

Sustainability of Tenant Farming : A Case Study of Mishing Tribe from Majuli in Assam

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Abstract

When agricultural land is unequally distributed, the land lease market can be essential in balancing factor endowments among agrarian families. Against this backdrop, the study examines the sustainability of tenant farming among the Mishing tribe in Majuli, Assam. The study traces the economic dynamics of tenant farming by comparing the cost-benefit ratios of red and winter paddy cultivation. The analysis is grounded in primary data collected from the Mishing community through structured questionnaires and observations, further supported by descriptive statistical methods. The findings reveal a stark contrast in the profitability of different crops under tenant farming conditions, highlighting the economic challenges and decisions faced by the Mishing farmers. The findings on the cost of cultivation and returns structure among owner and tenant farmers have highlighted the adjustment required in the existing leasing characteristics for optimal utilization of available resources. It suggests a critical need for policy interventions to optimize resource use and ensure equitable land distribution.

Introduction

In the context of agricultural economics, the land lease market significantly addresses the imbalance in factor endowments among farm households, especially where agricultural land is uneven. This scenario typically sees families with excess labor but insufficient land entering lease agreements with land-rich but labor-deficient households. Such arrangements ensure a better alignment of resources, improving agricultural productivity and enhancing equitable income distribution in rural settings.

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Sharecropping and fixed rent are the two prevalent forms of tenancy in agricultural land leasing. Fixed rent tenancy, where a tenant pays a pre-determined rent to the landowner, is often cited as more efficient than sharecropping. This efficiency stems from its resemblance to fixed costs, which do not impact the marginal decision-making processes of tenant farmers. Under fixed rent, tenants are incentivized to maximize production since they retain all additional outputs, promoting optimal land use and investment in improvements.

Conversely, where tenants retain only a portion of the harvest (commonly half), sharecropping agreements can distort tenants' incentives toward optimal land use. The sharecropping system can lead to a situation known as Marshallian inefficiency, where tenants may not extend their best efforts since they receive only a fraction of the produced value, thereby potentially leading to underutilization of the land (Otsuka, 2007; Stiglitz, 1974). Despite its theoretical drawbacks, sharecropping is widespread due to its inherent risk-sharing attributes, which are precious in agriculture and susceptible to environmental and market uncertainties. The prevalence of sharecropping, despite its inefficiencies, can be attributed to its function as a risk mitigation strategy. In contrast to fixed rent arrangements, where tenants bear the complete risk of crop failure, sharecropping allows for the distribution of risks between the landlord and the tenant (Bell, 1977; Sadoulet & de Janvry, 1995). This shared risk is particularly appealing in areas with high agricultural uncertainty.

Empirical findings regarding the efficiency of sharecropping versus fixed rent are mixed, reflecting the complexity of agricultural production contexts. While specific studies indicate fixed rent arrangements might lead to higher productivity (Eswaran & Kotwal, 1985; Shaban, 1987), others suggest minimal differences when factoring in various environmental and socioeconomic conditions (Bell & Zusman, 1976; Cheung, 1969). These empirical variations imply that local conditions significantly influence the efficiency of different tenancy arrangements. Despite theoretical preferences for fixed rent due to its alignment with tenants' production incentives, sharecropping's prevalence is underlined by its risk-sharing benefits, which remain critical in volatile agricultural environments. Consequently, local conditions, including risk levels and social norms, heavily dictate the optimal choice between sharecropping and fixed rent arrangements. This emphasizes the necessity for policy frameworks considering these local dynamics in improving land leasing markets' efficiency and equity.

Migration was a way of life for the tribal people due to political and economic conditions (Lusome & Bhagat, 2020). It is reported to be a critical livelihood diversification strategy. The Mishings in Assam represent one such migratory tribal community. The Mishing⁴ tribe, who once lived in the Siang and Lohit districts of Arunachal Pradesh, in the northern hills of the upper Brahmaputra basin (Kumari & Dutta, 2012), moved to the

⁴ The Mishings belong to Indo-Mongoloid group of tribes. The various paths they traversed along their migration to Assam. The most important ones were the Pasha-Shayang route of Dambuk, the Tone and Jaging hill route, the Pangin-Pasighat route of Bapi Hills, and the old way of Adi, Pasi, and Mebo of Reagan Hills in the Arunachal Pradesh of Northeast India.

plain areas of Assam at the beginning of the 12th century in search of livelihood. The migrated Mishings finally settled in many districts in Upper Assam, including Dhemaji, Lakhimpur, Dibrugarh, Sivasagar, Jorhat, Sonitpur, and Tinsukia. After the Bodos, the Mishings are the second-largest tribe in Assam (Patir & Thapa, 2020). The Mishings are referred to as Miris in the Constitution of India. Officially, on the list of Scheduled Tribes, they are recognized as Miri (GoI, 2011). The word 'Miri' has been used for ignorance (Bhandari, 1984); in the context of the present study, the term Mishing has been used instead of Miri.

The case study of the Mishing tribe on the Island of Majuli is significant due to the unique socio-economic and environmental challenges this area and its inhabitants face. According to the census, 2011, the tribal population in the Majuli district constitutes 46.38 per cent of the total population, while the Scheduled Tribes (ST) constitutes 23.93 per cent of the total population in the Lakhimpur district. The Mishing tribe in Majuli, predominantly residing along the banks of the Brahmaputra River, is profoundly impacted by climate change, especially in terms of flooding, which leads to significant socio-economic distress. This is compounded by their reliance on agriculture, a sector highly vulnerable to climate shifts such as changes in rainfall patterns and temperature (Das, 2015). The innovative adaptation strategies adopted by the Mishing, particularly their traditional stilt houses known as "*chang ghars*," showcase their ingenuity in facing these challenges. These houses, built on bamboo stilts, demonstrate a practical response to the frequent floods affecting the region. Additionally, Assam and Majuli, in particular, are identified as highly vulnerable to the impacts of climate change due to their unique geographical and environmental conditions. Nearly 40 per cent of Assam's total area, including Majuli, lies within a flood-prone zone, underlining the critical importance of understanding and supporting adaptive practices within these communities (Vijayaraghavan, 2021).

Historically, the Mishings migrated from Arunachal Pradesh and have undergone significant occupational shifts from fishing and rearing to farming. This transition, coupled with the lack of land ownership and reliance on tenant farming, highlights the socio-economic vulnerabilities faced by the community. The socio-economic conditions, including high poverty rates and reliance on agriculture for livelihood, exacerbate the community's vulnerability to environmental changes. Efforts towards understanding and enhancing such communities' resilience and adaptation strategies are crucial for mitigating the adverse impacts of climate change and ensuring sustainable development (Vijayaraghavan, 2021). This aspect makes it a significant area of study to understand the interaction between tribal communities and their changing environment and livelihood.

The study made an attempt to understand the economic valuation of tenant farming among the Mishing tribe in Majuli; the alteration in primary livelihood activities necessitates an in-depth analysis, especially as land scarcity compels reliance on tenant farming. This study aims to elucidate the effectiveness and implications of tenancy farming practices among the Mishing people, foregrounding the distribution patterns and outcomes necessitated by their unique socio-economic conditions.

Methodology

Study Area: Majuli

Majuli is a riverine island district in Assam. It lies between 26°45' N and 27°12' N latitude and between 93°39'E and 94°35'E longitude. The rivers viz. Lohit or *Kherkatia Xuti* is in the northeast, the Brahmaputra is in the south, and Subansiri is in the northwest, which forms the island's borders. The district is 487.55 square kilometers (sq km) in area (Land et al., 2017) and extends 80 kilometers (km) east to west and roughly 10-15 KM north to south. 1,67,304 people live in the area (Census of India, 2011). The island comprises of four divisions or *Mauzas* viz. Salmora, Kamalabari and Ahatguri. There are 248 cadastral villages spread throughout 20 Gaon Panchayats. The island is roughly between 85 and 90 meters above Mean Sea Level (MSL). The tributaries of the Brahmaputra River bring floods to Majuli. It receives a substantial number of clayey sediments and fine silt. It is included in the preliminary list of world heritage sites maintained by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

Method of Enquiry

The study employed purposive sampling to ensure a comprehensive and focused examination of the targeted population. In the first stage, the district of Majuli was selected purposively due to its unique demographic, geographical, and socio-economic characteristics, as outlined above. In the second-stage, Developmental Blocks were chosen. Majuli consists of two blocks: Majuli (Kamalabari) and Ujani Majuli (Jengraimukh), and Ujani Majuli Block, having the majority of the tribal population was chosen for a more concentrated study to ensure representativeness and manageability. In the third Stage, Gram Panchayats (GP) were selected. Within the Ujani Majuli Block, two out of eight GP, Ratnapura-Gayan and Sriram, were chosen randomly. This stage aimed to narrow down the study area further while maintaining a random element to ensure objectivity. In the final Stage, one village was selected at random from the two selected GPs. The selected villages for the study are Bonoriya Chopori consisting of 90 households from Ratnapura-Gayan GP and Bechamara village composed of 120 households from Bongaon GP. Within each village, 45 samples were chosen through purposive sampling, specifically targeting households to effectively meet the study's objectives and address the research questions. The case studies taken up helped to ensure a balanced and representative examination of the conditions and perspectives within the Mishing population in Majuli, thereby providing depth and specificity to the research findings.

Results and Interpretations

The Mishing tribes are indigenous to northeast India. These tribes have their roots in the Tibeto-Burmese, Proto-Austrioid, and various Indo-Mongolo ethnic groups. They can trace their lineage back to regions in South-East Asia and Mongolia. The integration of NER with the other parts of India at different historical periods led to socio-economic, political, and cultural transformations (Ali & Das, 2003). The indigenous people are

highly skilled in wood cane, agriculture, textiles, bamboo crafts, traditional medicine, and other sustainable means of subsistence. There is a gradual transformation in the life and livelihood of these tribal communities influenced by their interactions with the market economy, and occupational diversification has also emerged in tribal society (Marchang, 2019)

The Distributional Pattern of the Mishing Tribe

It is the tradition of the Mishing tribe to settle along the riverbank. Due to the periodic flooding and erosion caused by rivers in their habitats, they frequently retreat and change their place of residence. The migration of people from other communities in Mishing settlements since colonial times has also impacted the land use pattern of the Mishings.

Table 1: Major Scheduled Tribe’s Population in Assam

Scheduled Tribes (STs)	2001		2011	
	Total Popula- tion	Proportion to the Total ST Popula- tion	Total Popula- tion	Proportion to the Total ST Population
All Scheduled Tribes	3,308,570	100	3,884, 371	100
Bodo	1,352,771	40.9	1,586,776	40.85
Mishing	587,310	17.8	680,424	17.51
Karbi	353,513	10.7	430,452	11.08
Rabha	277,517	8.4	296,189	7.62
Kachari	235,881	7.1	253,344	6.52
Tiwa	170,622	5.2	200,915	5.17
Dimasa	110,976	3.4	122,663	3.15
Deori	41,161	1.2	43,750	1.12

Source: Census of India, 2001, 2011

The Mishing community is dispersed throughout Arunachal Pradesh and the state of Assam. The river valleys where the Mishing people lived were the Brahmaputra Valley in Assam, the Yarlung Valley in Tibet, the Sun Valley, and Subansiri in Arunachal Pradesh. Due to various historical circumstances, the tribe moved to the Eastern Himalayan region. The Mishings are found mostly concentrated in Lohit, Upper Siang, and Lower Siang districts in Arunachal Pradesh. They moved to the Assam plains and settled in northern Assam’s foothills, particularly in the Subansiri valley (Patir et al., 2020).

In Assam, the Dhemaji district has the highest settlement of the Mishing population, followed by the Lakhimpur district. The undivided district of Jorhat, which included Majuli, had a total 93,389 Mishing population as per the Census 2011. Subansiri is the principal tributary of Brahmaputra. The district of Lakhimpur is connected to Majuli

by the Brahmaputra River. The Mishing people migrated to the river island of Majuli and then progressively spread to the Upper Brahmaputra valley. Most of the Mishing settlements were located on the north bank of Majuli.

Table 2: District-Wise Population of Mishing in 2011

Sl. No	Districts	Population
1	Dhemaji	2,78,592
2	Lakhimpur	1,77,324
3	Sonitpur	48,713
4	Tinsukia	42,224
5	Dibrugarh	8,787
6	Sibsagar	20,117
7	Jorhat (Including Majuli)	93,389
8	Golaghat	14,024
Total		683,170

Source: Census, 2011

Status of Agricultural Economy of Majuli

Farming is the main occupation of the people of Majuli. As per records of the 2011 census, 80.63 percent of the total working population of the district is cultivators and agriculture workers. Paddy, oilseeds, Potato, Wheat, Garlic, Onion, Chilli, Banana, Pulses, Sugarcane, Vegetables...etc. are the main crops. Three types of Paddies are cultivated in this district, i.e., *Sali* (Winter), *Bao* (Red), and *Ahu* (Autumn) rice. The Net Cultivated Area (NCA)⁵ of the district is 38.58 per cent and 0.95 hectares is the average land holding of the farmers.

Table 3: Status of Farmers in Majuli in 2021

Sl. No.	Particulars	Percentage
1	Nonagricultural workers	3.25
2	Agricultural laboureres	22.75
3	Agricultural workers	74

Source: District Agricultural Office, Majuli, 2022

The cultivation of vegetables is the primary source of livelihood for the people living in the *char-chapari* areas of Majuli. The *Vokotchapori* site is well-known for the cultivation of Sugarcane. Due to the favorable climatic situation, the use of chemical fertilizer is significantly less, especially in the cultivation of Paddy. Therefore, the farming in this district is organic by default. The soil type of the district is mainly sandy loam to silty loam (New Alluvial soil.), and the average soil pH is 5.5.

⁵ Net CroppedArea(NCA): NCA is the Total area shown once a year.

The proportion of non-agricultural workers in the district is the lowest, while agriculture accommodates the highest proportion of the workforce. The economy of Majuli is based on farming activities.

Mishings are mostly riparians who make their living by farming, fishing, raising cattle, raising pigs, and other means. Before settling in the village under study, most people were engaged in the trade of carpentry. The people in the village of *Bonoriya Chapori* are involved in farming activities. As these households do not have ownership over cultivable land, they are, therefore, engaged in tenant farming.

Cost-Benefit Analysis of Tenant Farming of Paddy

In order to understand why tenant farming has continued in the two study villages despite the fact that the majority of households do not own cultivable land, a cost-benefit analysis of paddy farming by the sample households in the study area was taken up. The estimation showed that tenant farmers have a comparatively lower cost share to the overall cost of cultivation compared to owner farmers. Owner farmers reported slightly higher overall paddy cultivation costs than tenant farmers. The costs include the rental value of the leased land, the cost of labor, and the imputed worth of owned property. Tenant farmers' Benefit-cost Ratio (Gross Returns / Total Variable Cost) was somewhat more significant than the owner farmers.

Table 4: Landholdings and Cost-benefits of Tenant Farming
Panel (a): Landholdings (Unit = Hectares)

Sl. No.	Village	Tenant Farmers		Owner Farmers	
		Red Paddy	Winter Paddy	Red Paddy	Winter Paddy
1	V-1	0.678	0.530	0.537	0.470
2	V-2	0.694	0.666	0.572	0.510

Panel (b): Cost-Benefits (Unit = Rs.)

Sl. No.	Vil-lages	Tenant Farmers				Owner farmers			
		Cost		Income		Cost		Income	
		Red Paddy	Winter Paddy	Red Paddy	Winter Paddy	Red Paddy	Winter Paddy	Red Paddy	Winter Paddy
1	V-1	19,591	10,740	33,720	30,515	16,512	10,524	26,707	27,060
2	V-2	17,246	19,926	49,480	37,250	15,214	16,257	40,781	28,524

Source: Author's Field Study, 2023

Note:

V-1: Bonoriya Chapori

V-2: Bechamara

Calculation of costs

(Source: Commission for Agricultural Cost and Prices - CACP)

A1 = Human Labour (Causal and Permanent) + hired machinery + seeds + manure (owned and purchased) + fertilizers + plant protection chemicals + herbicides + irrigation charges + land tax + other taxes + depreciation on farm implements and buildings + interest on working capital + Transportation.

A2 = Cost A1 + Rent paid for the leased land.

B1 = A1 + Interest on the value of owned fixed capital assets (excluding land)

It is found that tenant farmers used agricultural inputs more efficiently than owner farmers, as evidenced by the more excellent ratio of Gross Returns to Total Cost (1.52) in the case of tenant farmers compared to owner farmers (1.21). In both the villages of Bonoriya Chapori and Bechamara, cultivating the red paddy is profitable. However, in the village of Bechamara, it is more advantageous because the village of Bechamarais comparatively better linked with connectivity and is significantly less prone to floods and wild animal attacks.

On the other hand, in the village of Bonoriya Chapori, the people have migrated in the recent past for better livelihood strategies, employment...etc. There has been a constant process of assimilation ever since the Mishings migrated to the plains of Assam for livelihood. The livelihood practices have undergone significant changes over the years. Their cultural and socio-economic strategies have changed due to the constant assimilation of the people with the other non-tribal groups in Assam (Pamegam, 1989). The changes due to the assimilation with others are visible in every aspect of their life not just in economic sphere. The island has witnessed the conversion of Mishings to Christianity (Kuli, 1998) over the years, which has also consequently led to the loss of many rites and rituals from society. While observing festivals, it is seen that the traditional tract has been changed in some places in Majuli. The various socio-cultural and political institutions of the Mishing society require attention for their structural development as these institutions symbolize the unity, identity, and integrity of the Mishing community (Morang, 2020).

Conclusion

The Mishing tribe is the second largest tribe in Assam, following the Bodos in Assam. In Assam, tenant farming is widespread. It is also a common practice among the Mishing people. The study tried to analyze the sustainability of tenant farming among the Mishing tribe in Majuli, underscoring the socio-economic intricacies tenant farmers face in land lease markets. The findings reveal a complex interplay between economic viability and agricultural productivity, highlighting the significant role of tenant farming in the livelihoods of the Mishing people.

Predominantly reliant on agriculture, the Mishing community faces unique challenges stemming from land scarcity and environmental vulnerabilities, notably frequent flooding and land erosion. The empirical findings emphasize a pronounced discrepancy between the economic outcomes of red and winter paddy cultivation under tenant farming arrangements. The findings on the cost of cultivation and returns structure among owner and tenant farmers have highlighted the adjustment required in the existing leasing characteristics for optimal utilization of available resources. Maximization of

income and cost minimization are observed for growing paddy in the study area. This might be due to the low investment made by tenant farmers in purchasing expensive farm machinery for land cultivation.

The analysis further elucidates the critical need for reforming existing leasing characteristics to enhance resource utilization and agricultural efficiency. The tenant farmers, despite low investment, have been able to realize a better cost-benefit ratio. While tenant farming remains their only source of sustenance, the absence of ownership over land holds them back from making significant investments in their leased land. The right to ownership becomes an important determinant in this regard for the community that has migrated to the study area and is dependent on tenant farming. Sociological factors, together with economic factors, determine and influence the farming practices of this migrant community on the island to a large extent. Long overdue tenancy reforms in Assam are one of the major reasons adversely affecting farm productivity. While steps have been taken in the state to update the land records under project Vasundhara, there are, serious challenges so far as tenancy reforms are brought in to augment better farm productivity in the agricultural sector across the state.

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