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Livelihood Diversification Among Kuki Tribal Households in Dima Hasao District of Assam: An Analysis Using Herfindahl- Hirschman Index

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Abstract: Livelihood diversification is an important strategy for survival and risk minimization in fragile hill economies. The present study examines the extent of income diversification among Kuki tribal households in Dima Hasao district of Assam. Primary data was collected from 116 households from randomly selected six Kuki dominated villages through structured interview schedule. The Herfindahl-Hirschman Index (HHI) and Diversification Index (DI=1-HHI) were used to measure diversification based on percentage share of main and other sources of income. The results reveal an average main income share of 84.74%, average HHI of 0.7633 and average DI of 0.2367 indicating low to moderate diversification. Occupation-wise analysis shows that SHG-based households are most diversified (DI=0.427) followed by business (DI=0.323) and cultivator households (DI=0.303). Street vendors, livestock rearers and private teachers show very low diversification. The study suggests strengthening non-farm and SHG based secondary income for jhum dependent Kuki cultivators.

Keywords: Kuki Tribe, Dima Hasao, Livelihood Diversification, Herfindahl-Hirschman Index, Jhum Cultivation

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1. Introduction

Dima Hasao district is one of the hill district of Assam under the Sixth Schedule administration. In the region, agriculture practices are dominated by traditional shifting cultivation locally called ‘Thinglhang Lou’ in Kuki or ‘Shifting or Jhum Cultivation’ in general. The Kuki community is one among the major tribal communities in the district practicing jhum along with other allied activities.

In recent years, due to reduction of jhum cultivation cycle from ten years to twelve years to three years to four years, decline in soil fertility, climate variability and population pressure, the viability of jhum alone has declined. Households are therefore forced to diversify into wage labour, rearing of livestock, small family business, government service, weaving, carpentry and SHG activities among others. Diversification is measured using various indices like Simpson Index, Entropy Index and Herfindahl-Hirschman Index (HHI). The present paper attempts to measure livelihood diversification of Kuki households using Herfindahl- Hirschman Index (HHI).

2. Study area and Methodology

The study was conducted in six Kuki villages of Dima Hasao district namely Songpijang, Nomjang, Kholjang, Lasang, P.T. Leikeh and Changpijang villages. A total of 116 households were surveyed using stratified random sampling covering different occupations.

Data was collected on main occupation, percentage share of household income from main source and other sources.

Herfindahl-Hirschman Formula:

$HHI = \Sigma (Pi)^2$

Where, Pi is the proportion of income from ith source.

For two income sources:

$HHI = (Main\ \% / 100)^2 + (Other\ \% / 100)^2$

$DI = 1 - HHI$

HHI = 1, DI = 0 means complete specialization (no diversification). HHI = 0.5, DI = 0.5 means perfect diversification for two sources.

3. Results and Discussions

3.1 Overall Diversification Pattern

Table 1: Distribution of Household by Income Diversification Pattern among Kukis of Dima Hasao District

Income Pattern (Main: Others)	No. of Households	Percentage	HHI	DI	Status of Diversification
100:0	30	25.86	1.00	0.00	**No Diversification**
90:10	11	9.48	0.82	0.18	**Low**
80:20	62	53.45	0.68	0.32	**Moderate**
70:30	10	8.62	0.58	0.42	**High**
60:40	3	2.59	0.52	0.48	**Very High**
Total/ Average	**116**	**100**	**0.7633**	**0.2367**	**Low-Moderate**

Source: Primary data collected by the researcher

The overall average HHI of 0.7633 shows high concentration of income in one source. The average Diversification Index (DI) of 0.2367 indicates low-moderate diversification. 25.86% of Kuki households are still fully dependent on a single source (100:0 pattern), which makes them highly vulnerable to any shock in that source. The majority 53.45% households show a moderate 80:20 pattern, which is typical in hill economies where main occupation is supported by a small and marginal secondary activity.

3.2 Occupation-wise Diversification

Table 2: Distribution of Occupation- Wise Diversification Pattern among Kuki Households of Dima Hasao District

Main Occupation	No. of Households	Average Main %	Average HHI	Average DI
SHG	3	66.67	0.573	0.427
Business	7	78.57	0.677	0.323

Cultivator	21	80.95	0.697	0.303
Carpenter	9	80.00	0.698	0.302
Govt. service	9	81.11	0.709	0.291
Wage labour	20	87.00	0.792	0.208
Private teacher	9	90.00	0.842	0.158
Livestocks	11	90.91	0.851	0.149
Street vendors	9	91.11	0.853	0.147

Source: Primary data collected by the researcher

The occupation-wise analysis reveals important insights regarding the occupation- wise distribution of the level of diversification among the Kuki communities living in the district. The present study categorized the findings in three ways as- most diversified, moderately diversified and least diversified. The findings are stated as under:

1. Most Diversified: SHG members (DI=0.427) and Business (DI=0.323). SHG activities among Kuki women are supplementary in nature and linked with savings and credit, leading to higher diversification.
2. Moderately Diversified: Cultivators (n=21, DI=0.303). This is the most important group as most cultivators are jhum cultivators. An average main share of 80.95% shows they depend heavily on jhum and only 19.05% comes from other sources like wage labour or livestock. This explains food insecurity for three to four months in many Kuki jhum cultivator households.
3. Least Diversified: Street vendors (DI=0.147), Rearing of Livestock (DI=0.149) and Private Teachers (DI=0.158). Their income is almost specialized, indicating lack of alternative opportunities.

4. Conclusion and Policy Suggestions

The present study concludes that livelihood diversification among Kuki households in Dima Hasao district is still in a nascent stage. With an average DI of only 0.23, households are at risk. It is also found that the main cultivators who are the core jhum cultivation dependent population are moderately diversified but not enough for sustaining their families.

Policy implications

1. To promote SHG-based weaving, handicrafts, ginger and broom-grass processing and other vocational skill training programs to increase secondary income share from 20% to 40% for cultivators.
2. To focus more on skill development for wage labour, carpenter and driver households to enhance employability.
3. To integrate jhum cultivation with horticulture and rearing of livestock under convergence schemes of the State government or the Autonomous Council at grass-root level.

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