

Policy Brief

Research • Publications • Policy Insights



Research Highlights

Page No.

- In-house Research 2 - 4
- In-house Publications 5
- External Research 6 - 13
- Events 14



**NATIONAL RESEARCH PROGRAMME ON PLANTATION
DEVELOPMENT (NRPPD)**

CENTRE FOR DEVELOPMENT STUDIES

NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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In-house Research

Study on the Performance of Rubber Producer Societies and its impact on growers (PI: Prof. Vinoj Abraham)

Aim of the Study

The study was undertaken to assess the effectiveness of Rubber Producer Societies (RPSs) in Kerala and examine whether they continue to serve as effective institutions for improving the economic and social welfare of small rubber growers.

Specifically, the study aimed to:

- Assess the performance of Rubber Producer Societies in terms of their structure, governance, infrastructure, financial sustainability, and functional activities.
- Examine the relationship between RPSs and growers, particularly whether membership improves productivity, profitability, market access, and livelihood outcomes compared to non-members.

Methodology

The study adopted an Institutional Analysis and Development (IAD) Framework developed by Elinor Ostrom to understand how institutional arrangements, governance structures, incentives, and linkages influence the functioning of RPSs and the outcomes for rubber growers.

Data Collection

The study primarily relied on primary survey data, supported by case studies and interviews.

The research consisted of two complementary components:

Part I: Performance of RPSs

- Survey of 100 randomly selected RPSs across four rubber zones covering six districts of Kerala.
- Interviews with Rubber Board officials.
- Case studies of selected RPSs.

Part II: Impact on Growers

- Survey of 572 rubber growers (296 RPS members & 276 non-members)
- Members and non-members from the same locality were compared to estimate the benefits of RPS membership.

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Findings

- The study found that the performance of RPSs has weakened over time, with many societies becoming inactive or poorly functioning despite their wide geographical coverage.
 - Most RPSs have inadequate physical infrastructure and limited financial capacity, restricting their ability to provide processing, storage, value addition, and marketing services to growers.
 - The activities of RPSs remain concentrated on rubber procurement and input distribution, while collective marketing, processing, and value-added activities are relatively limited.
 - Strong governance, active member participation, adequate infrastructure, and diversified economic activities were identified as the key determinants of better institutional performance.
 - RPS members generally have better access to technology, extension services, quality inputs, and marketing support than non-members.
 - Well-functioning RPSs improve growers' collective bargaining power and facilitate better market participation, although many societies have not fully realized their potential due to limited value addition and processing facilities.
 - The study concludes that revitalizing RPSs through improved governance, infrastructure, and diversified services is essential for enhancing the productivity, profitability, and sustainability of small rubber growers.
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In-house Research

Study on the Performance of Rubber Producer Societies and its impact on growers (PI: Prof. Vinoj Abraham)

Policy Recommendations

- Revitalize Rubber Producer Societies (RPSs) by strengthening institutional governance, improving transparency, leadership capacity, and member participation to enhance their effectiveness and sustainability.
 - Invest in infrastructure development by providing financial support for smoke houses, processing units, storage facilities, grading equipment, Dry Rubber Content (DRC) testing facilities, and transportation to promote value addition and improve service delivery.
 - Promote functional diversification by encouraging RPSs to expand beyond rubber procurement and input sales into processing, collective marketing, value-added rubber products, labour banks, and extension services to improve financial sustainability.
 - Strengthen institutional linkages among the Rubber Board, Rubber Producer Companies, financial institutions, research organizations, and local governments to provide integrated technical, financial, and marketing support to RPSs.
 - Reduce dependence on subsidies by enabling RPSs to develop sustainable revenue streams through diversified economic activities and improved business management rather than relying primarily on grants and external financial support.
 - Enhance member participation and inclusiveness by encouraging greater involvement of young farmers, women, and active growers in RPS governance and decision-making to improve institutional dynamism and long-term sustainability.
 - Shift RPSs from scheme-driven organizations to member-driven producer institutions, focusing on improving growers' productivity, profitability, market access, and resilience through continuous service delivery rather than functioning primarily as channels for government programmes.
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In-house Publications

Vinoj Abraham and Sachu Sara Sabu (2025), *Sagging, Solidarity: There is a crisis facing Kerala's rubber producer societies, Down to Earth*, 16 December 2025

Rubber Producer Societies (RPSs) were established to improve the bargaining power, market access, and livelihoods of India's smallholder rubber growers through collective action. However, many RPSs in Kerala are now experiencing institutional and financial decline, limiting their effectiveness.

Evidence from a study of 99 RPSs highlights challenges including weak governance, low member participation, inadequate infrastructure, limited value addition, and poor market integration. These constraints have reduced the ability of RPSs to deliver sustainable economic benefits to their members. This study argues that revitalising RPSs requires institutional reforms, investment in processing and storage infrastructure, professional management, digitalisation, stronger market linkages, and greater participation of women and young farmers.

Mohankumar S, K.J. Joseph and Prem Kumar (2025) *Production and Marketing of Seed Spices: A Study of Cumin and Coriander in Rajasthan*, Indian Journal of Agricultural Economics 80: 2 : 460-478.

Cumin and coriander are important export-oriented seed spices in India, but their exports have declined while imports have increased, leading to price volatility and reduced cultivation in Rajasthan. The withdrawal of extension and marketing support following trade liberalisation has further increased market uncertainty.

The study found that trader collusion in APMC auctions weakens farmers' bargaining power and reduces price realization. It emphasizes the need for strengthened institutional support, improved post-harvest technologies, and upgraded APMC infrastructure to international standards to enhance farmers' competitiveness and expand India's share in global seed spice markets.

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External Research Articles

Socio-Economic Factors Affecting Rubber Production and Farmers' Dependency on Rubber Plantations in Tripura, India

RUBBER

Prabhakar, & Bhattacharya, P. (2025)

POLICY IMPLICATIONS

Policies should focus on strengthening land tenure security and improving access to formal land titles, particularly for tribal and marginalized farmers. Efforts are needed to address land disputes and promote equitable land ownership, including greater recognition of women's land rights. Extension programmes should encourage skill development, improve access to agricultural training, and support labour availability to enhance rubber productivity. Promoting livelihood diversification and alternative income opportunities can reduce excessive dependence on rubber cultivation. Institutional support and access to credit can further contribute to the long-term sustainability of the rubber sector in Tripura.

Aim of the paper

The study examines the socio-economic factors influencing natural rubber production and the degree of farmers' dependency on rubber plantations in Tripura, India. It aims to identify the key determinants of rubber productivity and understand the factors that shape household reliance on rubber cultivation as a source of livelihood.

Key Findings

The study finds that land ownership and the number of labourers employed significantly increase rubber production. Farmers with secure land ownership are more likely to invest in plantation management and achieve higher productivity. Similarly, greater labour availability contributes positively to rubber output. The analysis also shows that farmers' dependency on rubber plantations is significantly influenced by age, rubber income, and occupation. Older farmers and those earning higher income from rubber are more dependent on rubber cultivation, while households engaged in alternative occupations tend to be less dependent on the sector. The study highlights that rubber cultivation plays an important role in improving livelihoods and reducing poverty among rural and tribal communities in Tripura.

Method of Study

The study was conducted in the Gomati and Sepahijala districts of Tripura, where rubber cultivation is highly concentrated. Primary data were collected from 355 rubber-growing households across eight villages using a structured questionnaire and stratified random sampling technique. Focus Group Discussions (FGDs) and interviews with officials from the Tripura Forest Development and Plantation Corporation (TFDPC) and the Tripura Rehabilitation Plantation Corporation (TRPC) were also conducted. Generalized Linear Models (GLM) and logistic regression techniques were used to analyse the factors affecting rubber production and farmers' dependency on rubber plantations.

Reference

Prabhakar, & Bhattacharya, P. (2025). Socio-economic factors affecting rubber production and farmers' dependency on rubber plantations in Tripura, India. *Journal of Land and Rural Studies*, 13(2), 182–196.

Read more

<https://doi.org/10.1177/23210249251328798>



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD) CENTRE FOR DEVELOPMENT STUDIES

External Research Articles

Challenges of Rubber Plantation Workers in Kerala: A Ground-Level Perspective on Financial Hardships and Quality of Life

RUBBER

Sarun, S. G., & George, B. (2025)

POLICY IMPLICATIONS

Policies should focus on reducing the financial vulnerability of rubber plantation workers through debt restructuring, affordable credit facilities, and improved wage support. Subsidized education programmes, scholarships, and educational assistance should be expanded to reduce the burden of children's education expenses. Strengthening access to affordable healthcare services, health insurance, and preventive care programmes can improve workers' well-being. Financial literacy initiatives and greater awareness of government welfare schemes can help workers manage household finances more effectively.

Aim of the paper

The study examines the financial challenges faced by rubber plantation workers in Kerala and evaluates how these challenges affect their quality of life. It seeks to identify the major sources of financial stress and assess their relative impact on the socio-economic well-being of plantation workers.

Key Findings

The study finds that education costs for children, dependence on high-interest loans, and loan repayment difficulties are the most severe financial challenges faced by rubber plantation workers in Kerala. Regression analysis reveals a significant negative relationship between financial challenges and workers' quality of life. Education costs have the strongest negative impact on quality of life, followed by dependence on high-interest loans and loan repayment difficulties. Healthcare costs and wage insufficiency also contribute significantly to financial stress and reduced well-being. The study further shows that financial challenges explain 65 percent of the variation in workers' quality-of-life scores, highlighting the extent to which economic insecurity affects their living conditions.

Method of Study

The study is based on both primary and secondary data. Primary data were collected through a structured questionnaire administered to 384 rubber plantation workers in Kerala using purposive sampling. Descriptive statistics, including mean scores, standard deviations, and Z-scores, were used to assess the severity of financial difficulties. Regression analysis was employed to examine the relationship between financial challenges and workers' quality of life.

Reference

Sarun, S. G., & George, B. (2025). Challenges of rubber plantation workers in Kerala: A ground-level perspective on financial hardships and quality of life. *Management Researcher*, 31(3), 43–50.

Read more

<https://imdrvm.com/article/imdr-article-1767935964.pdf>



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

Economic Sustainability of Organic Cultivation of Assam Tea Produced by Small-Scale Growers

TEA

Deka, N., & Goswami, K. (2021)

POLICY IMPLICATIONS

Policies should encourage the adoption of organic tea cultivation through targeted financial incentives, organic certification support, and extension services. Training programmes on nutrient management, pest control, and efficient resource utilization can help growers maintain stable yields after conversion. Introducing an organic premium for green tea leaves would improve the economic attractiveness of organic farming. Policymakers should also strengthen farmer cooperatives and producer organizations to facilitate certification, collective marketing, and better market access. In addition, promoting awareness of the environmental and health benefits of organic cultivation can support the long-term sustainability of the tea sector.

Aim of the paper

The study examines the economic sustainability of organic tea cultivation among small-scale tea growers in Assam, India. It compares the profitability of organic and conventional tea cultivation systems and evaluates whether organic conversion is a financially viable option for smallholders in the long run. The study also explores the broader socio-economic and environmental implications of organic tea cultivation.

Key Findings

The study finds that the cost of cultivation per kilogram of green tea leaves is slightly lower under organic cultivation (₹14.33/kg) than under conventional cultivation (₹14.86/kg). Organic growers can earn a higher annual net income of about ₹85,000 per hectare compared to ₹77,000 for conventional growers when yields remain at 15,000 kg per hectare. However, profitability declines if organic yields fall below this level. The analysis shows that organic tea cultivation is economically viable over a ten-year period, provided growers achieve stable yields through effective farm management practices. The introduction of an organic premium for green tea leaves could further improve profitability. The study also highlights that organic cultivation contributes to improved soil quality, reduced dependence on chemical inputs, and better environmental sustainability.

Method of Study

The study adopted a collective case study approach using mixed methods. Primary data were collected from small-scale tea growers in Assam through interviews, field observations, and focus group discussions. Qualitative analysis was used to understand the experiences and perceptions of growers, while quantitative analysis was conducted to estimate production costs, profitability, Net Present Value (NPV), and Benefit-Cost (B/C) ratios. Scenario analysis was also employed to evaluate the long-term economic viability of organic conversion under different yield and price conditions.

Reference

Deka, N., & Goswami, K. (2021). Economic sustainability of organic cultivation of Assam tea produced by small-scale growers. *Sustainable Production and Consumption*, 26, 111–125.

Read more

<https://doi.org/10.1016/j.spc.2020.09.020>



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

Influence of Small-Scale Tea Cultivation on Earnings of Bangladeshi Migrant Farmers in West Bengal, India

TEA

Roy, N. C., Biswas, D., & Dey, A. (2025).

POLICY IMPLICATIONS

Policies should strengthen institutional support for small-scale tea growers by improving access to government schemes, formal credit, and financial assistance. The study highlights the need for timely issuance of No Objection Certificates (NOCs), which are essential for accessing bank loans and government support programmes. Measures should also be taken to ensure fair and stable pricing of green tea leaves through effective implementation of price-fixing mechanisms and minimum support prices. Investments in branding, product diversification, logistics support, and the establishment of additional Bought Leaf Factories (BLFs) can improve market access and reduce post-harvest losses. Extending crop insurance coverage and providing training on tea leaf management would further enhance the sustainability and resilience of small-scale tea cultivation.

Aim of the paper

The study examines the impact of Small-Scale Tea Cultivation (STC) on the earnings and livelihood conditions of Bangladeshi migrant farmers in the Jalpaiguri region of West Bengal, India. It aims to assess whether engagement in tea cultivation has improved the economic status of migrant farmers and to compare their earnings with those of non-migrant small-scale tea cultivators.

Key Findings

The study finds that small-scale tea cultivation has significantly improved the earnings of Bangladeshi migrant farmers. The average earnings of migrant farmers increased considerably after adopting tea cultivation compared to their previous agricultural activities. Statistical analysis using the Wilcoxon Signed Ranks Test confirms a significant difference between earnings before and after tea cultivation. The study also reveals that migrant tea cultivators earn higher average income per acre than non-migrant tea cultivators in the region. Increased earnings from tea cultivation have contributed to improved living standards, better educational opportunities for children, and overall socio-economic advancement of migrant households. The findings further highlight that migrant farmers display strong risk-taking abilities and innovative farming practices, which have enhanced productivity and profitability.

Method of Study

The study is based on primary data collected from 31 Bangladeshi migrant small-scale tea cultivators and 31 non-migrant tea cultivators in the Jalpaiguri region. A stratified random sampling technique was adopted based on the size of tea plantations. Data were collected through semi-structured interviews conducted between June 2019 and March 2020. Descriptive statistics, Wilcoxon Signed Ranks Test, and Independent Sample t-Test were used to analyse changes in earnings and compare income levels between migrant and non-migrant cultivators.

Reference

Roy, N. C., Biswas, D., & Dey, A. (2025). Influence of small-scale tea cultivation on earnings of Bangladeshi migrant farmers in West Bengal, India. *Vikalpa*, 50(2), 157–165.

Read more

<https://doi.org/10.1177/02560909231208555>



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

The economic impact of sustainability standards on smallholder coffee producers: Evidence from Ethiopia

COFFEE

Berihun, T., & Gutema, P. (2025)

POLICY IMPLICATIONS

Policies should support wider access to Fairtrade and Organic certification by reducing compliance costs and providing technical assistance to smallholder farmers. Capacity-building programs for farmers and cooperatives can strengthen productivity, improve market participation, and enhance the benefits derived from certification. Governments and development agencies should also promote stronger market linkages and transparent value chains to ensure that certification premiums are effectively transmitted to producers. Strengthening cooperative management and institutional performance is equally important, as better-performing cooperatives enable farmers to obtain greater benefits from certification.



Aim of the paper

The study examines the economic impact of Voluntary Sustainability Standards (VSS), particularly Fairtrade and Organic double certification, on smallholder coffee farmers in the Sidama region of Ethiopia. It aims to assess whether certification improves key economic outcomes such as coffee yield, prices, income, and household welfare, while also considering the role of cooperative performance in shaping these outcomes.

Key Findings

The study finds that certified coffee farmers achieve higher coffee yields, receive better prices for their coffee, and obtain significantly larger dividend payments than non-certified farmers. Certification also contributes to higher coffee income, household income, and consumption expenditure, indicating improvements in farmers' livelihoods. However, these benefits are accompanied by increased production costs, mainly due to higher labour requirements associated with certification compliance. The study further shows that well-performing cooperatives enhance the benefits of certification, particularly in terms of coffee yield and dividends. Overall, Fairtrade and Organic certifications provide economic advantages to smallholder coffee producers, although the costs of certification remain an important challenge.

Method of Study

The study is based on a survey of 530 smallholder coffee-producing households in the Sidama region of Ethiopia, including both certified and non-certified farmers. A multistage random sampling technique was used for data collection. To estimate the economic impact of certification, the study employed Propensity Score Matching (PSM), Endogenous Treatment Regression (ETR), and Ordinary Least Squares (OLS) models. Cooperative performance indicators were also incorporated to account for institutional differences among cooperatives.

Reference

Berihun, T., & Gutema, P. (2025). The economic impact of sustainability standards on smallholder coffee producers: Evidence from Ethiopia. *Sustainable Production and Consumption*, 55, 268–284.

Read more

<https://doi.org/10.1016/j.spc.2025.02.022>

NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

The Effect of Modified Pruning and Planting Systems on Growth, Yield, Labour Use Efficiency and Economics of Arabica Coffee

COFFEE

Gokavi *et. al.*, (2021)

Aim of the paper

The study evaluates the impact of modified pruning methods and planting systems on the growth, yield, labour use efficiency, and economic performance of Arabica coffee (cv. Chandragiri) in India. The objective is to identify cultivation practices that can improve productivity while reducing labour requirements and production costs in coffee plantations.

Key Findings

The study finds that modified pruning methods, particularly cyclic and rock-n-roll pruning combined with high-density planting systems, significantly improve coffee productivity and labour efficiency. The hedge-row planting system with cyclic pruning recorded the highest clean coffee yield of 1,316 kg per hectare, compared with 797 kg per hectare under the traditional pruning and planting system. Modified pruning methods also reduced labour requirements by about 22–55 percent, helping to address labour shortages in coffee plantations. Economic analysis shows that the hedge-row system with cyclic pruning generated the highest net returns and a benefit-cost ratio of 1:2. The results indicate that modified pruning and planting systems can increase productivity, reduce production costs, and improve profitability without compromising yield.

Method of Study

The study was conducted at the Central Coffee Research Institute, Karnataka, India, over nine consecutive years from 2010 to 2018. A Randomized Complete Block Design (RCBD) with seven treatment combinations and three replications was used. Different planting systems and pruning methods were evaluated for their effects on growth parameters, clean coffee yield, labour use efficiency, and economic returns. Statistical analyses included Analysis of Variance (ANOVA) and correlation analysis to examine relationships between growth characteristics and yield performance.

Reference

Gokavi, N., Mote, K., Jayakumar, M., Raghuramulu, Y., & Surendran, U. (2021). The effect of modified pruning and planting systems on growth, yield, labour use efficiency and economics of Arabica coffee. *Scientia Horticulturae*, 276, 109764.

Read more

<https://doi.org/10.1016/j.scienta.2020.109764>

POLICY IMPLICATIONS

Policies should promote the adoption of labour-saving pruning methods such as cyclic and rock-n-roll pruning, particularly in regions facing labour shortages. Extension programmes should provide training on high-density planting systems and improved canopy management practices to enhance productivity and profitability. Research and development efforts should continue to refine location-specific pruning techniques suitable for different coffee-growing regions. Supporting the adoption of efficient production practices can help reduce cultivation costs, improve labour productivity, and strengthen the long-term sustainability of India's coffee sector.



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

Assessment of Sustainable Development for Green Cardamom Industry Using Fuzzy ISM-TOPSIS Approach

SPICES

Nalluri *et al.* (2025)

POLICY IMPLICATIONS

Policy measures should prioritize improved access to institutional credit, crop insurance, modern production technologies, quality planting materials, and rural infrastructure to enhance farm productivity and resilience. Expanding extension services and farmer training programmes through collaboration among research institutions, the Spices Board, and state agencies can improve technical knowledge and the adoption of climate-smart cultivation practices. Market-oriented interventions, including better market intelligence, transparent pricing mechanisms, value addition, quality certification, and export promotion, can enhance farmers' competitiveness and income. Furthermore, policies should encourage environmentally sustainable production, strengthen farmer organizations, and promote coordinated action among stakeholders to improve supply chain efficiency, ensure long-term profitability, and support inclusive rural development while maintaining the global competitiveness of Indian green cardamom.

Aim of the paper

This study aims to identify the key factors influencing the sustainable development of India's green cardamom industry, supporting approximately 3.5 million families. The study builds a hierarchical structural model of 16 sustainability factors and determines their interrelationships providing actionable insights for industry managers and policymakers to achieve long-term competitiveness and sustainability in the Indian green cardamom sector.

Key Findings

The study found that government policy and support emerged as the most critical sustainability driver positioned at the highest driving power zone in the MICMAC analysis. Lack of education and technical skills for farmers and lack of farm labor are the second and third most critical drivers both in Zone IV with high driving and dependence power directly affecting productivity, technology adoption and harvest capacity. The Fuzzy TOPSIS ranking revealed Market Competition and Lack of Healthy Seedlings as the top-ranked operational priorities. The ISM network revealed a 12-level hierarchy in which price instability is the most dependent outcome while supply chain management and logistics were the least prioritized factors for immediate intervention.

Method of Study

The study applied a novel hybrid Fuzzy ISM-TOPSIS methodology in four steps. First, a systematic literature review identified 16 sustainability factors confirmed through Cronbach's alpha reliability analysis. Second, a panel of 21 expert Decision-Makers from government, industry and academia in Karnataka, Kerala and Andhra Pradesh provided pairwise comparisons using a fuzzy linguistic scale. Third, Fuzzy ISM-MICMAC analysis built a hierarchical structural network. Finally, Fuzzy TOPSIS computed Closeness Coefficients across four criteria dimensions like economic, social, environmental and government to produce a definitive factor ranking.

Reference

Nalluri, V., BN, N. K., Kalvakolanu, S., Appana, S. M., & KS, V. K. (2025). Assessment of sustainable development for green cardamom industry using fuzzy ISM-TOPSIS approach. *Cogent Food & Agriculture*, 11(1), 2482141.

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<https://www.tandfonline.com/doi/full/10.1080/23311932.2025.2482141>



NATIONAL RESEARCH PROGRAMME ON PLANTATION DEVELOPMENT (NRPPD)

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External Research Articles

Production of Turmeric in North East Hill Region of India:

SPICES

A Value Chain Analysis

Singh *et al.* (2020)

POLICY IMPLICATIONS

Policy interventions should prioritize strengthening value addition, market access, and sustainable production practices to enhance the profitability of turmeric cultivation in Northeast India. Investment in village-level processing infrastructure, including slicers, dryers, grinders, and packaging units, should be encouraged, as processed turmeric products such as dry flakes and powder generate substantially higher returns than raw rhizomes. The successful organic certification model implemented in Sikkim should be scaled up across Mizoram, Meghalaya, and Manipur, given the price premium and higher net returns associated with certified organic turmeric. Developing scientific storage facilities is equally important to minimize post-harvest losses, which significantly reduce marketable surplus and farm income. Strengthening Farmer Producer Organisations (FPOs) and promoting direct marketing channels can improve farmers' bargaining power and increase their share of the consumer price by reducing intermediaries.

Aim of the paper

This study analyzes the economics of turmeric production and marketing in the North Eastern Hill Region (NEHR) of India covering Mizoram, Meghalaya, Manipur and Sikkim using a value chain approach. It examines costs and returns for raw and processed turmeric, estimates factor shares in production, maps value chain actors and marketing channels and assesses value addition at each stage. The findings aim to guide pre- and post-harvest interventions that improve farmers' share in the consumer's price.

Key Findings

Turmeric cultivation was found to be economically viable across all four study states, with Sikkim recording the highest profitability owing to its certified organic production, which realized the highest sale price (₹34.45/kg) and net return (₹17.07/kg), compared with Meghalaya (₹10.48/kg), Mizoram (₹9.07/kg), and Manipur (₹8.18/kg). Processing turmeric into dry flakes generated additional value, although processing costs ranged from ₹51.50/kg in Manipur to ₹89.70/kg in Mizoram. Human labour constituted the largest share of production costs (27.25–37.45%), followed by seed rhizomes (18.37–25.33%). Significant post-harvest losses (5.35–14.80 quintals per household) underscored the need for improved storage infrastructure. Value chain analysis revealed that shorter marketing channels, particularly direct producer-to-consumer and FPO-mediated channels, enabled farmers to retain a substantially higher share of the consumer's rupee (90–100% for raw turmeric) than longer intermediary-based channels for processed products (31–36%).

Method of Study

The study employed Cost and Return Analysis, based on the Cost A_1 – C_2 framework, to evaluate the economics of turmeric cultivation. Factor Share Analysis was used to estimate the contribution of major production inputs, to the total value of output. In addition, Value Chain Mapping was undertaken to examine the flow of turmeric from producers to consumers, identify key marketing actors and channels, and analyse value addition and price spread across different product forms.

Reference

Singh, R., Feroze, S. M., & Kumar, S. (2020). Production of turmeric in north East hill region of India: a value chain analysis. *Indian Journal of Agricultural Economics*, 75(4), 359-374.

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<https://ageconsearch.umn.edu/record/345145/?v=pdf>



NRPPD Events

Research Capacity Building Programme on Plantation and Development

Venue: Indian Institute of Entrepreneurship, Guwahati, Assam

Date: 27th October to 2nd November 2025.

The programme was jointly organised by the **National Research Programme on Plantation Development** (NRPPD), Centre for Development Studies (CDS), Kerala; the Omeo Kumar Das Institute of Social Change and Development (OKDISCD), Guwahati; and the Department of Geography, Sikkim University.

National Conference on Production, Employment and Marketing of Plantation Crops in India

Venue: Indian Institute of Entrepreneurship, Guwahati, Assam

Date: 3rd–4th November 2025

The programme was Jointly organised by the Omeo Kumar Das Institute of Social Change and Development (OKDISCD), Guwahati, the **National Research Programme on Plantation Development** (NRPPD), Centre for Development Studies (CDS), Kerala, and the Department of Geography, Sikkim University

Agricultural Transitions in the Age of Climate Change: The Role of Natural Capital Management

Date: 12th December 2025

Webinar Series: 12

by Prof. N. S. Cooray, Professor, Graduate School of International Relations (GSIR), International University of Japan

Chair: Prof. Vinoj Abraham

NRPPD Team

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**NATIONAL RESEARCH PROGRAMME ON PLANTATION
DEVELOPMENT (NRPPD)**

CENTRE FOR DEVELOPMENT STUDIES

National Research Programme on Plantation Development (NRPPD)

NRPPD at CDS undertakes policy-oriented research on all aspects of India's plantation sector. The programme is funded by the Ministry of Commerce, Government of India. For more information on

NRPPD please visit: <https://cds.edu/endowments/nrppd/>



CENTRE FOR DEVELOPMENT STUDIES

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