

Income Diversification of Rural Households in Bangladesh (2022-23)

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Abstract:- This study examines income diversification and inequality among rural households in Bangladesh in 2022-23, focusing on agricultural and non-agricultural sources of income. The analysis includes three districts: Chadpur, Sirajganj and Rajshahi, with specific economic activities. Data were collected through household surveys that collect income from agriculture, livestock, fishing, services and industries, and demographic data. Rajshahi has the highest income, due to high income from cattle, while Chadpur has the lowest. The results show significant income disparities, high levels of animal activity and differences in economic activity between regions. Larger houses in Rajshahi reflect changes in family structure. The main challenges identified were land fragmentation, climate change and limited access to finance and infrastructure. Recommendations for policy interventions include targeting support to low-income areas, investing in livestock development, promoting income diversification, improving infrastructure, strengthening climate livelihoods, expanding access to finance, the adoption of technology and the implementation of family planning programs. These strategies aim to reduce income inequality, improve economic opportunities and promote sustainable development in rural Bangladesh.

I. INTRODUCTION

Income inequality is an important aspect of rural life, especially in agricultural economies like Bangladesh. This includes institutions that generate income from various sources to reduce risk and improve economic viability. This study aims to explore the patterns of income inequality of rural households in Bangladesh in 2022-23, focusing on various agricultural and non-agricultural sources. Agriculture is the backbone of Bangladesh's economy, employing a large portion of the population and contributing significantly to GDP. However, growing problems such as land fragmentation, climate change and market price fluctuations make it difficult for many rural households to rely solely on agriculture. Therefore, household income sources vary from livestock, fishing, services and commercial activities. The study examines annual household income in three districts: Chadpur, Sirajganj and Rajshahi. Each region has unique characteristics and economic activities, which provide a broad view of how rural households manage their economic

resources. By analyzing income data from these regions, this study aims to present the current status of income inequality and its impact on rural development and policy decisions in Bangladesh. The results provide important information about the economic behavior of rural households and help policymakers design targeted interventions to support sustainable income growth and reduce poverty. These data also inform strategies to make rural communities more resilient by increasing their resilience to economic shocks and environmental change.

II. LITERATURE REVIEW

Income inequality among rural households in Bangladesh has been widely studied, highlighting its importance for economic stability and poverty reduction. This literature review synthesizes key findings from several studies that focus on the role of agriculture, non-agricultural activities, challenges and opportunities for income diversification. Income diversification is important for rural households to manage the risks associated with dependence on agriculture. Ellis (2000) shows that diversification into non-farm activities helps households smooth their consumption and cope with farm income volatility. Similarly, Barrett et al. (2001) argue that there are multiple sources of income that can reduce poverty and vulnerability in rural areas. Agriculture remains the main source of income for rural households in Bangladesh. Hossain et al. (2016) emphasized the importance of rice cultivation and also noted the growing importance of other crops such as maize and vegetables. However, many challenges exist in the sector, including land fragmentation, which Rahman (2010) identified as a major barrier to efficiency and effectiveness. Climate change will worsen these problems, as Karim et al. (2018) discuss the negative effects of flooding and salinity on crop yield. Non-agricultural activities are very important for income diversification. Ahmed and Wahab (2014) analyzed the growth of aquaculture in Bangladesh and its role in improving income and food security. Similarly, Sarker et al. (2019) examine the expansion of small dairy farms supported by veterinary services and cooperative infrastructure. Animal husbandry is another important non-agricultural activity. Zaman et al. (2017), livestock contribute to household income through direct sales and by-products such as milk and eggs. Fishing, especially in coastal and riverine areas, provides a lot of income, as

reported by Rahman et al. (2016). Despite these benefits, there are many problems with income inequality. As Ahmed (2015) points out, poor access to finance is a major problem. High interest rates and liability requirements often limit the ability of the poor to obtain the funds needed to invest in various activities. In addition, the lack of infrastructure, especially in rural areas, hinders market access and the efficient distribution of goods and services (World Bank, 2015). Government programs play an important role in promoting income inequality. Babu and Dey (2015) review various financial and training programs aimed at improving agricultural productivity and encouraging non-agricultural activities. They highlight the importance of continued policy support to address barriers such as access to credit and infrastructure. Technological advances will have a significant impact on income diversification. The adoption of high yielding varieties (HYVs) and modern agricultural practices, as reported by Zaman et al. (2017), improving agricultural productivity and providing resources for non-agricultural activities. Mobile technologies and digital platforms facilitate access to marketing information, financial services and agricultural advice (Aker, 2011). There are many success stories that demonstrate the power of income diversification. Ahmed and Wahab (2014) document the impressive growth of aquaculture, establishing Bangladesh as a fish producer. Likewise, the development of agricultural industries, such as fruit and dairy processing areas, has improved family incomes by adding value to primary agricultural products (Islam et al., 2018). The literature shows the important role of income diversification in increasing the economic stability and resilience of rural households in Bangladesh. While agriculture remains the cornerstone, non-agricultural activities such as animal husbandry, fishing and small businesses are gaining importance. Addressing issues related to finance, infrastructure and climate change, as well as supportive government policies and technology adoption, are important to promote income diversification. Future research should continue to explore innovative solutions and strategies to further support rural household expansion.

III. METHODOLOGY

➤ *Study Area:*

The study was conducted in three districts of Bangladesh namely Chadpur, Sirajganj and Rajshahi. These regions were selected based on their different economic activities and geographical location, which broadly represent the diversity of rural income in Bangladesh.

➤ *Data Collection:*

Data for this study was collected using a household survey conducted prior to the 2022-23 survey. The survey collected detailed information on household income and demographic information on household members from a variety of sources.

➤ *Income Data:*

Sources of income include agriculture, livestock, fishing, services and commercial activities. The total income of each household from these sources was recorded in the table.

➤ *Household Population:*

The number of males, females, male and female dependents in each household was recorded. Dependents are classified as people who cannot contribute to the household, such as children and the elderly.

➤ *Sampling Method*

A random sampling method was used to ensure the representation of economic and social groups in each study area. Households were randomly selected within predefined strata to account for variation in income sources and demographic characteristics.

IV. DATA ANALYSIS

➤ *Descriptive Statistics*

Descriptive statistics were used to calculate the average income from each source and the total income for each study area. In addition, we calculated the average age of household members, including a breakdown of husband, wife, male dependents, and female dependents.

➤ *Comparative analysis*

Income and demographic data from the three study areas were compared to identify patterns and differences in income inequality and housing structure. To better understand rural economic conditions, we calculated median income and household size across regions.

➤ *Statistical tools*

Microsoft Excel was used for data entry, cleaning, and analysis. Statistical tests such as calculating means were performed to determine the significance of differences in income and demographic characteristics between the study areas.

➤ *Ethical Considerations*

The study followed ethical guidelines to ensure confidentiality and anonymity. Informed consent was obtained from all respondents and participation was voluntary. The data were carefully protected and used only for the purposes of this study.

V. LIMITATIONS

➤ *Sampling Pattern*

Despite efforts to prepare a representative sample, some configurations still exist due to differences in rural household characteristics.

➤ *Data Integrity*

The accuracy of self-reported income data can be compromised by memory settings and reluctance to disclose financial information.

➤ *Temporal Coverage*

The data shows the structure of incomes and households in one year (2022-23) and may not capture long-term trends or seasonal changes.

The methodology described above provides a powerful framework for analyzing income inequality among rural households in Bangladesh. By combining quantitative income data with detailed demographic information, this study aims to provide important insights into the economic strategies of rural households and inform policy interventions to support sustainable income growth and poverty reduction.

VI. ANALYSIS

Table 1: Yearly Income of Households from Different Sources (2022-23) (in Taka)

Area	Agriculture	Livestock	Fishing	Services	Business	Total Income
Chadpur	707,000	120,000	20,000	40,000	360,000	1,247,000
Sirajganj	3,740,000	700,000	470,000	0	0	4,910,000
Rajshahi	1,688,000	8,900,000	494,000	370,000	250,000	11,702,000
Average	2,045,000	3,240,000	328,000	136,667	203,333	5,516,000

Table 2: Average Number of Members per Household in Different Study Areas (2022-23)

Area	Male	Female	Dependent Male	Dependent Female	Total Members
Chadpur	79	79	42	45	245
Sirajganj	29	32	17	31	109
Rajshahi	200	189	84	82	555
Average	102.67	100	47.67	52.67	303

A. Income Distribution and Sources:

➤ *Total Income*

Rajshahi has the highest total yearly income at 11,702,000 Taka, significantly higher than both Chadpur and Sirajganj. Sirajganj's total income is 4,910,000 Taka, while Chadpur has the lowest total income at 1,247,000 Taka.

➤ *Income Sources*• *Agriculture*

Sirajganj leads with 3,740,000 Taka, followed by Rajshahi with 1,688,000 Taka. Chadpur has the least agricultural income at 707,000 Taka.

• *Livestock*

Rajshahi generates a substantial income from livestock (8,900,000 Taka), which is a major contributor to its total income. In contrast, Chadpur and Sirajganj have 120,000 Taka and 700,000 Taka, respectively.

• *Fishing*

Rajshahi also leads in fishing income at 494,000 Taka. Sirajganj follows with 470,000 Taka, while Chadpur has only 20,000 Taka.

• *Services*

Rajshahi has a significant income from services (370,000 Taka), followed by Chadpur (40,000 Taka). Sirajganj has no reported income from services.

• *Business*

Chadpur generates 360,000 Taka from business activities, while Rajshahi generates 250,000 Taka. Sirajganj reports no business income.

• *Average Income*

The average total income across the three areas is 5,516,000 Taka. The highest average income source is livestock (3,240,000 Taka), driven primarily by Rajshahi's high livestock income.

B. Household Composition

➤ *Total Members*

Rajshahi has the largest average household size with 555 members, significantly higher than Chadpur (245 members) and Sirajganj (109 members).

➤ *Gender Distribution*

Rajshahi has the highest number of both males (200) and females (189), followed by Chadpur (79 each for males and females) and Sirajganj (29 males and 32 females).

➤ *Dependents*

Rajshahi also has the highest number of dependent males (84) and dependent females (82). Chadpur has 42 dependent males and 45 dependent females. Sirajganj has 17 dependent males and 31 dependent females.

➤ *Average Members*

On average, households in the study areas have 102.67 males, 100 females, 47.67 dependent males, and 52.67 dependent females, totaling 303 members.

VII. FINDINGS

➤ *Income Disparity*

There is a significant disparity in total household income among the study areas, with Rajshahi being notably higher due to substantial livestock income.

➤ *Role of Livestock*

Livestock is a crucial income source in Rajshahi, indicating the importance of livestock farming in certain regions. This contrasts with Chadpur and Sirajganj, where livestock income is comparatively lower.

➤ *Economic Activities*

Diverse economic activities are observed, with Rajshahi engaging in all income sources while Sirajganj focuses heavily on agriculture and fishing, and Chadpur has a notable business income.

➤ *Household Size*

Rajshahi's larger household size may reflect extended family living arrangements or higher fertility rates. This could have implications for resource allocation and dependency ratios.

VIII. RECOMMENDATION

Based on the analysis provided, some of the recommendations are as follows:

- Targeted support programs: Establish targeted support programs for low-income areas like Chadpur to strengthen income-generating activities and improve economic stability.
- Livestock Development: Invest in animal breeding projects in areas like Sirajganj and Chadpur to expand your income. This may include training programs, access to veterinary services and infrastructure improvements.
- Diversified incentives: Increase diversification of income sources by providing incentives for non-agricultural

activities such as fishing and entrepreneurship. This can include access to credit, education and market connections.

- Infrastructure Development: Address infrastructure deficiencies, particularly in rural areas, to improve market access and efficient distribution of goods and services. This can improve the profitability of agricultural and non-agricultural activities.
- Climate Change: Develop measures to strengthen the climate resilience of agriculture, including the promotion of drought-tolerant crops and water management practices. This will help reduce the adverse effects of climate change on agricultural crops.
- Access to finance: improve access to finance for rural households through microfinance programs and innovative financial products tailored to their needs. This may include microfinance and savings programs.
- Technology Adoption: Coordinating the use of technology in the agricultural and non-agricultural sectors to increase productivity and efficiency. This may include using mobile technology for market information and digital platforms for financial transactions.
- Family Planning Program: Implement a family planning program to correct the household size found in districts like Rajshahi. This can help with resource constraints and improve building health.

By implementing these recommendations, policymakers can work to reduce income inequality, improve economic opportunity, and promote sustainable development in rural Bangladesh.

IX. CONCLUSION

In conclusion, this analysis presents some key recommendations for addressing income inequality and promoting sustainable development in rural Bangladesh. Targeted support programs should be established in low-income areas like Chadpur to strengthen income generation and increase economic stability. Investments in livestock development programs in areas such as Sirajganj and Chadpur can increase income opportunities through educational programs, access to veterinary services, and infrastructure improvements. Diversified incentives are important to encourage non-agricultural activities such as fishing and entrepreneurship. Access to credit, education and market connections can moderate this difference. In addition, addressing infrastructure deficiencies, especially in rural areas, is important to increase the productivity of agricultural and non-agricultural activities by improving market access and increasing the efficiency of distribution of goods and services. Climate resilience measures, including the promotion of drought-tolerant crops and water management practices, are important to reduce the negative impacts of climate change on agriculture. Improving access to finance through microfinance programs and innovative financial products tailored to the needs of rural households will stimulate investment and

growth. In addition, the adoption of technology in the agricultural and non-agricultural sectors and the implementation of family planning programs to address household gaps will help reduce income inequality and promote sustainable development. By implementing these recommendations; policymakers can work to reduce income inequality, improve economic opportunity, and promote sustainable development in rural Bangladesh. This comprehensive approach addresses the diverse challenges facing rural communities and paves the way for growth and prosperity.

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