

Prospects and Challenges for Sustainable Resource Generation

3.1 Introduction

The spatial distribution of the marginal population in West Bengal displays notable discrepancies, characterized by concentrated settlements in specific localized regions (Sahoo *et al.*, 2023; Bhattacharjee, 2020; Lieten, 1992). Further, the inadequate distribution of per capita land has led to a considerable proportion of the population requiring assistance in maintaining their livelihoods (Singh, 2020; Ellis, 2008; Walsum, 2014). One of the major emphases of our study was directed at the socioeconomically disadvantaged households belonging to the Santal, Savar, Singh, and other marginal communities. It is important to note that the subject region exhibits a discernible manifestation of intersectionality within rural society (namely, in relation to the interplay between caste and gender dynamics). The research area under investigation has witnessed a deceleration in economic advancement due to social oppression among its residents. Moreover, the existence of gender prejudices significantly strains limited resources, thereby playing a pivotal role in the high incidence of poverty in rural regions. It is expected that states with higher sex ratios will have increased levels of poverty due to the existence of gender bias in work, earnings, nutrition, and education (Srivastava, 2018; Singh, 2016). In the current research, we have tried to shed light on various noteworthy aspects contributing to vulnerabilities that substantially impacted regional growth. Therefore, addressing this matter is crucial to facilitate economic empowerment within the specified area.

The need to respond to the present circumstances, whether they involve an immediate crisis of a humanitarian nature or a prolonged state of financial instability, requires the adoption of comprehensive strategies designed to promote the holistic advancement of the area. Chapter three of the present thesis aims to understand the causes of chronic poverty among marginalized communities of the studied area and explore potential remedies to improve the consequences.

3.1.1 The disadvantageous situation

The area considered in the present study has a long history of deprivation dating back to the pre-independence period. The unfavorable circumstances make the region more prone to vulnerability in terms of income and economic status. The caste-based intersectionality and societal divisions have made the region underprivileged and poverty-stricken. The marginal class people (Savar, Dhibor, Santal, and others) initially did not have land rights. However, the West Bengal Land Reforms Amendment Act (1979) aimed to provide land to those without land ownership and those involved in sharecropping with a reliable source of income (Bandyopadhyay, 1979; Bandyopadhyaya, 1981). Implementing land reforms in Bankura, Midnapore, and Purulia may have resulted in enormous success and wealth for marginal people. It is essential to mention that the majority of indigenous peoples (especially in rural areas) do not have legal title to the land they inhabit (Basu and Chatterjee, 2014; Bhattacharjee and Siddique, 2016). However, it should be noted that *Operation Barga's* success in fostering development and relieving poverty in *Jangal Mahal* has been seen to be insignificant (Ghatak and Ghatak, 2002). The essential transition approach may not have been fully implemented due to leaks (Mandal, 2022). Since gaining independence, it has become widely known that the JM area's central portion is particularly vulnerable to drought. In this context, efforts and strategies have been focused on minimizing the effects of the drought (Chattopadhyay, 2020) in the JM area. According to the research presented by Mondal (2019), the Land Capability Index (LCI) for the CDBs of Sarenga (0.73), Ranibandh (0.37), Khatra (0.81), and Raipur (0.61) is extremely low. This low LCI is attributed to several constraints, such as a lack of irrigation infrastructure, steep topography, stony wastes, and dense forest cover (Mondal, 2019). It is well known to the researchers that the study area (JM) has been encountering drought for a long time (Mondal, 2019; Sahoo *et al.*, 2023). As a result of drought, high evapotranspiration annexation rates and soil erosion were noticed in JM (Mandal, 2016; Mondal *et al.*, 2019). Consequently, the fertility of the land was significantly reduced, which severely impacted the population under study.

3.1.2 SDG 8 in the context of rural livelihood

It focuses on promoting full and productive employment, favorable working conditions, sustainable and inclusive economic growth, and a more equitable society. The indigenous population needs a reliable means of subsistence to meet their basic

needs and maintain their way of life (Ramesh, 2013; Banerjee and Ghosh, 2015). In the current study, the sample population consists entirely of people who live in forest adjacent rural areas. Therefore, prioritizing resource utilization efficiency through efficient land management for agroforestry and related activities is crucial to improving livelihoods and encouraging the development of small landholders.

In this regard, entrepreneurs should work with small-scale growers as co-investors to effectively alleviate rural poverty and achieve targeted outcomes, as Wani *et al.* (2017) reported. This collaboration would attempt to foster the development of greenery in small-scale plantations and sustainable management practices that can boost productivity and monetary consequences. Further, the opportunities to expand the forestry and forest product industries more equitably hold enormous promise for the long-term health of rural economies and people in the region.

3.2 The marginal communities and their cultural practices,

The effect of underdevelopment on spatial dynamics, contemporary social conflicts in the region, and the significance of woods in marginal settlements have all been the subject of numerous scholarly investigations in recent years (Mondal, 2019; Sultan, 2014; Dan, 2019; Bhattacharjee and Siddique, 2016). However, it is essential to note that the earlier works mainly addressed specific worries without proposing practical solutions to effectively manage and eliminate the associated dangers. The present study provides a theoretical framework for understanding the benefits and drawbacks of different economic approaches to developing a resilient rural economy. Additional direction on relevant policy and implementable measures that cater to local community needs in the current economic climate still needs to be addressed. Moreover, the current research suggests a "resilient economy" based on small-scale land ownership to protect economically dependent rural communities. The current work considers historical context and economic influences in analyzing the connection between spatial inequality, poverty-related depression, and the geographical features of a particular location. After that, this work discussed the information collection strategy for the field survey. The present chapter of the thesis examined the underlying causes of the widespread misery and poverty faced by the marginalized people of the study area. Additionally, an endeavour is made to study

the possibilities and available resources for enhancing the rural economy in the chosen location.

3.2.1 Livelihood patterns and mobility

The livelihood crisis related issue is complex and involves economic, political, and social inequalities that are interconnected and overlap (Hemmasi and Prorok, 2002). The causes for the historical underdevelopment of the densely forested area on the periphery of the Chhotanagpur Plateau impact the local livelihood pattern (Dwivedi and Chatterjee, 2023; Chatterjee, 2020). The elevation of the table land gradually increases from east to west, resulting in variations in soil productivity and water availability from west to east (Mondal *et al.*, 2019), as noted by Dhibor and Siddique (2017). The central issue in the area is caused mainly by unfair land distribution, unemployment, poor working conditions, and restricted access to extension facilities. The problem is linked to a scarcity of resources, prejudice, seasonality of work, exclusion, and the subsequent decline in quality (Chada and Pulla, 2014). The agricultural economy results in distress among marginalized households (Nambier, 2021; Ellis, 2004; Foster, 2007). This enhances the level of employment diversification in our study area. Effects of work-related pressure on one's means of living and the ability to change livelihoods result in the relocation of male members to urban areas. However, the recent trend is seasonally migrating to other agriculture-sound districts (Barddhaman, Purba Medinipur, and Howrah) to address the economic difficulties faced in native places. The prevalent technique of off-farm diversification is relocating from the original residence of one or more household members (Marchiori *et al.*, 2012; Ellis, 2000). According to Paavola (2008), migration has the potential to generate remittances through paid work, which can help alleviate poverty.

3.3 The conceptual framework of the current study

Rural livelihood refers to the theoretical framework that provides a comprehensive understanding of the various factors and dynamics that influence the livelihoods of rural people. Further, socioeconomic disparities heighten the likelihood of poverty in vulnerable households. There are a few other ways for them to make a living and become more resilient in coping with the crisis (Guha and Das, 2013). In this aspect,

disadvantaged people face inequalities from several corners, including gender, social, caste, and indignity (Olsson *et al.*, 2014). In this regard, the rural economy is experiencing distress due to a weak man-to-land ratio and a higher number of dependents, leading to unemployment, also known as pseudo employment. The abundance of woods, uncultivated land, and a lack of development initiatives contribute to the impoverished state of people in the context of income, education, and health (Mandal, 2022). In the studied area, most of the people practice intensive subsistence farming. It is a type of agricultural practice that involves cultivating a small plot of land using labour-intensive methods to produce enough food to sustain a family or community.

3.3.1 The concern of marginality and livelihood crisis

The concept of marginality is intricately linked to the notion of a livelihood crisis characterized by poverty and vulnerability. Addressing this issue aligns with the SDG of eradicating poverty and promoting resilient livelihoods. In the context of *Jangal Mahal*, a region facing significant socioeconomic challenges, the focus is on developing sustainable strategies to enhance the resilience of local livelihoods. The existence of socioeconomic inequality increases the poverty level in marginalized households. In this context, Guha and Das (2013) argue that a dearth of alternative livelihood options are available to tackle the crisis and promote resilience effectively. Inequality manifests itself across diverse scales, spanning national and local contexts (Bakshi, 2008; Sen, 2004; Cingano, 2014). People who experience social and economic disadvantage encounter various manifestations of inequality through the intersectionality of multiple factors, such as gender, socioeconomic class, caste, and indigenous identity (Olsson *et al.*, 2014). In the present study, we investigated the inherent unpredictability of existence and economic sustainability among marginalized people residing within rural areas of *Jangal Mahal*.

Based on previous studies, we have decided to investigate the multiple factors that contribute to the socioeconomic challenges faced by marginalized communities. The people under consideration are associated with diverse marginal communities, specifically Santal, Savar, and others in the *Jangal Mahal* region. Our research aims

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to examine the fundamental reasons that contribute to persistent poverty and provide feasible strategies for improving the rural economy.

Further, we have studied the variables that have contributed to the historical underdevelopment of the highly forested area on the periphery of the Chhotanagpur Plateau, namely the *Jangal Mahal* region in West Bengal. This area is part of the Red Corridor. The current study aims to conduct a comprehensive assessment of twelve specific CDBs in *Jangal Mahal*. The geographical area being examined is distinguished by its predominantly level topography, demonstrating a gradual rise in altitude as one moves from east to west in this region. The presence of this particular topographical characteristic leads to variations in regional development (in terms of soil fertility and access to water resources). According to a study conducted by Dhibor and Siddique (2017), the researchers have observed that inequities in land allocation, unemployment, unfavorable labour conditions, and limited access to extension services are the main variables that contribute to poverty in the region. The subject under consideration is multifaceted and involves a range of dimensions, including economic, political, and social inequality, which are intricately linked and interwoven (Hemmasi and Prorok, 2002). The crisis is marked by a scarcity of resources, discriminatory policies, instability in employment, social marginalization, inadequate nutrition, filthy living conditions, and interrelated decline (Chada and Pulla, 2014). Therefore, it can be observed that the male population engages in the process of migration to urban areas to confront the existing difficulties related to sustenance and economic stability in rural regions. The notion of off-farm diversification, characterized by expanding economic activities beyond the household's original location, has garnered considerable attention in the scholarly literature (Marchiori *et al.*, 2012; Ellis, 2000). Paavola (2008) posits that migration has been subject to arguments suggesting its potential to generate remittances through waged employment, thereby offering a means to ease the poverty trap. Therefore, it is crucial for policy instruments to efficiently address the problem of decreased demand while also considering the complex social factors (Sen and Himanshu, 2004).

Employment opportunities in rural areas are highly vulnerable to variations in meteorological conditions, leading to underdevelopment in specific locations. Further,

the restrictions of rural livelihood scope were influenced by various factors, such as inadequate access to arable land, unfavorable soil conditions, limited water supply during non-monsoonal periods, and excessive dependence on natural resources. Researchers have identified many anthropogenic elements in order to elucidate the underlying causes that contribute to the enduring nature of chronic poverty. The predominant agricultural practice in the area is paddy cultivation, which relies heavily on the monsoon season. The local populace typically engages in monocropping, focusing on the specific crop. An observation is that a limited group of farmers employs kitchen gardening techniques to cultivate potatoes and vegetables during the winter season, utilizing water from the 'Jor'¹ in particular communities. The surveyed persons' aggregate household income necessitates revision to fulfill their daily demands adequately. The issue of persistent poverty in the study site has been a prominent concern since the post-independence era.

Therefore, a considerable proportion of the participants in our study maintain the perception that forests serve as a crucial way of supporting their means of subsistence. The complex interconnections between indigenous societies' natural and social systems have negative consequences on multiple dimensions, including life-sustaining systems, socioeconomic advancement, and human well-being, within varying spatial and temporal contexts (Dieterle and Karsenty, 2020). The *Jangal Mahal* regions of West Bengal and Jharkhand demonstrate a significantly higher proportion of population in the Scheduled Caste community than the national average in India. Further, it is worth mentioning that the region being discussed consists of 15% Scheduled Tribes (STs) and 22% Scheduled Castes (SCs) of the total population. Notably, the percentages mentioned above correspond to 6% and 23.5% of the state's overall population (as reported by the Census of India in 2011) (Dan, 2015). The enduring socioeconomic issues experienced by people regarding income, education, and health outcomes can be attributed to ample timber resources, underutilized land, and insufficient development activities (Mandal, 2022). The main aim of the National Policy on Education (NPE 1986) was to improve educational access for marginalized population by eliminating disparities and fostering equal chances for education irrespective of socioeconomic status, gender, or social position (Guha and Das, 2013).

¹ Small water storage is used for cultivation in the non-perennial channel bed during the dry season.

3.4 A mixed-method approach

This method was used to analyze the data. A mixed method approach is used in this research (Creswell and Clark, 2011). This method is suitable for identifying different dimensions of inequality and clarifying the gendered role to contextualize social science research. Economic indicators and responses to respondents' unfavorable financial situations are the focus of the quantitative analysis section. Focus group discussions (FGD) and case studies, two types of qualitative research methods, were used to shed light on the cyclical nature of work and potential income streams. Economic activities, employment kinds, arable land, migratory patterns, commercial cropping, and educational attainment are considered for quantitative data analysis. In the current study, the researcher has incorporated focus group discussions (FGDs) and case studies (CS) to understand the individuals' perspectives on their struggles, challenges, and survival strategies for livelihood.

The analysis primarily concentrated on the fundamental elements that contribute to the problem at hand while also assessing the importance of SDG 8 in guaranteeing the long-term survival and well-being of marginal communities.

3.4.1 Quantitative data analysis

The information collected during the field survey was analyzed, and related results are depicted in the preceding sections of the present chapter.

Kruskal-Wallis test is a non-parametric version of One way ANOVA. Its use is usually justified because assumptions for parametric ANOVA are not met. This can lead to the overuse of Kruskal-Wallis ANOVA because, in many cases, a logarithmic transformation would normalize the errors. If conditions are met for a parametric test, then using a non-parametric test results in an unwarranted loss of power. The Kruskal-Wallis test in Table 3.1 is a better option only if the assumption of the approximate normality of observations cannot be met or if one is analyzing an ordinal variable. The null hypothesis assumes no statistically significant differences among the average total annual income for different CDBs.

Table 3.1: Kruskal-Wallis rank sum test

Response: average total annual income; Factor: CDBs
Kruskal-Wallis chi-squared = 127.56, df = 11, p-value < 2.2e-16

A non-parametric one-way ANOVA (Kruskal-Wallis test) in Table 3.1 reveals statistically significant differences among the average total annual income for different CDBs ($\chi^2 = 127.56$, p-value ≈ 0). After a substantial difference is detected, pairwise comparisons for each block are performed with a p-value correction for type-I error.

Table 3.2: Pairwise comparisons using the Wilcoxon rank sum test with continuity correction

	Baghmundi	Bandwan	Binpur-I	Binpur-II	Garhbeta-II	Jhalda-I	Jhargram	MDP Sadar	Raipur	Ranibandh	Sarenga
Baghmundi	1.000	-	-	-	-	-	-	-	-	-	-
Bandwan	1.30e-09	2.60e-11	-	-	-	-	-	-	-	-	-
Binpur-I	0.00024	2.70e-05	1.00000	-	-	-	-	-	-	-	-
Binpur-II	1.00000	1.00000	2.80e-06	0.00215	-	-	-	-	-	-	-
Garhbeta-II	0.61960	0.02862	3.60e-07	0.02295	0.913	-	-	-	-	-	-
Jhalda-I	0.01846	0.00312	0.17012	1.00000	0.018	1.000	-	-	-	-	-
Jhargram	1.00000	0.94640	0.0051	0.67868	0.8134	1.000	1.00000	-	-	-	-
MDP Sadar	1.00000	1.00000	1.10e-05	0.03288	1.000	1.000	0.45637	1.00000	-	-	-
Raipur	0.18654	0.59664	3.50e-12	3.00e-07	1.000	0.0001	1.10e-05	0.1452	0.034	-	-
Ranibandh	0.21879	0.36484	6.00e-10	4.30e-06	1.000	0.002	2.70e-05	0.0301	0.06	1.000	-
Sarenga	1.00000	1.00000	0.0080	0.15931	1.000	1.000	0.68618	1.00000	1.000	0.340	0.546

P value adjustment method: holm

Pairwise Wilcoxon tests with Holm’s p-value correction method were used in Table 3.2 to see whether there are significant differences in average total annual income between any two CDBs. There is a significant difference where the p-value is less than 0.05 (0.00024, 0.01846, 0.02862, 0.00312, and others). These CD blocks are shown in Table 3.2. It shows the differences in Baghmundi and Binpur-I, Jhalda-I and Baghmundi, Garhbeta-II and Bandwan CDBs. This means that these CDBs' livelihood means are different from those of other CDBs as they are statistically insignificant (p-value is more than 0.05).

Table 3.3: Distribution of Land Holdings

Land Sizes	Pattern of Landholdings	Percentage Distribution (%)
0	Landless	16
Upto 1 acre	Sharecropper	32
Upto 1 acre	Marginal	34
1-2 acres	Small	18
2.1-4 acres	Medium	0
Above 4 acres	Large	0

Source: Field survey

N=576 (100%)

Table 3.4: Major Sources of Income

Earning Sources	Ave. Earning/Month (Rs.)	Households in %
Agricultural labourer	2000	75
Factory worker	5000	27
Livestock	3000	92
Forest resources	2000	55
Cottage industry	2000	68
Shopkeeper	5000	12
Farming	2000	85

Source: Field survey

Table 3.4 shows the significant sources of income for households from several sources. This table shows different types of livelihood sources and monthly earnings from them. Moreover, this table has shown the total percentage of households that depend on such economic activities. And, table 3.3 shows the various kinds of land holdings. From these, it can be said that our respondents are get involved in multiple economic functions together. As, the average (ave.) monthly income is not sufficient from a particular source to carry out their livelihood.

A robust generalized linear model with Gaussian family and log link has been used in Table 3.5. As this model was fitted to this data. Robust regression can perform better with the outliers in the data, and a generalized linear model (GLM) can allow the error distribution to be any distribution other than the Gaussian distribution.

The multiple linear regression model is a particular case of GLM with Gaussian distribution and identity link. Since we have taken the log link, we cannot interpret the estimates of the regression coefficients in the same way we do for multiple linear regression. Table 3.5 shows a significant correlation between a number of dependents, total unemployed members, total earning members, daily wages, daily expenses, and production of paddy and potato with the total average annual income (Rs.). All these independent variables result in an average annual income (Rs.). For all the variables the significant level, ‘p- value’ is considered as ‘<0.05 or 0’.

Table 3.5: Robust generalized linear model with Gaussian family and log link

Response: Total average annual income (Rs.)

Coefficients

	Estimate	Std. Error	z value	p-value
(Intercept)	1.15e+01	3.24e-06	3544013	<2e-16 ***
No of dependents	2.10e-02	5.57e-07	37670	<2e-16 ***
Total unemployed members	-4.42e-02	4.55e-07	-97212	<2e-16 ***
Total earning members	-9.50e-03	3.19e-07	-29772	<2e-16 ***
Daily Wages	-2.75e-04	8.32e-09	-33100	<2e-16 ***
Daily Expenses	5.13e-04	1.42e-08	36140	<2e-16 ***
Paddy production (Quin/bigha)	2.68e-02	3.13e-07	85697	<2e-16 ***
Potato production (Quin/bigha)	-1.92e-04	2.41e-08	-7980	<2e-16 ***
--- Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1 Robustness weights w.r * w.x: 551 weights are ~ = 1. The remaining 25 ones are summarized as Min. 1st Qu. Median Mean 3rd Qu. Max. 0.5014 0.6046 0.6765 0.7544 0.9312 0.9956 Number of observations: 576 Fitted by method ‘Mqle’ (in 1 iterations)				

Table 3.6: Socioeconomic Characteristics of Sample Household

Characteristics	Bankura	Purulia	Paschim Medinipur	Jhargram
Female-headed households (%)	15	22	18	25
Literacy rate of households (%)	55	47	74	60
Households have more than 3 dependents (%)	68	70	48	78
Households suffer from poverty related issues year around (%)	90	95	45	85
The unemployed rate in households (%)	35	50	25	65
Average income of households (Rs/year)	120000	60000	180000	80000
Average land size of households (in acre)	1	2	2	<1
Average age of households (years)	35	30	35	32
Households having electricity connection (%)	100	100	95	85
Households having sanitation facilities (%)	45	40	70	25
Households using affordable drinking water (%)	60	45	80	55
Households below the poverty line (%)	60	80	40	95
Households reside in Pucca house (%)	8	0	15	0
Households live in semi-pucca houses (%)	70	55	85	15
Households live in kaccha houses (%)	30	45	15	85
Households possess 1 acre of arable land (%)	15	12	70	15
Households have irrigation sources in dry months (%)	15	8	75	10
Households practice multiple cropping (%)	15	5	70	10
Households practice monocropping (%)	85	95	30	90
Households possess above 1 acre of fallow land year around (%)	85	90	10	60
Households produce paddy below 5 quin/bigha (%)	90	90	10	90
Households produce potatoes commercially (%)	5	0	90	0
Households do not have a permanent income source (%)	90	95	65	95
Households need to depend on multiple economic activities (%)	100	100	65	100
Households work as agricultural laborers (%)	68	70	80	85
Households work as daily wagers in the unorganized sector (%)	25	65	20	90
Households are recently deprived of 100 Days of work (%)	55	66	78	75
Households benefited from 100 Days of work (%)	84	75	86	88
Households associated with handicraft production	60	90	20	60

Source: Field survey

Table 3.6 shows the several very important social as well as economic features of sample households.

3.4.2 Qualitative data analysis

Bankura Raipur BRP 5, Bankura, Bankura Simlapal BSP 3, Bankura Simlapal BSG 1, and Bankura Sarenga BSG 1. After that, content analysis (Zakaria and Zakaria, 2016) was done based on the responses from our participants who actively participated in case studies and FGDs. Case study research is sound in social science studies by Yin (2003) and Terrell (2016), who both offered in-depth explanations of its application. Risk factors for a given community or population at a given time can be determined by researchers, as can the numerous underlying processes that lead to the occurrence of threats and crises in a given region. Five people from underrepresented groups and different cultural backgrounds in the study area were studied in-depth as case studies. The writers examined the impact of migration and receiving industries, along with the factors that influence residents' ability to meet their basic needs. They looked at the challenges and uncertainties encountered by the people in the case studies (CS-1 to CS-5) and the value of having various livelihood options in the area.

3.4.2.1 Focus group discussions (FGDs)

Five focus group discussions were conducted to discuss the issues listed from five marginalized communities. The table provides a summary of the five FGDs. Bankura Sarenga— BSG 1, Bankura Ranibandh— BRB 2, Bankura Simlapal— BSP 3, Bankura Khatra— BKT 4, Bankura Raipur— BRP 5.

❖ Focus group discussions (FGDs)

i) Bankura Sarenga BSG 1 (duration:100minutes)

“The inhabitants of this region engage in agricultural activities, mainly focusing on the cultivation of paddy by monocropping farming, which is dependent on the monsoon season. These farming practices are carried out on tiny parcels of land allocated to people. Only a small portion of our population engages in the cultivation of Ravi crops. Insufficient revenue generated from agricultural activities contributes to the prevalence of

poverty-related challenges within our community. Therefore, it is necessary to relocate during the crisis periods of summer and winter to metropolitan areas such as Bengaluru, Delhi, and Hyderabad. Women are engaged as agricultural labour and regularly commute to provide financial assistance for their families. There is a limited range of employment opportunities available, except for daily wage laborers in the agriculture sector. Women do not hold the same social status as men. Female workers receive lower wages compared to their male counterparts. We assert the need for the state government to provide secure sources of livelihood.”

ii) BRB 2 (duration:90 minutes)

“The unequal distribution of land in our area stems from historical factors. Affluent landholders and the upper caste communities, specifically the zamindars, predominantly owned the fertile land. Despite receiving some land from our ancestors, the soil characteristics make it unsuitable for cropping. Nevertheless, the farm's size diminished due to the division of land among the siblings. Within this limited expanse of land, our primary agricultural output consists predominantly of Aman paddy, while throughout the remaining periods of the year, the land remains fallow. The marginal farmers in this region rely on climate factors for their agricultural activities.

On the other hand, significant portion of the landholders are involved in farm forestry, specifically pomology, which entails the cultivation of profitable plantations. Many people are employed at the aforementioned location as daily wage laborers. However, our locality exhibits a form of intersectionality that is based on caste. The phenomenon of rural-to-urban migration is currently more pronounced in the pursuit of alternative livelihoods. A considerable number of population engage in seasonal migration to neighboring urban areas. My eldest son is employed as a construction worker in Chennai, where he receives a monthly salary of Rs.8000. He could hardly visit home twice annually. Despite encountering significant challenges related to

payment, food, and living arrangements, he cannot depart from this situation for the sake of our family.....”

iii) BSP 3 (duration: 110 minutes)

“The participants expressed their reliance on agriculture and related industries. All the adult members of my family are actively engaged in agricultural activities on our family farm. The remaining time is spent participating in informal sector works as daily wage laborers. Each people get hired at a rate of Rs. 150 per day. The situation of education is not up to the mark. I have completed my education up to the sixth grade. And, my daughter was forced to quit her education due to other family members, as she has discontinued her college studies. Subsequently, she entered matrimony and actively contributed to her spouse's commercial endeavors. My son has discontinued his education and withdrew from school following the completion of the eleventh grade. Currently, he operates a grocery store within our local community. The labour market in our state is seeing a high level of competition and limited opportunities. A substantial number of population possess the necessary qualifications but currently need employment.

Consequently, this particular circumstance has decreased the motivation levels of students residing in rural areas to pursue further academic endeavors. Nevertheless, there was a notable increase in gross enrollment after 2011. A greater number of students are enrolling in professional programmes. Furthermore, our location may be conducive to entrepreneurial investment in the small-scale agroindustry”.

iv) BKT 4 (duration: 95 minutes)

“...the majority of people lack a valid record. Therefore, it is necessary to provide loans at a subsidized interest rate along with other government facilities to the farmers, given the widespread complaints

about banks not sanctioning loans. Consequently, people resort to acquiring loans from money lenders or microfinance institutions at a high interest rate of over 14% to address urgent financial needs. Several women within our community are associated with self-help groups (SHGs), through which they obtain access to financial loans.

Nevertheless, people utilize the funds for domestic expenditures and face challenges in meeting their repayment obligations to financial institutions within the designated timeframe. Several non-governmental organizations (NGOs) assist young people and women by providing skill-based training programmes. Furthermore, we respectfully urge the government to provide sufficient assistance by establishing cooperative organizations and financial institutions to foster self-sufficiency in our community.”

v) BRP 5 (duration:110 minutes)

"The gross monthly income of our family is not sufficient to meet the necessary financial resources for our children and pursue professional courses, considering the substantial costs associated with such endeavors." Recently, this region has witnessed the implementation of many state government development initiatives, such as Kanyashree, Rupashree, and others. These programmes were introduced following the administration change in 2011 to provide different scholarships to foster rural education. After the COVID-19 pandemic ended, fair-priced establishments consistently provided us with complimentary provisions. Leading a healthy lifestyle provides significant benefits to people. The available area has suboptimal soil quality and limited irrigation access, which presents challenges for implementing diverse agricultural practices. Male population typically earns their income from less paid occupations such as construction work, assisting roles, and migrant work. In addition, women participate in the cottage industry or engage in agricultural labour. Hence, adequate infrastructural facilities and participation from either the government

or entrepreneurs will enhance convenience under the given circumstances.”

Findings from the FGDs—

After careful analysis of field level information, we have reached to the following findings.

- i. Lack of alternative livelihoods:** The participants of the current study practice farming, mainly paddy, based on monsoonal rainfall. The per capita arable land allotment needs to be improved for their family's sustenance. Further, the available options to cope with this situation are the migration of males into the cities and the commuting of female members to nearby locations. There is a workplace bias in rural areas that women face daily.
- ii. Traditional livelihood patterns:** Historically, the people of this area have been deprived. Inequality in getting resources hampers the lives and livelihoods of these people. Excessive natural resource dependency is a significant reason behind the slow economic growth rate and poverty. Migration is a way of coping with irregular income. Large landholders use advanced extension facilities to generate massive revenue from their possessed land.
- iii. Education and livelihood interrelationship:** The educational standards of the respondents are low. They very much depend on cultivation. During the off-season, people in this area engage in daily wagers in informal sectors from where they earn a minimum wage. Since the 2011s, education and the economy have changed a bit because of new development projects, programmes, and special packages. According to the participants, this area can be a hub of agrobased industries based on locally available resources.
- iv. Agency building:** All the participants depend on farming and allied activities. The participants do not have a valid land document. As a result, the people of the study area face difficulties in getting loans from authorized banks. Therefore, they take loans at high interest rates (>14%) from microfinance or local money lenders. The women in this area are engaged in group work as SHGs. As

members, they initially get some loans for productive work, and many are compelled to give them to their husbands. However, some NGOs support the people in this area for skill-based work. The significant demands of the participants are on government aid to make them financially sound by enabling revenue-generating works.'

- v. **Developmental schemes for social change:** The participants' financial condition constrains their children's education. The recent government developmental projects are found to be helpful to them. 'Kanyashree Prakalpa (KP)' added a new arena in girls' education. Further, the reported child marriage is remarkably reduced now (Bisawas, 2021). The studied population is getting scoped up to college-level education. According to the participants, the available opportunities to strengthen the economic situation of the area and the necessary extension facilities to enable the infrastructure for upgrading the people's living standards.
- vi. **Circular mobility:** The participants mainly engage in agricultural activities focused on cultivating paddy crops, which heavily rely on the monsoonal rains. Moreover, there is a need for improvement in the per capita allocation of arable land to ensure the subsistence of their family. One potential strategy for addressing this dilemma involves the movement of males to urban areas while female members commute to adjacent localities. Women in rural communities encounter employment bias regularly.
- vii. **Slow economic growth:** These people have been severely deprived for a long time. These people's lives and means of subsistence are negatively impacted by resource inequality. One of the leading causes of poverty and the slow economic growth rate is excessive reliance on nature. One strategy for dealing with inconsistent income is migration. However, large landowners make enormous profits from their holdings by using cutting-edge extension facilities.
- viii. **Scope for local resource base small scale setups:** The responders' levels of education need to be improved. They are heavily reliant on farming. Further, people in this region work as daily wage labourers in informal sectors during the off-season, where they are paid minimum wage. Education and the economy

have changed since the 2011s due to new initiatives, plans, and special packages from the Government. Based on locally accessible resources, the participants believe that this area has the potential to become a center for agro-based industries.

- ix. Inaccessible formal loan sources:** Every participant is reliant on farming and related pursuits. There are no legitimate land records or documents of the participants, which makes it difficult to obtain loans from authorized institutions. As a consequence, the studied population is compelled to take out loans from local moneylenders or microfinance organizations at very high interest rates (>14% annual interest rate). They first receive some loans as members for their productive labour. Many of them are forced to give it to their spouses, though. A maximum of them are unable to pay it forward for the next time. NGOs do, however, assist those in this region with skill-based employment. The participants' main expectations are for government assistance so they can engage in revenue-generating work and become financially sound.
- x. Welfare schemes:** The participants' inability to pay for their children's education limits their options. They benefit from the most recent government development initiatives. Kanyashree opened up new educational opportunities for girls. Nowadays, reported child marriages are rare. They are enrolling in colleges and universities. The participants demanded opportunities to enhance the local economy. To do so, extension facilities are required to support the infrastructure that will raise living standards.

❖ **Case studies (CS)**

The author has discussed twenty case studies that include the elements contributing to marginalized population' vulnerability. It attempted to investigate the impact of poverty on the participants' daily lives, specifically in relation to their socioeconomic circumstances. This section also examined the factors influencing livelihood and other possibilities, migration and the industries that absorb migrants, the need for various livelihood options in the community, living under insecurity, and related difficulties.

i) Determinants of livelihood and alternative options (Case studies-1)

Mr. Shanti Sabar (Name changed), aged 29. He said:

"I come from a marginalized family, and I have two brothers. Despite living in the same house, we three brothers have separate kitchens. We also equitably split the land that belonged to our ancestors. Everybody possessed less than one acre (<1 acre) of arable land; the only crop grown there was Aman paddy, which was not enough for our family's survival. Therefore, I am employed as a daily wage worker at a local nursery. They gave me 140 rupees a day. I skipped school in class VII and never came back. My brothers follow a similar path. At 21, I married. In addition, we have two kids. They are now in school. My wife works as a daily wage earner in the brick industry. Her daily wage is Rs. 180. However, do not get work every day. We face problems during the monsoon and summer months due to a suitable living place and a scarcity of drinking water. Unlike my brothers, I have chosen not to relocate to the city due to my responsibilities toward my aging parents and children. We require some financial aid to initiate a small-scale business. Furthermore, banks are reluctant to provide us with financial assistance." (Field notes, June 2022).

According to Mr. Shanti's statement, the family partition gradually decreased the land's size. This section discusses the summertime drinking water dilemma. They also belong to a marginalized community. Their family's marginal status stems from their low monthly income and reliance on monsoon-based monocropping. They require a higher level of education. The pay from waged jobs is significantly lower. Many people in this region migrate to urban areas for better employment opportunities.

ii) Migration and absorbing sectors (CS-2)

NitaiKalundi (Name changed), age 36 years. He said:

"I finished my studies after class IX. After that I used to work as a labourer for a vegetable trader. I used to get Rs. 100 a day for ten

hours of work back then. I currently work as a labourer and migrant worker at a Mumbai based construction company. And, I could make Rs. 10,000 monthly, which I use to pay for housing and fooding. I went there via a middleman with a few of my neighbours. My father plays an instrument in a local band; they perform at marriages and Bengali festivals, called "dhakis²." He earns Rs. 300 daily; sometimes it varies according to demand. My three sisters got married less than 18 years before their class VIII. My wife works as a seasonal farm worker. Therefore, she needs to commute. In April, May, September, October, January, and February, there are no jobs in our area. Since there is an emerging need for professional and technical education. And we cannot provide our kids with the financial support they need for their education.” (Field notes, June 2022).

Mr. Nitai's narrative indicates the existence of certain restrictions. For example, marginality in the area results from a lack of employment options for nearly half a year. Therefore, people must work in low-paying jobs to survive. The lack of support forces them to stop their schooling early.

iii) Necessities of diversified livelihood options in the locality (CS-3)

Mr. Sarat Mahato (Name changed), age 35 years. He said:

"I try to make use of the land I possess. The cropland does not have any such irrigation systems. And I studied up to XII standards. We practice monsoon-based Aman-paddy cultivation. However, I transformed my cropping field into two fruit gardens, providing sufficient income for my livelihood. Twenty workers permanently employ me on a monthly salary basis. We grow pomegranates, bananas, plums, and mangos without chemical fertilizers. I also make about Rs. 20,000 a week. I suggest people adopt this approach and increase their income.” (Field notes, June 2022)

Mr. Sarat, a native of the studied region. He completed his higher secondary education. He inherited his father's passion for pomiculture and two fruit gardens

²*Dhakis* who play drums

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(pomoculture) on thirty bighas of land in CDB, Bankura district. In addition, Mr. Das paid twenty workers a monthly wage to tend to the gardens. He uses no fertilizers to grow pomegranates, bananas, mangoes, or plums. Mr. Sarat exclusively uses "compost manure," or organic manure. He encourages his neighbors to do the same for a steady income.

iv) Insecure life and associated vulnerabilities (CS-4)

Ratna Murmu (name changed) is a 22-year-old girl. She said:

“I make Rs. 150 a day working as an agricultural labourer in the nearby villages. At sixteen, I got marriage. But later on, it broke up. I moved into my parents' house after that. At the age of fifteen, I left school to assist my father financially. My four siblings are here. My two brothers are migrant labourers in Hyderabad and Bengaluru's metro areas. After eighth grade (VIII), they dropped out to help our father. We do not own any cropping land. However, we work as sharecroppers.” (Field notes, June 2022).

Ratna claims that she left school at fifteen to provide financial assistance for her family (15 years old). She now earns Rs. 150 a day working as a seasonal agricultural labourer in neighboring communities. They do not own any land; they are sharecroppers. She got married when she was sixteen years old. Her brother is a migrant labourer who worked in Bengaluru, Hyderabad, and Ahmedabad, three major Indian cities. After class eight (VIII), they left school to work and help their parents financially.

v) Risks and threats for sustenance (CS-5)

Mr. SujanBaskey (Name changed), aged 45. He said,

"We did not receive our wages as per the MGNREGA Act from the previous year." We have reached out to the panchayat members to settle the outstanding amount. Furthermore, this statute no longer applies to our employment. The central government released no funds. We must wait for the release of the funds. In addition to farming during their free time

except for the informal sector work, the 100 Days' Work greatly supports our family.” (Field notes, June 2022).

Mr. Baskey said they were not hired through the "100 days programme" in the previous year. There was no further work after that, nor was there any payment for the earlier work. However, many underprivileged families relied heavily on this work program.



Image 3.1 shows women's participation in economic activities

3.5 Findings

The findings of our research suggest that a lack of adequate human resources, restricted availability of lucrative opportunities, and an unfavorable population-to-land ratio have together impeded the progress of economic development. This has significantly contributed to the widespread impacts of poverty. The common people need assistance from governmental and non-governmental organizations to evaluate the potential threats to their means of living and build a viable and enduring source of financial support. However, it is crucial to enhance resource utilization efficiency by implementing specialized educational courses that foster expertise and practical skills. This approach will contribute to the overall development of the region.

Prospects and Challenges for Sustainable Resource Generation

The present study has delineated the prevailing issues and underscored the imperative of mitigating the risks. Consequently, an examination was conducted to assess the many chances and resources that may be utilized to bolster the rural economy. In order to attain this objective, it is imperative to disregard the comprehensive examination conducted by qualitative and quantitative research approaches. The study presents the results of a regression analysis in which the influence of various variables, namely, economic activities, job kinds, arable land, migration types, commercial crops, and education, on three dependent variables is examined while controlling for other factors. The analysis reveals that each variable exhibits statistically significant effects on the dependent variables. Taking into account other factors, this means that there is a statistically significant difference in the dependent variables between different types of economic activities, as long as financial activities are thought to be the most important variable. Image 3.1 shows women's participation in economic activities and Fig. 3.2 shows the major livelihood constraints of the area.

This work suggests that several factors, such as employment opportunities, cultivation of cash crops, patterns of migration, availability of fertile land, economic engagement, and educational attainment, collectively influence individuals' income levels, savings behavior, and expenditure patterns. Moreover, significant disparities exist in the mean income, security, and expenditure across different Community Development Blocks (CDBs).

3.5.1 Major constraints

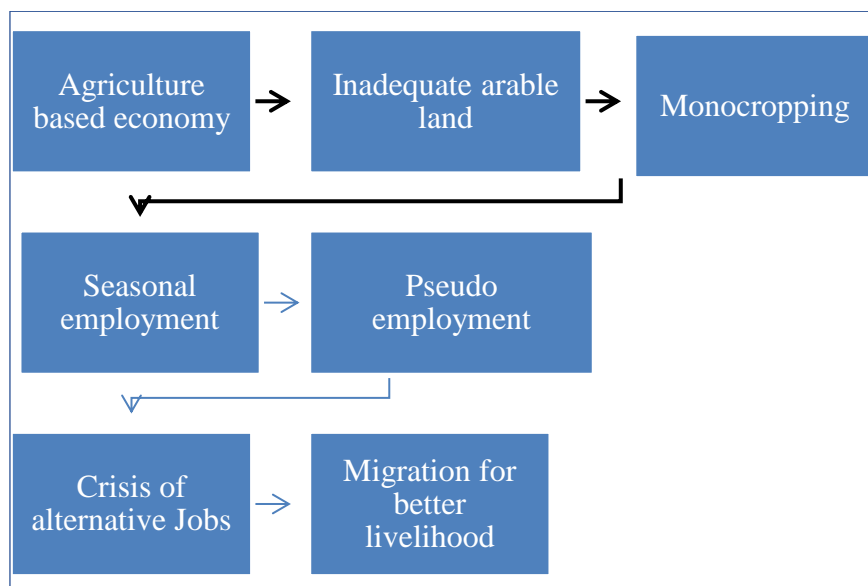


Fig. 3.2 Major Livelihood concerns

Prospects and Challenges for Sustainable Resource Generation

Based on the data presented, it can be deduced that all people who took part in the focus group discussions (FGDs) were sourced from socioeconomically disadvantaged homes. The available land was inadequate for them to sustain their livelihoods. All were found to have significant effects on household income outlays and savings. The findings pointed to a lack of human resources and an unfavorable man-land ratio as the root causes of the region's chronic underdevelopment. However, boosting resource productivity by increasing access to specialized training to develop competence is crucial.

The absence of formal education can be attributed to their socioeconomic disadvantage. However, with the new government's inauguration in the early 2010s, a noticeable shift toward positive developments began to occur. Henceforth, the focal points of concern shifted toward food security, health, and education. The prevailing employment conditions in West Bengal and India have resulted in a lack of motivation among the younger population to seek further education beyond the undergraduate level. As a result, a significant number of males are compelled to migrate. On the other hand, females are required to regularly commute to locations that are nearby (less than 50 km) from their residence. In this particular geographical area, a disparity exists between the quantity of people who generate income and those who rely on others for financial support. The analysis of the five case studies, CS-1 through CS-5, clearly demonstrates the region's precarious financial situation. The executive level should allocate more significant attention to them.



Image 3.2 shows the street hawkers as a commuter

3.6 Discussions

Agriculture is the principal contributor to the district's gross domestic product (GDP) revenue. Additionally, the agricultural productivity in rural regions is subject to the influence of climatic circumstances. The present volatility of meteorological patterns, heatwaves, heightened evaporation rates, nutrient depletion, and fluctuations in groundwater levels have introduced increased complexities. Consequently, the agricultural practitioners in the selected geographic area adopted a monocultural approach, wherein they cultivated the Kharif crop exclusively during the period spanning from June to November. It has been observed that there is a limited range of opportunities for generating income—

- i) Most migrant laborers are employed in factories, building sites, and agriculture.
- ii) Engaging in conversation within a close geographical distance of approximately 50 kilometers from one's residence.

The residents of the designated study region are significantly impacted by enduring inequalities, which intersect with various forms of inequitable treatment based on caste, socioeconomic status, and indigenous identity. Additionally, they experience social and spatial disadvantages. The unique factors of marginalization present in our research site give rise to a complex vulnerability that impacts residents in many ways. Poverty is observed among people, and its exacerbation is evident during periods of calamity. During the lean seasons, our respondents commute for livelihood. Image 3.2 shows the commuters work as street hawkers. Human being living in poverty frequently find themselves constrained to rely on their scarce resources as a means of safeguarding against significant setbacks due to their lack of access to social protection mechanisms.

Resultantly, this perpetuates a cycle of poverty from which they struggle to escape. The research area under investigation is affected by the repercussions of inflation on the daily wages earned by workers in unorganized industries. The incumbent Chief Minister of West Bengal, who assumed office in May 2011, expeditiously unveiled several regional initiatives as part of a "Chief Minister's special package for JM" and is recognized for significant transformation in this

domain. The objective was to address the basic needs of the JM population, including food, education, and health. Consequently, the Public Distribution System (PDS) was reintroduced with complete operational capacity, providing rice to households below the poverty line (BPL) at a subsidized rate of Rs. 2 per kilogram. Recently, the government's rationing plan underwent a rapid transformation due to the introduction of Fair Price agents. In light of the ongoing pandemic, the studied region has secured guaranteed food provisions for all people, regardless of their socioeconomic status.

Based on the preceding discourse, it is advisable to undertake some measures to improve the processes of livelihood diversification and mitigate the risks connected with livelihoods, as depicted in this chapter. Using long-term mitigation strategies and their integration with local execution would yield advantageous outcomes. However, this composition aimed to instruct rural inhabitants on establishing a more robust agricultural community. Implementing land zoning and management practices is paramount in the farming regions within our designated study area. At the same time, using environmentally sustainable and biodegradable materials is legally required. Furthermore, it is imperative to prioritize farm forestry practices that include the essential needs of small landholders to enhance rural economies through optimizing resource utilization, providing professional guidance, and facilitating hands-on learning opportunities. Furthermore, it is imperative to assist small-scale enterprises involved in pomiculture, market gardening, agroforestry, and forest products as part of a broader commitment to sustainability. Additionally, it is essential to offer low-interest loans to small-scale businesses focused on livestock, with a particular emphasis on maximizing productivity. The proposed approach involves actively engaging people from the local community, offering them appropriate training, and collaborating with nearby states such as Andhra Pradesh and Tamil Nadu. Stakeholders can effectively work toward achieving financial inclusion by focusing on the development of sectors such as food processing, horticulture, medicinal plant cultivation, and mixed farming.

3.7 Conclusion

The people in this research area are affected in unique ways by marginalization. We have observed that a significant number of people face financial difficulties, and their suffering intensifies during periods of crisis. Increased marginalization, discrimination, and social inequality are examples of negative externalities. It must be managed to ensure a diversity of alternative economic activities that propel holistic growth. Careful planning and execution of small family farms give financial security to the people and a sense of self-worth. More social enterprises need to take the lead in promoting agroforestry through private collaboration. Policies, monitoring, and evaluation must all be deliberately included in the response. A decent society would have well-developed annexations and infrastructure, the ability to push forward revolutionary reforms, and a secure future for rural citizens. As a result, efforts must be made to fortify communities and individual homes. More research is needed to discover how sustainable management strategies might improve financial outcomes and environmental advantages at appropriate temporal and spatial scales.