio-economic well-being. The study highlights coconut farming as a sustainable source of rural livelihood while identifying the opportunities and challenges affecting its profitability. The findings provide insights for policymakers to strengthen support mechanisms and promote sustainable coconut-based farming systems for enhancing farmers' livelihoods.

Keywords: livelihood security, sustainable development, coconut farming

Introduction

Agriculture has dominated the economic development of both developed and developing countries. India is an agriculture country. One third of population depends on the agriculture sector directly or indirectly. Since the time immemorial, agriculture has been the backbone of the Indian economy. Coconut is one of the most important and

abundant source of vegetable oil, which is used for edible and non- edible purpose. A vast number of small and marginal farmers in India rely on the coconut for their livelihood. Coconut farming is extremely important in India's rural economy. In terms of coconut output, India is the world's leading country. India is the world's third – largest producer of

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coconuts, with 1.78 million hectares under cultivation. The Philippines and Indonesia are the world's number one and second largest foundation of an essential life system for inland parts of India, the Philippines, Indonesia, and Thailand. India is currently ranked third in the world for coconut output, having produced 1609 billion nuts from a planted area of approximately 1089 million hectares. India is also the most productive coconut producing country in the world in terms of productivity. The coconut palm and its products are a major source of income for a big portion of the tropical rural population, and they total export profits of various Asian and Specific countries. It can be found in the Southeast Asia, India, Sri Lanka, the Pacific Territories, and the West Indies, among other humid tropics. Coconut is the most widely cultivated and used nut in the planet. One of the most useful plants is the coconut palm. It is grown in more than 80 countries throughout the world. The agriculture sector holds provides livelihoods, especially in the vat rural areas and contributes greatly to the domestic product (GDP) of India. India is one of the topmost coconuts producing

country. In addition to this coconut farming in India accounted for the world's 34 per cent production during 2021-22. Also, this refreshing fruit contributes Rs.307, 498 to India's GDP.

Review of Literature

E.A.Parameshwar Gupta- holds the view that coconut occupies a unique place

in the socio economic life of the people of the Indian sub-continent. According to him India would emerge as the second largest producer of coconut in the world before the close of the 20th century. .

Christopher Lourduraj et.al., Point out the decline in coconut production in Kerala and the increasing trend in area and production in Tamil Nadu. According to them the increasing trend in Tamil Nadu is due to changing trends in agriculture, non-availability of labour, escalation of wages, conversion of area under annual crops into coconut plantations higher profits from coconut etc. Researcher suggests regular fertilization and plant protection are a must to increase productivity.

Palanivelu and Muthukrishnan (2019) conduct research to identify factors influencing coconut farmers satisfaction with coconut production and marketing assist coconut producer marketing methods and make recommendation based on the studies findings or coconut farmers future prospects. Coconut producers in Coimbatore or clearly abandoning coconut production in favour of other agricultural goods. According to the findings, farmers satisfaction with coconut cultivation can be improved by giving sufficient training on the various agricultural operations included in coconut farming. This part of training will boost their production, which in turn will increase their satisfaction.

Sugata Ghose -a brief sketch of the different stages in the progress of coconut production in India since independence and points out the encouraging trend after the formation of the coconut development board in 1981. The efforts of the board resulted in increase in production and productivity and by 1996 total production was 13.9 billion nuts with the index reaching the all time high of 425.6 points. Productivity increase to 7779 nuts per hectare. Even though a slight decrease occurred during 1996 to 98 total production was maintained at the level of 13 billion nuts and India became the highest producer of coconut in the world.

Jose Mathew advocates the advantages of drip fertilization has a successful technology for integrating irrigation and fertilization. According to him irrigation and fertilization or the two most critical management factors that influence growth, yield and quality of agricultural crops. The use efficiency of these inputs is very low in India i.e 30 to 40 This leads to low crop productivity, degradation of soil health, and increases environmental pollution about from the wastage of substantial quantity of these costly and scares inputs. Adoption of drip fertigation technology has opened up new possibilities to optimize and integrate the use of water and fertilizer enabling to harness high crop yield and ensuring a healthy soil and environment.

R. P. Lyer, E.V.V Bhaskara Rao and M.P. Govinda Kutty- Are of the opinion that the rural economy of the state is very

much dependent upon coconut production, processing and marketing. Even though it is very difficult to ensure information on productivity of a crop like

Coconut, there is evidently a decline in yield. However, they are optimistic that the present efforts to preserve the high yield potential in subsequent generations of non-proponent elite palms throw issue culture will be rewarding if only grow years extent their cooperation for caring out scientific investigation for taking coconut to new levels of productivity.

Neema (2015) assessed the audition technology on improved agricultural production in Tanzania. The small holder farmers had negative attitude towards improve technologies for agricultural production. The study concluded that adoption of improve technologies had reduced agricultural production the study recommended that the Government under the Ministry of Agriculture should support training; dissemination improved technologies, extension officers and farmers.

Rajkumar and Thamil Selvan (2015) - exposure away the importance of coconut like a way to obtain a ready to eat essential oil so that has an Agro based raw materials for most sectors such as produce of covering powder, and handicrafts. 50% of the full total coconut creation is changed into copra. Coconut crop is usually elevated in India under wearing ground and weather

Circumstances in 17 says and a few union areas. Therefore the coconut Woods is usually versatile in its versatility to void variety of direct circumstances , coconut cultivation offers started to spread from the Western coastline of India to interior parts of Tamil Nadu specifically to Erode area and Thanjavur district. Within a comprehensive research of coconut advancement in India, records the various phases of coconut advancement.

M. Linson Mark's -study on marketing of coconuts in the A gasteewaram taluk of Kanyakumari district reveals that the prices which rule the coconut market do not reflect the changes in demand.

Thampan concludes his study pointing out that coconut forming in Kerala is generally profit able but the level of profit ability showed substantial increase when intercropping with or without livestock, component is practised.

Research Gap

All the studies reviewed that a positive relationship between coconut production, processing and marketing and also study A relationship between grown canopy size and shape to the productivity of the different coconut varieties. Our purpose is to took into the role of coconut farming on economic status of farmers. This study describe how the factors are influencing of coconut farming and enhancement of farmers status. This study therefore intends to fill the gap in the literature by showing a positive relationship between

coconut forming and economics status of farmers

Statement of the Problem

Coconut farming plays a significant role in the economic status of farmers. the coconut palm is highly versatile and valuable crop that provides numerous benefits to farmers the local economy. But Fluctuating market prices ,climate change, whether uncertainties and diseases in coconut plantations are significant factor that hazard in the consistent production and sale of coconuts. And also limited access modern farming techniques ,credit facilities, making it difficult for coconut farmers to enhance their productivity and reach profitable market. Addressing these challenges is essential to ensure the livelihood security and economic prosperity of coconut farmers.

Objectives of the Study

1. To analyse the farmers perception towards livelihood security through coconut farming.
2. To Study the role of coconut farming on economic status of farmers.
3. To Analyse the sustainable development of coconut farmers using coconut farming.

Research Methodology

The present study adopted a descriptive research design to examine the role of coconut farming in enhancing the livelihood security of farmers in Tumakuru District, Karnataka. A survey method was employed to collect primary

data from coconut farmers. The study population comprised farmers cultivating mature, bearing coconut plantations in the district. Using a simple random sampling technique, a sample of 50 respondents was selected. Primary data were collected through a structured interview schedule and a pre-tested questionnaire designed with simple and easily understandable questions to capture farmers' perceptions regarding livelihood security, income, and the socio-economic benefits of coconut cultivation. Secondary data were obtained from published books, research journals, government reports, articles, and relevant online sources to support the analysis. The collected data were classified, tabulated, and analyzed using appropriate statistical tools and techniques in accordance with the study objectives. The findings were interpreted to assess the contribution of coconut farming to farmers' livelihood security and to formulate appropriate conclusions and policy recommendations.

Coconut Farming

Coconut exists traditionally as a part of the rural food system. Major share of coconut production in India is contributed by millions of marginal farmers and about 10 million people are depending on coconut farming, processing and related activities. But the income from coconut alone is not sufficient for meeting total requirements of their families mainly because of the small size of holdings, declining productivity due to several of the commodity. Despite is, the farmers continue to coconut provides a regular

income although it is currently marginal. Coconut faming spread rapidly and became an industrial crop of economic importance during the 20th century. Production and marketing was handled by the Arab traders and white settlers in big plantations until the 19th century when small scale farmers started growing the crop. Currently coconut production is being undertaken by the smallholders farmers over 80 per cent of coastal farm households derive their livelihood directly or indirectly from the coconut. Coconut farming is considered to be one of the major livelihoods which support 60% farmers in is state. The coconut is not only significant in socio cultural needs of our society, but also has gained considerable importance in the national economy as a potential source of rural employment and income generation among the plantations crops.

Coconut-Based Farming Systems

Coconut-based farming systems (CBFS) are an integrated farming approach that enhances the productivity and sustainability of coconut cultivation while improving farmers' livelihood security. By integrating intercrops, livestock, and allied agricultural activities with coconut cultivation, CBFS promotes efficient resource utilization, increases farm income, and reduces production risks. This farming system contributes to food security by ensuring the availability of diverse food crops, nutritional security through the production of vitamin- and mineral-rich foods, employment

generation by creating year-round farm activities, and ecological sustainability through improved soil health, biodiversity conservation, and efficient use of natural resources.

In addition to coconut and its value-added products, CBFS supports the cultivation of complementary crops such as cereals, which provide carbohydrates, proteins, and fats; root and tuber crops, which serve as important sources of carbohydrates and minerals; and legumes, which are rich in proteins and healthy vegetable oils. Thus, coconut-based farming systems not only improve farm productivity and income but also strengthen the nutritional, economic, and environmental well-being of farming households.

Benefits of Coconut Farming

Coconut farming offers significant economic, social, and environmental benefits, making it an important source of livelihood for rural households. Commonly referred to as the "Tree of Life," the coconut palm provides a wide range of products, including edible nuts, coconut oil, coir, timber, fibre, medicinal products, beverages, handicrafts, and raw materials for industries such as cosmetics, soaps, and pharmaceuticals. Nearly every part of the coconut tree has commercial value, contributing to income generation and value addition.

As a long-term perennial crop, the coconut palm has an economic lifespan of 60–80 years and begins bearing fruits

within 6–7 years of planting. It provides a regular and dependable source of income, with harvesting generally carried out every 45–60 days. The consistent demand for coconut and its by-products ensures stable market opportunities for farmers.

Coconut cultivation also requires relatively low maintenance compared with many annual crops. Once established, coconut palms are resilient to varying climatic conditions and require moderate inputs of water, fertilizers, and plant protection measures, making cultivation economically viable.

An additional advantage of coconut farming is the opportunity for intercropping. The wide spacing between coconut palms allows farmers to cultivate crops such as cocoa, black pepper, banana, pineapple, and vegetables. This integrated farming approach enhances land-use efficiency, diversifies farm income, reduces production risks, and strengthens the overall livelihood security of farming households.

Coconut Scenario in Karnataka

Karnataka is one of the leading coconut-producing states in India, contributing significantly to the country's coconut cultivation and production. Coconut occupies a substantial share of the state's horticultural area and is the second most important horticultural crop after arecanut. The crop is cultivated across most districts, with Tumakuru, Hassan, Mandya, Chikkamagaluru, and Chitradurga emerging as major production

centres. Karnataka is also the country's largest producer of ball copra, with major trading activities taking place through Agricultural Produce Market Committee (APMC) markets, particularly in Tumakuru, Hassan, Chitradurga, and Chikkamagaluru.

The state has approximately 5.57 lakh hectares under coconut cultivation, producing around 5,897 million nuts, with an average productivity of about 10,581 nuts per hectare, which is higher than the national average. Karnataka contributes a substantial share of India's total coconut area and production, reflecting its importance in the national coconut economy. Among all districts, Tumakuru ranks first in both area under cultivation and coconut production, making it a major hub of coconut farming in the state. The widespread cultivation of coconut has generated significant employment and income opportunities, contributing to rural livelihoods and the overall economic development of Karnataka.

Coconut Farming in Tumakuru District

Tumakuru, located about 70 km northwest of Bengaluru, is widely known as the "Coconut City" or "Kalpataru Nadu" (Land of Coconut Trees) because of its extensive coconut cultivation. Agriculture is the primary occupation in the district, and a large proportion of farming households depend on coconut cultivation as their principal source of income and livelihood. Tumakuru is the leading coconut-producing district in

Karnataka, contributing a significant share of the state's total area under coconut cultivation and overall production.

The district possesses favourable agro-climatic conditions, including predominantly red and sandy loam soils, which support large-scale coconut cultivation. Major coconut-growing taluks include Tiptur, Turuvekere, Chikkanayakanahalli, Tumakuru, Gubbi, and Kunigal, where farmers rely extensively on coconut farming for their economic well-being. Besides the production of fresh coconuts, the district has developed a vibrant coconut-based industrial ecosystem comprising copra processing, coir products, pith blocks, coconut oil, handicrafts, particle boards, modular furniture, mattresses, and organic manure. Industrial clusters such as Nittur, Thyagattur, Adalagere, Tiptur, Kunigal, and Mallasandra support value addition and generate employment by procuring raw materials from local farmers.

The strong linkage between coconut cultivation and allied industries has made the crop a key driver of rural employment, income generation, and livelihood security in Tumakuru District. The district therefore serves as an ideal location for examining the contribution of coconut farming to sustainable rural livelihoods.

Coconut Growing Area in Tumakuru District

Coconut cultivation is widely practiced across the taluks of Tumakuru District, making it one of the largest coconut-

producing districts in Karnataka. The district has a total of 147,539 hectares under coconut cultivation, reflecting the crop's significant contribution to the rural economy and farmers' livelihoods.

Among the taluks, Gubbi has the largest area under coconut cultivation with 30,680 hectares, followed by Tiptur (30,111 hectares), Turuvekere (28,153 hectares), and Chikkanayakanahalli (27,700 hectares). These four taluks together account for the major share of coconut cultivation in the district and are recognized as the principal coconut-growing regions. Tumakuru Taluk has 13,458 hectares under coconut cultivation, while Kunigal and Sira account for 6,588 hectares and 7,047 hectares, respectively. Comparatively smaller areas are found in Madhugiri (1,642 hectares), Koratagere (1,710 hectares), and Pavagada (450 hectares).

The extensive area under coconut cultivation highlights the crop's importance as a major source of income, employment, and livelihood security for farming households in Tumakuru District. The concentration of coconut cultivation in taluks such as Gubbi, Tiptur, Turuvekere, and Chikkanayakanahalli has also encouraged the growth of coconut-based industries, thereby contributing to the district's agricultural and rural economic development.

LIVELIHOOD SECURITY

Cultivation of coconut crop is gradually increasing in Karnataka state

through coconut crop launched people are getting direct or indirect employment every part of the coconut tree is useful in economic perspective. For example the coconut tree gives Meera tender coconut dry coconut copra leaves trunk is also useful one or the other purpose coconut

palm provides food security and livelihood to large size of population in Indian country it is estimated that about 12 million people in India or dependent on the coconut sector in areas of cultivation processing and trading activities.

RESULT AND DISCUSSION:

Table 1: Classification of Respondents Based on Age

Age Group (Years)	F	%
Below 25	3	6.0
26–35	5	10.0
36–45	13	26.0
46–55	16	32.0
Above 55	13	26.0
Total	50	100.0

Table 1 presents the age-wise distribution of the respondents. The largest proportion of respondents (32%) belonged to the 46–55 years age group, followed by 36–45 years and above 55 years, each accounting for 26% of the sample. Respondents aged 26–35 years constituted 10%, while only 6% were below 25 years. The findings indicate that the majority of coconut farmers were middle-aged or older, suggesting that coconut farming is predominantly managed by experienced farmers. This age profile reflects the long-term nature of coconut cultivation and the dependence of

established farming households on coconut-based livelihoods.

Table 2. Primary Sources of Income from Coconut Farming

Source of Income	F	%
Copra production	39	78.0
Fresh coconut sales	5	10.0
Coconut water sales	4	8.0
Coconut oil production	1	2.0
Others	1	2.0
Total	50	100.0

Table 2 presents the primary sources of income derived from coconut farming among the respondents. A majority of the farmers (78%) reported copra production as their principal source of income, indicating its economic importance in the study area. Fresh coconut sales accounted for 10% of the respondents, while coconut water sales contributed 8%. Only 2% of the respondents each relied primarily on coconut oil production and other coconut-based activities. The findings suggest that copra production remains the dominant income-generating activity, reflecting its strong market demand and profitability in Tumakuru District.

Table 3: Farmers' Perception of Livelihood Security Through Coconut Farming

Perception of Livelihood Security	F	%
Very Insecure	3	6.0
Insecure	6	12.0
Neutral	9	18.0
Secure	28	56.0
Very Secure	4	8.0
Total	50	100.0

Table 3 presents the respondents' perceptions of livelihood security through coconut farming. More than half of the respondents (56%) reported that they felt **secure**, while an additional 8% indicated that they felt **very secure**, suggesting that coconut farming provides a stable source of livelihood for most farmers. In contrast, 12% of the respondents perceived themselves as **insecure**, and 6% as **very insecure**. Another 18% maintained a **neutral** opinion regarding their livelihood security. Overall, the findings indicate that nearly two-thirds (64%) of the respondents viewed coconut farming as a reliable means of ensuring livelihood security, highlighting its importance in sustaining rural households in Tumakuru District.

Conclusion

Livelihood security through coconut farming is an important aspect of rural economies in many tropical regions. Coconut cultivation offers a range of economic opportunities for farmers, providing a steady income source, employment opportunities, and avenues for diversification through value-added products. Furthermore, coconut farming contributes to food security, environmental sustainability, and integration with other agricultural activities, fostering a more strong and integrated farming system. However, various challenges such as market fluctuations, climate change impacts, pests, and limited access to resources and markets threaten the livelihood security

of coconut farmers. To ensure sustained livelihood security, there is a need for comprehensive support systems, including access to modern farming practices, financial services, and market linkages. Additionally, empowering coconut farmers through training, research, and government assistance can strengthen their resilience against uncertainties and enhance their economic status. By addressing these challenges and promoting sustainable coconut farming practices,

we can foster a developing coconut industry that benefits not only the farmers but also the broader rural communities reliant on this essential crop. Finally coconut farming helps sustainable development of coconut farmers.

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