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Income Distribution and Inequalities among Rural Farmers of Nagaland, India

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Abstract— *The study attempts to analyze sources and distribution of rural households' income from farm and non-farm activities and examines the extent of income inequalities across farm sizes. The study is based on primary data collected from 200 farm households of Nagaland through a multi-stage simple random sampling technique. The results indicate that nearly half of the income is from non-farm sources (48.57 percent). Contrary to the popular belief that farming is the principal source of income for rural farm households, the study shows that households derive nearly half of their income from non-farm sources. Another significant finding from the analysis is that across farm size, farm size and farm income show a positive relationship, whereas farm size and non-farm income show an inverse relationship. The non-farm income is most unequally distributed among sources of income, followed by other farm income. The estimation of Gini ratio also reveals that income inequality is higher among marginal and small farmers.*

Keywords— Farm income, Non-farm income, Participation, Gini coefficient.

I. INTRODUCTION

The rural economy in India is predominantly dependent on agriculture and allied activities, on which roughly 54 percent of the rural households depend, while 46 percent depend on non-agricultural activities. However, for the past few years, the structure of Indian agriculture has been experiencing a decline in farm size, which has led to a rise in the marginalization of holdings (Meena et al., 2017). The distribution of area in percentage for marginal farmers increased from 29.8 percent to 34.5 percent between 2012–13 and 2018–19. In contrast, the percentage area for medium farms decreased from 23.1 percent in 2002–03 to 14.7 percent in 2018–19, and for large farmers, it decreased from 11.6 percent in 2002–03 to 5.8 percent in 2012–13 and then further declined to 3.9 percent (National Statistical Survey Report, 2019). As one of the developing economies, India still relies heavily on agriculture to generate income and employment in its rural areas, while it is widely acknowledged that this sector alone cannot keep up with the country's growing population.

It has long been assumed that rural households in developing countries are almost entirely focused on farming and neglect other non-farm activities in the countryside, according to the World Bank (2008). In order to improve rural well-being and lower poverty in the world's growing nations, a comprehensive approach that goes beyond agricultural development is therefore required. According to Chand et al. (2011), small landowners who relied solely on agriculture for their income were likely to have continued to live in poverty. Given the issue of income variability, rural farmers turned to non-farm income streams as an alternate source of income. Identifying the most effective ways to promote non-farm activities is vital, since non-farm income is essential for rural households to sustain and improve their standard of living and may even be a means of escaping poverty (FAO, 2002).

Since the beginning of the green revolution in the early 1960s, Indian agriculture has evolved towards modern agriculture, resulting in the adoption of improved technology and the development of infrastructure within the agricultural sector. While

productivity grew, the experience of its benefits was uneven across regions and farm sizes, which has created economic inequality among agricultural households (Dhanagare, 1988; Freebairn, 1995). The green revolution promoted expensive technology investments for the richer farmers in those resource-rich areas, keeping away the small farmers in resource-scarce areas (Shiva, 1993). Because of scarce resources, farmers were more competitive, which increased the gaps between social classes and geographic areas and, ultimately, led to an uneven distribution of income. The adoption of economic reforms and liberalization in India, which has predominantly benefited the top 1 percent of the population, who held more than one-fifth of the entire national income in 2021, is another example of growing inequality. The bottom half, however, only has 13 percent of the income (World Inequality Lab, 2022). India is one of the most unequal countries as a result. Land ownership and agricultural revenue are strongly related. The very unequal distribution of land in India has resulted in significant economic inequalities within rural communities, as disclosed by Ranganathan et al. (2016).

Formulating policy measures that target welfare efforts at the most disadvantaged farmers becomes easier with information on various income sources and the degree of inequality across farm-size households. Numerous studies have been conducted on the distribution of income among rural populations at the national level (Birthal et al., 2014; Ranganathan et al., 2016; Chakravorty et al., 2016; Priscilla et al., 2021). However, the research on income inequality that specifically deals with farm households and focuses on various farm-size categories is still few (Kaur & Singh, 2014). While national-level studies provide valuable insights, there is a need for region-specific research, particularly in less-explored areas like Nagaland, where the agrarian structure, cultural practices, and livelihood strategies differ significantly from other parts of India. The present study addresses this gap by examining income sources and inequalities among rural farm households in Nagaland, a state with a unique socio-economic and agricultural context.

The objectives of the study are:

1) To evaluate the distribution of rural household income from both farm and non-farm activities across farm sizes.
2) To examine the extent to which income inequality exists among various farm size categories.

II. CONCEPTUAL FRAMEWORK

The study is guided by the conceptual framework linking farm size, income diversification, and inequality. In rural economies of developing countries, farm households are not homogeneous; they differ in terms of land holdings, access to resources, and livelihood strategies. The farm household model suggests that households make decisions about resource allocation (labor, capital, land) across farm and non-farm activities to maximize income and minimize risk (Ellis, 1998). Income diversification theory posits that households with smaller land holdings are more likely to diversify into non-farm activities due to land constraints, while larger farmers tend to specialize in agriculture (De Janvry et al., 2005).

The relationship between farm size and income inequality operates through multiple channels. First, land is the primary productive asset in rural areas, and its unequal distribution leads to unequal income from agriculture. Second, access to non-farm opportunities is often influenced by factors such as education, social networks, and capital, which are correlated with farm size. Third, the green revolution and technological change have favored larger farmers who can afford expensive inputs and machinery, exacerbating inequalities (Shiva, 1993). The present study examines these relationships in the context of Nagaland, where small and marginal farmers constitute the majority of the agricultural population.

The conceptual framework posits that:

- Farm income increases with farm size due to economies of scale and better access to resources.
- Non-farm income decreases with farm size as smaller farmers are pushed into non-farm activities due to land constraints.
- Income inequality is higher among smaller farmers due to greater variability in non-farm income sources.
- Participation in different income sources varies systematically across farm sizes.

III. METHODOLOGY

3.1 Study Area

Nagaland, one of the smallest states in the country, has an agrarian economy, with 60 percent of its working population engaged in the agricultural sector. As per the Advance Estimate (AE) of the Nagaland Economic Survey (2025–26), the sector's percentage share in the Gross State Domestic Product (GSDP) has decreased from 31.41 percent in 2011–12 to 23 percent in 2025–26. As per the 2011 census, the state has a total population of 19,78,502, with 71.14 percent living in rural areas and the remaining 28.86 percent in urban areas. The estimated number of rural households in the state is 2,40,200. Out of which, 1,91,800 were agricultural households, accounting for 79.9 percent of total rural households (Agriculture Statistics at a Glance, 2024-05).

An agricultural household earned an average income of ₹9950 per month, whereas a non-agricultural household earned an average of ₹10043 in Nagaland. The average monthly income of agricultural households in the state is somewhat higher than the ₹8951 of the national average (NABARD, 2021). With an estimated 1.287 ha of operating area per household, Nagaland has a higher average than other states. As per the National Statistical Survey report (2019), the state's medium and large farmers accounted for only 23.5 percent of farm households during the agricultural year 2018–19, while 76.5 percent of farm households were small and marginal farmers.

3.2 Data Base

A set of well-structured questionnaires was used in a multi-stage simple random sample procedure to gather primary data. Initially, the Peren district was selected to serve as the sample district. In the following stage, out of the four blocks in the district, two blocks—Peren and Jalukie—were chosen for the study. Four villages were then chosen: Punglwa and Gaili from the Peren block, and Jalukie B and Samziuram from the Jalukie block. Finally, 200 rural farm households were chosen at random to serve as sample units, consisting of 50 households from each village under study. Based on the size of the farm, the sample households were categorized into four groups: Marginal farmers (operating up to 2.5 ac), small farmers (between 2.51 to 5.0 ac), Medium farmers (between 5.0 to 10 ac), Large farmers (more than 10.01 ac). The survey was conducted during the agricultural year 2020-21, covering both pre-monsoon and post-monsoon seasons to capture seasonal variations in income.

3.3 Data Analysis

For the data analysis, two income sources are considered, i.e., farm and non-farm income.

- **Farm income** includes crop production such as income from paddy, oilseeds, vegetables, spices, etc., and other farm income, i.e., income from livestock output, diary, etc., sale of seeds and plants, agricultural wages, renting or hiring out implements and machinery, plantations, etc.
- **Non-farm income** includes income from business, self-employment, salary, casual labour, and land rent received.

The following are the statistical tools used for the study:

To find out the level and distribution of various income sources, averages and percentages were used to identify the share of contributions from various farm and non-farm incomes across the farm size categories.

The Gini coefficient was used to calculate the disparity of income (farm and non-farm) among the farmers by farm size. This provides a statistical measure of distribution. The value of the coefficient is a number that ranges from 0 to 1, where 1 represents perfect inequality and 0 represents perfect equality.

$$G = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2n^2\bar{x}} \quad (1)$$

Where x is an observed value, n is the number of values observed, and $\bar{x}$ is the mean value. Adequate equality is shown by a coefficient in the range of 0.3 to 0.4. This indicates that while wealth or income is allocated suitably, it may still be disbursed more equitably. A significant income disparity is indicated by a coefficient larger than 0.4 (Hasell, 2023).

IV. RESULTS AND DISCUSSION

4.1 Distribution of Income and Participation of Rural Households in Farm Activities

The distribution of income by sources and participation rate of rural farm households in a range of farm activities are depicted in Table 1.

TABLE 1
HOUSEHOLDS' FARM INCOME (AVERAGE IN ₹) AND PARTICIPATION (IN %) IN FARM ACTIVITIES

Sources of Farm Income	Marginal (N=85)		Small (N=75)		Medium (N=29)		Large (N=11)		All size (N=200)	
	Annual Income	Participation (%)	Annual Income	Participation (%)	Annual Income	Participation (%)	Annual Income	Participation (%)	Annual Income	Participation (%)
Crop production	54164.71 (35.2)	100	111449.33 (41.79)	100	172368.97 (41.1)	100	209818.18 (38.95)	100	101347 (39.61)	100
Livestock	56402.94 (36.65)	97.65	84694.54 (31.76)	100	152054.82 (36.26)	96.26	273500 (50.77)	100	92822.15 (36.28)	98.5
Sale of seeds and plants	688.24 (0.45)	12.94	1533.33 (0.57)	20	4851.72 (1.16)	48.28	4000 (0.74)	36.36	1791 (0.69)	22
Agri. Wage	20361.18 (13.23)	83.53	16664 (6.25)	66.67	10689.66 (2.55)	41.38	6363.64 (1.18)	27.27	16802.5 (6.57)	68
Hiring-out implements & machinery	8775.29 (5.7)	27.06	21000 (7.87)	48	41862.07 (9.98)	62.07	20909.09 (3.88)	63.64	18824.5 (7.36)	42
Plantation	10564.71 (6.86)	30.59	28282.67 (10.6)	29.33	35344.83 (8.43)	55.17	22272.73 (4.13)	36.36	21446 (8.38)	34
Others	2941.18 (1.91)	16.47	3093.33 (1.16)	14.67	2241.38 (0.53)	17.24	1818.18 (0.34)	9.09	2835 (1.11)	15.5
Total	**153898.25 (100)**		**266717.2 (100)**		**419413.45 (100)**		**538681.82 (100)**		**255868.15 (100)**	

Source: Computed from field survey data, 2020-21
Note: Figures in the bracket represent percentage of income in the total

A rural household by and large earns about ₹2,55,868.15 from farming activities annually. The primary source of income for the household on the farm is crop production, which accounted for 39.53 percent of total farm income. Livestock came in second with 36.32 percent. Therefore, 75.85 percent of the total farm income has come from the production of crops and livestock combined. Additional secondary sources include earnings from agriculture wages (6.58 percent), plantations (8.39 percent), and the hiring out of machinery and other assets (7.37 percent).

The average annual household farm income for each farm size category is estimated to be ₹153,898.25, ₹266,717.2, ₹419,413.45, and ₹538,681.82 for marginal, small, medium, and large farmers, respectively. For marginal farmers, livestock accounts for the largest proportion of farm income (36.65 percent), followed by crop production (35.2 percent) and agricultural wages (13.23 percent). For small and medium-sized farmers, the production of crops (41.79 percent and 41.1 percent, respectively) and livestock (31.76 percent and 36.36 percent, respectively) constitute the main sources of revenue. For medium farms, the secondary sources were renting out machinery and implements (9.98 percent), while for small farmers, plantations accounted for 10.6 percent of the farm income. On the other hand, livestock accounts for 50.77 percent of the income earned by large farms, with crop production coming in second at 38.95 percent.

Approximately two-thirds of the household's total farm revenue across all farm sizes is contributed by crop and livestock productions.

4.2 Farmers' Participation in Farm Activities

It was found that 100 percent of the sample households are involved in agricultural production. Livestock production is the second major farm activity, with 98.5 percent of households involved. The study confirms that raising livestock is a crucial component of rural livelihood, supplementing income earned from growing crops for all farm size categories. There is 100 percent involvement for both large and small farmers in livestock production. For marginal and medium farmers, it is 97.65 percent and 96.26 percent, respectively. By tradition in Nagaland, livestock is considered an important asset that determines household wealth and ensures security, especially in rural areas, which can be readily converted into cash when required. Primary livestock are piggery, poultry, cattle, etc.

Agricultural wage activity is another important source of income for marginal and small farmers, with participation rates of 83.53 percent and 66.67 percent, respectively. Both the income from agricultural wages and its participation rate decreases as

farm sizes grow; that is, as farms grow in size, the portion of the income and participation rate in wages declines. Birthal et al. (2014) shared similar conclusions from their research conducted in India. For medium and large farmers, the participation rate in hiring out machinery and implements was estimated at 62.07 percent and 63.64 percent, respectively. It is followed by plantations with 55.17 percent and 36.36 percent, respectively.

Across all farm size categories, the income from crops and livestock contributes substantially more than that from all other activities. Furthermore, compared to larger farmers, small and marginal farmers are more dependent on agricultural wage income. Larger farm households, on the other hand, diversify their sources of income by leasing out equipment and machinery, selling seeds and plants, and operating plantations, all of which supplement income from the output of livestock and crops. Similar conclusions were made by Kaur (2017), who stated that farm revenue accounts for a sizable portion of the total income in large and medium-sized farm households. However, compared to larger farmers, the participation of small and marginal farmers in high-yield varieties was lower due to their smaller farmland and lower income levels.

4.3 Distribution of Income and Participation of Rural Households in Non-Farm Activities

TABLE 2
HOUSEHOLDS' INCOME (AVERAGE IN ₹) AND PARTICIPATION (IN %) FROM NON-FARM ACTIVITIES

Sources of Non-Farm Income	Marginal (N=85)		Small (N=75)		Medium (N=29)		Large (N=11)		All size (N=200)	
	Annual Income	Participation %	Annual Income	Participation %	Annual Income	Participation %	Annual Income	Participation %	Annual Income	Participation %
Business/self employed	69254.12 (31.68)	80	52496 (24.57)	45.33	42068.97 (11.86)	31.03	20363.64 (6.53)	36.36	56339 (23.32)	57.5
Regular/salaried employees	138436.5 (63.33)	49.41	150260 (70.34)	54.67	306000 (86.25)	75.86	287090.91 (92.02)	63.64	175343 (72.57)	56
Land rent received	3058.82 (1.4)	4.71	1813.33 (0.85)	4	0 (0)	0	2727.27 (0.87)	9.09	2130 (0.88)	4
Casual labour	7847.06 (3.59)	35.29	9053.33 (4.24)	40	6724.14 (1.9)	31.03	1818.18 (0.58)	9.09	7805 (3.23)	35
Total	**218596.5 (100)**		**213622.66 (100)**		**354793.11 (100)**		**312000 (100)**		**241617 (100)**	

Source: Computed from field survey data, 2020-21
Note: Figures in the bracket represent percentage of the total income

4.4 Distribution of Non-Farm Income

The average household's annual income from non-farm sources is ₹2,41,617. The primary source of non-farm income is salary income (72.57 percent), with a participation rate of 56 percent. It shows that a substantial amount of the non-farm income is generated by salaried activities, which are carried out by more than half of the farm households. This is true for all farm size categories; for marginal, small, medium, and large farmers, this percentage is 63.33 percent, 70.34 percent, 86.25 percent, and 92.02 percent, respectively. In comparison to smaller farm sizes, larger farms have a higher percentage.

Three other sources of non-farm income include rent (0.88 percent), casual labour (3.23 percent), and small businesses (23.32 percent).

4.5 Farmers' Participation in Non-Farm Activities

Different farm sizes have different situations when it comes to participation rates. Only 31.68 percent of marginal farmers' total income came from non-farm small business operations, despite the fact that 80 per cent of them had participated in such activities. It shows that marginal farmers are mostly engaged in small businesses, which have low returns compared to salaries. Although the participation rate in salaries is only 49.41 percent, they account for almost 60 percent of all non-farm income.

Small and marginal farmers have greater participation rates (35.29 percent and 40 percent, respectively) for casual wages than large farmers (9.09 percent only). Less than 5 percent of the average income of farm households across all categories came from casual wages, which is more common among small and marginal farmers. This is in accordance with the findings of Ohno et al. (2021). The current study reveals an interesting finding that there is a negative correlation between farm size and participation in business and casual wages, which tend to decline with farm size.

On the other hand, salary income tends to rise, suggesting a positive correlation with farm size. Similarly, Lanjouw and Shariff (2002) noted that wages are skewed toward the marginal farmers and the salary incomes are distributed more favorably to the

affluent farmers in the country. Land rent provides a minimum income of less than 2 percent, with marginal farmers receiving the largest percentage of this income at 1.4 percent of their individual average non-farm income. Therefore, it can be concluded that small farmers have more diverse income sources than large farmers, which is also supported by past research (Subramanian, 2018; Saini & Kaur, 2022).

4.6 Distribution of Income by Farm and Non-Farm Sources

In addition to farming, rural farmers also engage in non-farm activities as a means of generating income. The percentages of income from different sources have been organized by farm size categories in Table 3.

TABLE 3
AVERAGE INCOME FROM FARM AND NON-FARM INCOME AMONG RURAL FARMERS IN PEREN DISTRICT

Farm Size	Farm Income			Non-farm Income	Total Income (Farm & Non-farm)
	Crop Production	Other Farm Income	Total Farm Income		
Marginal	54164.71 (14.54)	99733.53 (26.78)	153898.2 (41.32)	218596.47 (58.68)	372494.71 (100)
Small	111449.33 (23.20)	155267.87 (32.32)	266717.2 (55.52)	213622.67 (44.47)	480339.87 (100)
Medium	172368.97 (22.26)	247044.48 (31.91)	419413.5 (54.17)	354793.10 (45.83)	774206.55 (100)
Large	209818.18 (24.66)	328863.64 (38.66)	538681.8 (63.32)	312000 (36.68)	850681.82 (100)
All size	**101347 (20.37)**	**154521.15 (31.06)**	**255868.2 (51.43)**	**241617 (48.57)**	**497485.15 (100)**

Source: Computed from field survey data, 2020-21
Note: Figure in the bracket represents percentage of the total. Total Farm income is the sum of the crop production and other farm income.

In Nagaland, the average total household income differs considerably depending on the size of the farm; for marginal and small farmers, it was only ₹372,494.71 and ₹480,339.87, but for medium and large farmers, it was ₹774,206.55 and ₹850,681.82, respectively. The study shows a positive relationship between rural farmers' average income and farm sizes. Singh (2019) found a similar pattern in India, stating that the average revenue declined as farm size decreased. In comparison to marginal farmers, large farmers earn more than twice as much on average annually. It is also observed that a substantial portion of income comes from other farm activities (31.06 percent), which is more significant than crop production (20.37 percent), hence, the total farm income accounted for 51.43 percent of the average income of a farmer's household in Nagaland. Additionally, 48.57 percent of the income comes from non-farm sources. The survey results reveal that households obtain almost half of their income from non-farm sources, which is in contrast to the widely held belief that farming is the primary source of income for rural farm households. Birthal et al. (2014) also share a similar perspective.

The impoverished households with smaller land holdings are more likely to engage in low-paying, non-agricultural activities. The small and marginal farm households diversify their sources of income away from farming due to their tiny land holdings, low agricultural yield, and excess labour from farming. For marginal farmers, the percentage of total income from crop production was only 14.54 percent, while the percentage from other farm activities was 26.78 percent. As a result, total farm income accounted for only 41.32 percent, while the percentage from non-farm income was 58.68 percent. According to De Janvry et al. (2005), large farmers concentrate more on agriculture, whereas small farmers are rapidly diversifying into non-farm pursuits in the country. A similar scenario is observed among the large farmers in rural Nagaland.

4.7 Income Inequality

Each rural farm household has a portfolio of income streams depending on their willingness to take risks, family size, educational attainment, and resource availability. As a result, the distribution of income levels varies both within and between farm size categories. In order to determine the pattern of income inequality within each farm size category, income inequality is examined by farm size.

TABLE 4
DECOMPOSITION OF INCOME INEQUALITY (GINI COEFFICIENT)

Farm Size Categories	Crop Production	Other Farm Income	Total Farm Income	Non-farm Income	Total Income
Marginal	0.22	0.335	0.241	0.446	0.311
Small	0.097	0.353	0.216	0.455	0.253
Medium	0.096	0.435	0.265	0.435	0.285
Large	0.061	0.467	0.285	0.433	0.251
All size	**0.293**	**0.432**	**0.33**	**0.466**	**0.326**

Source: Calculated from the field survey data, 2020-21

The overall rural household income has a 0.326 Gini coefficient. With an estimated Gini coefficient value of 0.466, non-farm income is the most unequally distributed source of income, followed by other farm income (0.432). With a 0.293 Gini coefficient, crop production income is distributed less unequally. This result is consistent with that of Thakur et al. (2000), whose research found that revenue from agricultural activities is distributed less unequally than income from non-farm sources.

Across farm size categories, the Gini coefficients of total income distribution are 0.311, 0.253, 0.285, and 0.251 for marginal, small, medium, and large farm sizes, respectively. The income inequality estimates for marginal farmers are higher than large farm households.

Income inequality from crop production is higher for marginal farmers (0.220) and non-farm sources is most unequally distributed within small farm families (0.455), while other farm income is most unequally distributed among large farm households (0.467). Compared to medium-sized and large farms, marginal and small farmers experience higher levels of disparity in the distribution of income from crop production and non-farm sources. It shows that there is a negative correlation between income disparity and farm size; that is, as farm size grows, income inequality begins to decline. Meanwhile, income from other farm activities is less inequitably distributed among marginal and small farmers than that of medium and large farms, suggesting a positive association with farm sizes.

The higher inequality among marginal farmers can be attributed to several factors. First, marginal farmers have limited land resources, which restricts their ability to generate income from agriculture. Second, their participation in non-farm activities is often in low-paying sectors such as casual labour and small businesses, which have high income variability. Third, access to salaried employment, which provides more stable and higher income, is limited among marginal farmers compared to larger farmers. These factors collectively contribute to the higher income inequality observed among marginal and small farmers.

V. DISCUSSION

The findings of this study reveal several important patterns regarding income sources and inequality among rural farm households in Nagaland. The significant contribution of non-farm income (48.57 percent) to total household income challenges the traditional assumption that farming is the primary source of livelihood for rural households. This finding is consistent with national-level studies (Birthal et al., 2014) and reflects the broader trend of income diversification in rural India. The high dependence on non-farm income, particularly salaried employment, suggests that rural households in Nagaland are increasingly integrating into the non-agricultural economy.

The positive relationship between farm size and total income is consistent with the agrarian structure literature (Singh, 2019; Chand et al., 2011). Larger farmers benefit from economies of scale, better access to resources, and higher productivity, resulting in higher incomes. However, the inverse relationship between farm size and non-farm income indicates that smaller farmers are compelled to diversify into non-farm activities due to land constraints and limited agricultural income. This pattern is consistent with the findings of De Janvry et al. (2005) and Subramanian (2018), who observed that small farmers in India are rapidly diversifying into non-farm pursuits.

The higher income inequality among marginal and small farmers is a matter of concern. The Gini coefficients for marginal (0.311) and small (0.253) farmers are higher than for medium (0.285) and large (0.251) farmers, indicating greater disparity within these groups. This may be attributed to the heterogeneity in non-farm income sources, with some households having access to salaried employment while others rely on casual labour or small businesses with lower and more variable returns. The finding that non-farm income is the most unequally distributed source of income (Gini = 0.466) underscores the importance of addressing disparities in access to non-farm opportunities.

The high participation in livestock production (98.5 percent) reflects the cultural and economic importance of livestock in Nagaland. As noted by Priscilla et al. (2021), livestock serves as a crucial asset for rural households, providing both income and security. The reliance on agricultural wages among marginal and small farmers (83.53 percent and 66.67 percent participation) indicates the prevalence of wage labour as a coping strategy for land-constrained households, consistent with the findings of Ohno et al. (2021).

The study has several policy implications. First, the significant contribution of non-farm income suggests that rural development policies should go beyond agricultural development and support non-farm employment opportunities. Second, the higher inequality among marginal and small farmers calls for targeted interventions to improve their access to productive assets, education, and non-farm employment. Third, the importance of livestock in rural livelihoods suggests that livestock development programmes could be an effective way to enhance income and reduce inequality.

VI. CONCLUSION

In Nagaland, the study shows a positive relationship between rural farmers' average total income and farm sizes. The estimation of Gini ratio varies from 0.293 to 0.466 across farm sizes. The marginal farmers exhibited the highest inequality in terms of overall income (0.311) and crop production income (0.220) and for non-farm income the highest inequality is among small farmers (0.455). Hence, there is a need to reduce inequality particularly among marginal and small farmers.

The study suggests that it is imperative to intensify crop production process by prioritizing high-value crops with better infrastructure base and to maximize benefits from non-farm income, specific steps must be taken to educate impoverished households on how to create opportunities for earning income from non-farm sources. To address disparities in income distribution and promote more inclusive and equitable growth in the State, the government, agricultural organizations, and local administration must collaborate to ensure their effectiveness at the regional level and regularly evaluates their impact across farm size. This will be helpful in reducing inequalities between marginal and large farm households.

Limitations of the Study: The study is based on a single district (Peren) in Nagaland, which limits the generalizability of the findings to other districts with different socio-economic and agro-climatic conditions. The cross-sectional design captures income at a single point in time and does not capture seasonal or inter-annual variations. The study did not examine the determinants of income diversification and inequality, which could provide insights for policy interventions. Future research should extend the analysis to multiple districts, employ panel data to capture income dynamics, and examine the factors influencing income diversification and inequality.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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