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PLANTATION AS CATALYST FOR SOCIO-ECONOMIC TRANSFORMATION IN JAMPUI HILLS, TRIPURA

Remruatpuii Tochhawng, Prof. Jayanta Choudhury

1.INTRODUCTION

Jampui Hills, nestled in the northeastern corner of Tripura, is home to the Mizo community and is blessed with a conducive subtropical climate and fertile red soil. This fertile land has long sustained agrarian livelihoods through the cultivation of cash crops such as oranges, coffee, and areca nut apart from vegetable produces such as pumpkin and ginger. Even though historically reliant on subsistence agriculture, the region has witnessed a gradual shift toward plantation-based cash crop cultivation. Therefore, this paper investigates the transformative role of plantations, particularly areca nut, in catalyzing economic growth, reshaping agrarian livelihoods, and influencing socio-economic patterns in the region.

2. OBJECTIVES

i. To study the impact of areca nut plantation on the socio-economic context of Jampui Hills.
ii. To find out challenges and limitations faced by areca nut plantations in Jampui Hills.

3. METHODOLOGY

This study employs a mixed approach, drawing upon archival materials, secondary data from government reports, academic studies, and journalistic sources, as well as insights from field-based data available in recent works. Comparative analysis is used to interpret the transitions from shifting cultivation to orange and later areca nut plantations. Special emphasis is given to socio-economic indicators such as income generation, land use patterns, and livelihood diversification, alongside ecological concerns documented in biodiversity studies of Tripura.

4. THE MIZO OF JAMPUI HILLS

Jampui Hills has been occupied by different Mizo groups and clans and no historical record of any other tribe inhabiting the area has been recorded so far. Vanpuia, a descendant of Tulera, was a powerful chief during his time. He migrated to Jampui Hills around 1780 CE from Arte in the Lushai Hills.[1] After this, different batches of different Mizo clans occupied the hill range with the last group under Sailo chiefs, and descendants of this group continue to occupy the area till today. The following table shows the present population of Mizo community in Jampui Hills.[2]

Sl. No	Villages	Household	Total Population	Male	Female
01	Vaisam	35	212	109	103
02	Hmawngchuan	120	583	293	290
03	Hmunpui	143	762	386	376
04	Tlaksih	44	257	142	115
05	Vanghmun	224	1224	598	626
06	Behliangchhip	184	884	445	439
07	Bangla Zion	26	203	111	142
08	Tlangsang	91	718	351	367
09	Sabual	82	1041	529	512
10	Phuldungsei	87	782	404	378
Grand Total		**1037**	**6716**	**3368**	**3348**

5. GEOGRAPHIC AND ECONOMIC CONTEXT OF JAMPUI HILLS

Situated at an altitude of approximately 1,000 meters, Jampui Hills enjoys a subtropical climate with well-distributed annual rainfall and mild temperature. The area is characterized by red fertile soil making it conducive for the

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cultivation of variety of perennial and seasonal crops. The blue-hued hill range of Jampui is situated on the eastern edge of Tripura and fall under the Kanchanpur sub-division in the North Tripura district. The Longai river forms the eastern border between Jampui Hills and Mizoram. From north to south, the hill ranges span approximately 75 kilometres. The southern edge of the hill range meets the Chittagong range (Kaslong Reserve, Bangladesh), while the northern edge slopes and gradually recedes into the valley until it meets the Vawmsual hill range which is situated between Damcherra and Balukcherra in North Tripura. To the west of Jampui Hills lies the Sakhan and Longtarai Hill ranges. These ranges run parallel in a north-south direction. Jampui Hills stands as the natural boundary between the two adjoining states of Tripura and Mizoram. The hill range's average elevation is approximately 970 metres above sea level. *Thaidawr* also known as Batlingchhip, the highest peak in Tripura which is about 3080 ft. is located in Jampui Hills. The area receives 760 millimetres of rainfall per year and the climate is mild and pleasant. The temperature drops to about 4 degrees celcius in winter and reaches 31 degrees celsius in summer.

Jampui Hills has an interesting history of socio-economic transformation in a geographically isolated and ethnically distinct region. Like all other tribal communities of North East India, agriculture formed the basic foundation of the economy in this area. For ages, the economy was sustained by *lo* (shifting cultivation), which is 'confined to felling down the jungles, burning it dibbling seeds among the ashes.' The other supplementary activities include hunting, domestication of animals, fishing, cottage industries, etc. Each household was capable of meeting its own basic needs. The standard of living was very simple in the early period, and the economy was to meet their day-to-day requirements. Like other tribal societies of the region, every aspect of their life was closely interwoven with *lo.*

Therefore, historically, the people of Jampui Hills practiced slash and burn cultivation or *lo neih*, and hence their economy was subsistence economy. However, with the introduction of education, and many becoming educated, there are now a number of families where at least one member is a government employee. This has greatly enhanced their economic condition. Simultaneously, the area has witnessed significant shifts in its economic base and social fabric over the past decades. One of the most important factors for this upward shift is the introduction of plantations and the economic growth it has brought with it.

6. HISTORICAL EVOLUTION OF PLANTATION ECONOMY

It all started when Raja Hrangvunga experimented growing oranges, jackfruits and mangoes in his garden in 1917. Others followed suit and within a few decades, Jampui Hills was full of orange gardens. In 1954 under the leadership of Lalngova, they established Jampui Orange Growers' Co-operative Society.[3] Today, only a few families still practice jhum cultivation which also is in a very small scale. Many government employees invest their money in orange, coffee and areca nut plantations.

6.1. From Subsistence to Commercial Agriculture: Orange Cultivation

The plantation economy of Jampui Hills began in earnest when Raja Hrangvunga introduced orange, jackfruit, and mango cultivation in 1917. By the mid-20th century, orange cultivation became widespread, and in 1954, the Jampui Orange Growers' Cooperative Society was established under Lalngova's leadership. The zenith of this agricultural success came in the 1980s when Jampui oranges achieved national recognition, securing first place in the Best Fruit Finals in New Delhi.[4] This accolade not only bolstered the economic prospects of local farmers but also catalysed a nascent tourism industry in the region. The annual Orange Festival emerged as a cultural and economic cornerstone, symbolizing the symbiosis between agricultural success and cultural identity. This period marked a significant shift in the socio-economic fabric of Jampui Hill, with increased income levels and exposure to external markets fostering a sense of economic optimism and cultural pride.

The collapse of orange cultivation in Jampui Hill presents a cautionary tale of the vulnerabilities inherent in monocultural agricultural systems. The rapid decline, attributed to a fungal blight, exposed not only the biological fragility of the crop but also the lack of resilience in the agricultural knowledge systems and practices of the region. According to a study conducted by Integrated Mountain Initiative and TERI in 2019, deforestation is the major cause for the mortality of orange tress in Jampui Hill.[5] Another study conducted by Gargi Sur, posits that farmers' negligence was the main reason of the failure. Her finding states that, 'the local farmers choose cultivating crops that require less maintenance. . . as the disease progressed, the farmers lacked the knowledge and skills required to protect the trees'.[6] The study has also indicated that the failure to sustain orange cultivation was not merely a result of pathogenic factors but also a consequence of systemic inadequacies in agricultural education, research support, and adaptive management practices. The inability of local farmers to effectively combat the blight highlights a critical gap between traditional agricultural knowledge and modern phytopathological understanding.

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6.2. Areca Nut Plantation and Economic Transformation

The transition to areca nut cultivation represents a significant pivot in the agricultural economy of Jampui Hill. According to the study conducted by Sur, this shift has been characterized by:

6.2.1. Increased Profitability: Farmers report substantially higher incomes from areca nut cultivation compared to the previous orange-based economy. The data indicates annual incomes have increased from approximately Rs. 60,000 per acre under orange cultivation to significantly higher figures with areca nuts.

6.2.2. Scale of Adoption: Approximately 400 households have transitioned to areca nut cultivation, utilizing over 900 hectares of land. This widespread adoption suggests a collective response to economic pressures and opportunities.

6.2.3. Productivity Metrics: The region boasts a productivity rate of 13 metric tonnes per hectare for areca nuts, indicating a high yield potential that has likely incentivized the transition.

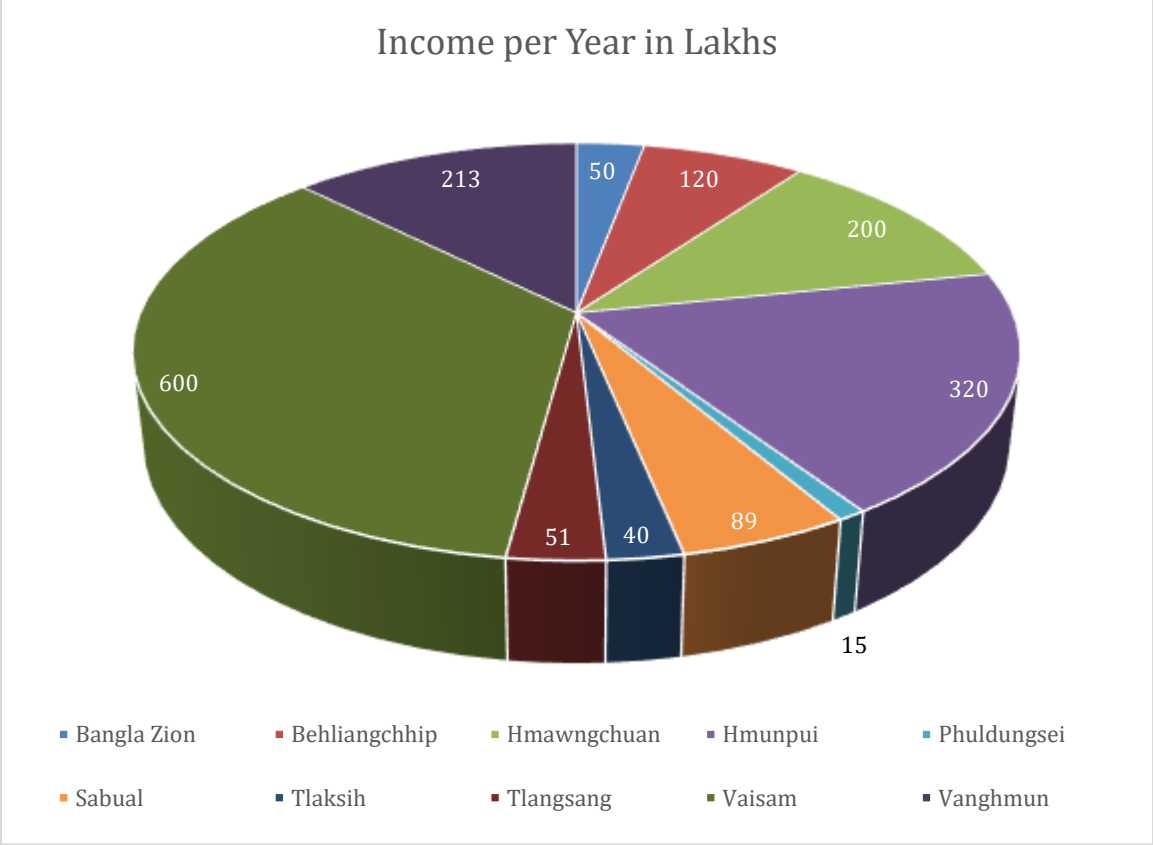
6.2.4. Market Dominance: Jampui Hills now accounts for about 90% of North Tripura's areca nut production,[7] signalling a shift from a regionally significant orange producer to a dominant player in the areca nut market.

An examination of village-wise income data (see table below) from areca nut cultivation reveals significant disparities:

- Vaisam village leads with an approximate income of 600 lakhs rupees.
- Hmunpui village follow with an approximate 320 lakhs rupees.
- Vanghmun generates about 213 lakhs rupees.
- Other villages range from 40 to 120 lakhs rupees in income.

These disparities raise critical questions about the equitable distribution of benefits from the agricultural transition. Factors such as land ownership patterns, access to capital for initial investment, and variations in soil quality or topography may contribute to these income differentials. This economic stratification within a relatively small geographical area warrants further investigation into the socio-economic dynamics that underpin agricultural success in the region.

Figure 1.0: Income from areca nut plantation as on 10 October 2023



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6.3. Ecological and Health Considerations of Areca Nut Plantation

While the economic benefits of areca nut cultivation are evident, this study argues for a more nuanced examination of its long-term sustainability and impact. Several critical points emerge:

6.3.1. Monocultural Vulnerability: The wholesale shift to areca nut cultivation replicates the monocultural model that proved disastrous with orange farming. This lack of agricultural diversification exposes the community to significant risk in the event of crop failure or market fluctuations.

6.3.2. Ecological Impact: The intensive cultivation of areca nut may have long-term implications for soil health and local biodiversity. There is a pressing need for research into the ecological footprint of this agricultural shift.

6.3.3. Health Concerns: The global health discourse surrounding the carcinogenic properties of areca nut raises ethical questions about the promotion and reliance on this crop as an economic mainstay. The potential long-term health costs to both producers and consumers must be weighed against the short-term economic gains.

7. SOCIO-ECONOMIC IMPACT OF ARECA NUT PLANTATION

The adoption of areca nut as the dominant cash crop in Jampui Hills has catalyzed significant socio-economic transformations. Its influence extends beyond the economic sphere, reshaping household structures, gender roles, education, and community relations.

7.1 Household Income and Standard of Living

Survey data indicates that households engaged in areca nut cultivation report an average annual income increase of 150–200% compared to their previous reliance on *lo neih* and orange plantation (see figure 1.0). In its peak, income from orange are below 10 lakhs in 8 villages.[8] This income surge has translated into improvements in material well-being, including the construction of concrete houses, ownership of vehicles, and access to modern consumer goods. The economic boost has also enabled households to diversify income streams through small-scale businesses, reinforcing financial resilience.

7.2 Education and Human Capital Development

With rising household incomes, there has been a marked shift toward investment in education. A majority of surveyed households (68%) reported that plantation profits are allocated toward school fees, private tuitions, and higher education outside Tripura. This trend is reflected in the growing number of degree holders emerging from the region. This trend has also resulted in higher enrollment rates in secondary and tertiary institutions, with a growing number of youths pursuing professional courses in Agartala, Aizawl, and Shillong.

Table 1.2: Higher education achievements among the Mizos in Jampui Hill. Data as on 10 October 2023.

Name of Village	Bachelor's degree Holders	Master's degree and Above Holders	Illiterate
Bangla Zion	9	6	0
Behliangchhip	94	37	6
Hmawngchuan	30	11	3
Hmunpui	69	51	2
Phuldungsei	25	6	0
Sabual	59	19	0
Tlaksih	12	12	16
Tlangsang	34	15	4
Vaisam	21	6	2
Vanghmun	178	64	3
TOTAL	531	227	36

7.3 Migration and Social Cohesion

Before the expansion of plantation-based livelihoods, seasonal and long-term outmigration was a common coping strategy among households in Jampui Hills, particularly during periods of low agricultural productivity. Many young men sought temporary work in urban centers such as Agartala, Aizawl, and Shillong to supplement subsistence farming incomes. The growth of areca nut plantations has altered this pattern. Rising agricultural incomes have reduced dependence on migration as a livelihood strategy, allowing more households to remain within the community

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throughout the year. This shift has strengthened social cohesion by sustaining intergenerational ties, enabling greater participation in community institutions, and preserving cultural practices.

However, the plantation economy has also introduced new forms of socio-economic differentiation. Land-rich households, with larger areas under plantation, capture disproportionately higher returns compared to marginal farmers or the landless, who often work as wage laborers in plantations owned by others. This uneven distribution of benefits has created visible income stratification, contributing to subtle divisions within previously cohesive village structures. Thus, while the plantation economy has reduced outward migration and reinforced cultural continuity, it has simultaneously deepened local inequalities.

8. CHALLENGES AND LIMITATIONS

Despite its economic benefits, areca nut plantation as the primary livelihood strategy faces multiple challenges that raise concerns about long-term sustainability.

8.1. Infrastructure Deficits: Poor transportation and storage infrastructure remain critical bottlenecks. The absence of all-weather roads in villages like Vaisam and Hmawngchuan raises transport costs and diminishes competitiveness. Farmers also face a lack of scientific storage facilities, resulting in quality degradation and reduced prices during glut periods.

8.2. Market Dependence and Price Volatility: The heavy reliance on external markets has made farmers vulnerable to fluctuating demand and price swings. A 2024 market crash saw local farmers' income fall by nearly 40%. The lack of organized cooperatives for areca nut, in contrast to the earlier Orange Growers' Co-operative Society, has further weakened bargaining power.

8.3. Ecological Degradation and Monocultural Risk: The shift to monoculture mirrors the vulnerabilities experienced during the collapse of orange cultivation. Research from similar tropical contexts indicates that long-term areca nut cultivation can reduce soil organic carbon and affect soil fertility when intensive inorganic fertilization is used. For instance, a study from China indicates that long-term areca nut cultivation reduces soil organic carbon (SOC) due to ongoing fertilization and changing soil conditions, which can degrade soil quality over time.[9] Other Indian studies focus on improving soil health in areca nut systems through integrated nutrient management and organic farming, suggesting that with proper practices, soil quality can be maintained or enhanced—not necessarily degraded.[10] While these findings are not specific to Jampui Hills, they raise important considerations for soil management in areca nut systems in the region. Without crop diversification, the community remains highly exposed to potential pest infestations or plant diseases.

8.4. Health Concerns: The International Agency for Research on Cancer classifies betel-quid chewing (with or without tobacco) and areca nut itself as carcinogenic to humans (Group 1),[11] and finds strong evidence that areca nut causes oral submucous fibrosis—a precancerous condition that can progress to oral cancer. WHO's Western Pacific office likewise highlights associations with cancers of the oral cavity and oesophagus.[12] While this does not directly affect producers, reliance on a health-risk commodity raises ethical, reputational, and potential regulatory concerns for producing communities, who may become entangled in negative public-health narratives and future market restrictions.

9. POLICY RECOMMENDATIONS

To secure sustainable and inclusive development in Jampui Hills, policy interventions must move beyond short-term profit maximization and address long-term socio-ecological resilience. Evidence from plantation transitions in Tripura shows that growth built on monocultures is highly vulnerable to disease, market volatility, and ecological degradation.[13] The following strategies are recommended:

9.1. Promoting Crop Diversification and Agroforestry

Crop diversification is essential to mitigate risks of monocultural collapse, as demonstrated by the decline of orange plantations in Jampui Hills. Integrated systems – such as intercropping areca nut with ginger, turmeric, black pepper, or shade-grown coffee – can enhance soil fertility and reduce vulnerability to pests and diseases. Agroforestry models combining plantation crops with native tree species would further safeguard biodiversity, prevent soil erosion, and align with the Tripura Biodiversity Board's recommendations for ecologically fragile zones.[14]

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9.2. Strengthening Cooperatives and Market Linkages

The success of the Orange Growers' Cooperative Society in the mid-20th century illustrates the potential of collective institutions. Reviving and modernizing cooperative structures can enhance farmers' bargaining power and ensure fair prices. Establishing Farmer Producer Organizations (FPOs) and regulated market yards would reduce dependence on intermediaries, who currently exploit transport and information asymmetries.[15]

9.3. Infrastructure Development

Poor transport connectivity remains a central bottleneck. Farmers face difficulties in transporting areca nut to distant markets, reducing profits and increasing post-harvest losses. Expanding rural infrastructure under schemes such as the Pradhan Mantri Gram Sadak Yojana (PMGSY) would integrate remote villages into wider supply chains and stabilize incomes (Government of India, 2021). Investment in cold storage and warehouse facilities is also crucial to reduce perishability risks and enhance market flexibility.

9.4. Research and Extension Support

The orange collapse underscores the dangers of inadequate extension support. Research institutes and agricultural universities should prioritize the development of disease-resistant areca nut varieties and provide farmer training in integrated pest management, soil fertility restoration, and climate adaptation.[16] Particular emphasis should be placed on capacity-building for women and youth to ensure equitable participation in plantation economies.[17]

9.5. Diversification of Livelihoods through Eco- and Agro-Tourism

The scenic landscape and cultural heritage of Jampui Hills position it as a potential hub for eco-tourism. Integrating plantations with homestays, cultural festivals, and biodiversity-based trails could generate complementary income and reduce dependence on a single crop. Agro-tourism initiatives, such as showcasing areca nut and coffee gardens, would not only diversify livelihoods but also strengthen the cultural economy of the region.[18]

10. CONCLUSION

The transformation of Jampui Hills from shifting cultivation (*lo*) to plantation agriculture represents a defining moment in its socio-economic history. Areca nut plantations have undeniably raised incomes, improved education, and enhanced living standards. However, the benefits are unevenly distributed, with wealth concentrated among large landholding households, while smaller farmers remain vulnerable. This economic transformation has also reshaped the ecological and cultural landscape of Jampui Hills. Once celebrated as the "Orange Paradise of Tripura," the region now faces the dual challenge of sustaining monocultural prosperity and safeguarding environmental integrity. Without proactive policy interventions, Jampui Hills risks repeating the cycle of boom and bust that characterized the orange economy. While plantations have served as a catalyst for economic growth, their long-term sustainability depends on diversification, institutional support, and balanced policy frameworks. The future of Jampui Hills lies in a model of development that harmonizes economic prosperity with ecological resilience and social equity.

ENDNOTES

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