Journal DOI: 10.36713/epra1013 | SJIF Impact Factor (2026): 8.748 ISSN: 2347-4378
EPRA International Journal of Economics, Business and Management Studies (EBMS)
Volume: 13 | Issue: 5 | May 2026 -Peer-Reviewed Journal

INCOME AND EXPENDITURE PATTERNS OF AGRICULTURAL HOUSEHOLDS IN NORTHERN INDIA: A NSSO-BASED STUDY

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Article DOI: https://doi.org/10.36713/epra27615
DOI No: 10.36713/epra27615

ABSTRACT

In India, rural households rely heavily on the agriculture sector for their livelihood. The income and expenditure patterns of these households have a significant impact on this sector. Rural households earn from both agricultural and non-agricultural activities. The current study aims to analyze households' income sources as well as their income and expenditure patterns. The study is based on data from the 77th round of the Situation Assessment Survey of Agricultural Households, Land and Livestock Holdings of Households in Rural India (2019). The study includes six states of northern India.

INTRODUCTION

The agriculture sector is a vital source of income and employment in India. Its share in Gross Value Added was about 15 percent, with a growth rate of approximately 3 percent during 2023-24 (Reserve Bank of India, 2025). Employment patterns have also evolved due to structural changes affecting agriculture across different states. Factors such as irrigation, cropping patterns, productivity levels, farm size, and climatic conditions vary among states and impact the sector. All these elements influence the income levels of agricultural households in India.

The northern region of India also significantly depends on agriculture, particularly in rural areas, as a means of livelihood. Income sources and expenditure patterns vary across rural households. The purpose of the current study is to examine both. The standard of living is largely influenced by the patterns of income generation and household expenditure. Understanding the nature and sources of these variables provides better insights.

Agriculture is one of the main sources of rural livelihoods, whether through cultivation or through wage work in the fields. Most household activities are connected to this sector. Its importance is evident from the fact that agricultural households in India earn a total average monthly income of around 10,000 rupees, including 4063 rupees from wages, 3798 from crop production, 1582 from animal farming, 641 from non-farm businesses, and 134 from leasing land. (NSSO, 2021) Expenditure scenario shows that these households spend most on livestock and poultry, followed by agricultural machinery and implements. The total average monthly expenditure on productive assets is 806 rupees. (NSSO, 2021)

A household is defined as a group of people who usually live together and share a common kitchen. According to the NSSO survey (2021), an agricultural household receives a produce value of more than 4000 rupees from agricultural activities and has at least one member self-employed in agriculture, either as a main activity or in a subsidiary role, for the past 365 days. For agricultural expenditure, both out-of-pocket expenses and imputed costs were recorded in the NSSO 77th round. Income from land rent was also collected during this round.

OBJECTIVES

1. To examine the income and sources of income among agricultural households of rural Northern India.
2. To examine the expenditure pattern of agricultural households in rural Northern India.

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3. To examine the expenditure patterns on crop production among agricultural households of rural Northern India.

DATA SOURCES AND METHODOLOGY

The descriptive study relies on secondary data from the Situation Assessment report of Agricultural Households, Land and Livestock Holdings of Households in Rural India, 2019, which is based on the NSSO's 77th round. The survey offers a comprehensive range of information on income, productive assets, indebtedness, and farming practices of agricultural households. Data were collected during two visits spanning the 2018-19 agricultural year.

The Northern region states of Punjab, Haryana, Himachal Pradesh (HP), Uttarakhand, Uttar Pradesh (UP), and Rajasthan are included in the study for comparative analysis. The study examines the average monthly income from different sources, expenditure on productive assets, and expenditure on crop production among agricultural households. The percentage of income and expenditure is calculated to compare the shares of each state.

REVIEW OF LITERATURE

Sharma, Rao, Sisodia, Verma, and Singh (2018) investigated the income patterns among agricultural households. They also examined the share of agriculture in total income and the relationship between farm size and its contribution to income. Data was collected from a survey conducted by the Giri Institute of Development Studies, Lucknow. The study included four villages: Gohanakala in Lucknow district of the Central region; Senapur in Jaunpur district of the Eastern region; Pandari in Chitrakoot district of Bundelkhand; and Seemli in Muzzafarnagar district of the Western region. An individual dimension index score was created using Principal Component Analysis (PCA). Results showed that, in total income, services and wages accounted for the highest shares, and there was a significant correlation between farm size and income.

Priscilla, Singh, and Vatta (2021) conducted a study to assess income inequality and the impact of different income sources on inequality among agricultural households in northeastern states. The study used data from NSSO, published in the situation assessment survey of agricultural households for 2012-2013. The study was based on eight states (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura), covering 86 districts and 5100 rural agricultural households. Two key tools, the Gini coefficient and the Theil index, were used to measure the data. The study concluded that as income increases, farmers tend to shift from farm to non-farm activities. Income distribution varied across different income sources and was not uniform. A significant contributor to income inequality is intra-state and district-level landholding disparities, as measured by the Theil index.

Das, Vatta, and Priscilla (2023) conducted research to examine income diversification among agricultural households. They also explored the factors responsible for diversification. The study analyzed the role of various income sources in generating inequality. Data were collected by the NSSO as part of the situation assessment survey. The Simpson index of diversity was used to assess household diversification. Tobit regression was employed to investigate the determinants of diversification. The Gini coefficient and Theil index were used to measure income inequality among agricultural households. Findings showed that non-farm income, landholding size, and irrigation infrastructure significantly impact rural household income diversification. Crop revenue emerged as the primary source of income inequality. However, the authors found that wages, salaries, and livestock revenue could serve as feasible avenues to reduce economic inequality.

Kumar and Simran (2023) examined agricultural performance in Uttar Pradesh at both the district and regional levels, taking into account recent trends in the sector. To assess the sector's performance, the compound annual growth rate (CAGR) was used. The study found that agriculture performs the worst among the sectors. It recorded growth rates of 2.6 in agriculture, 6.3 in the secondary sector, and 9.4 in the tertiary sector. According to regional data, Western Uttar Pradesh experienced the highest growth, followed by Eastern Uttar Pradesh, Bundelkhand, and Central Uttar Pradesh. Livestock contributed more to agricultural growth than crops.

Sharma, Malik, and Sharma (2024) studied how agricultural households in India's mountainous states varied in their income and consumption expenditures. Eleven mountainous states, including Jammu & Kashmir, Uttarakhand, Himachal Pradesh, Sikkim, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and Assam, were taken for this purpose. The prevalence of poverty in each state was also examined. The study was based on data from

NSSO's assessment surveys (2012-2013 to 2018-2019). The determinants influencing household income were analyzed using a log-linear multiple regression model. The analysis found that farm revenue has significantly decreased, while non-farm income, such as salaries and wages, has increased. It also resulted in a significant increase in consumption spending and a decrease in poverty.

Das et al. (2025) studied the income diversification pattern and the factors responsible for it in the northeastern states of India. The NSSO 77th round situation assessment data survey was used. Multivariate Probit and logit regression models were used to analyze the data. The study concluded that the agricultural household relied primarily on crop production. The main reasons were a lack of irrigation, limited market access, and limited fragmentation. Although there was a shift towards non-farm income among agricultural households, it was limited. The study revealed significant income diversification. Key determinants of income diversification include socio-economic characteristics and household income levels, suggesting a shift towards non-farm activities as income increases.

Shukla (2025) examined the income distribution among agricultural households in India. The contribution of various income sources to income inequality among agricultural households was examined through a state-level analysis. The study showed the distribution of farm and total income among agricultural households. It was based on secondary data from the NSSO's Situation Assessment survey of agricultural households. The equality distributional metric was utilized to analyze the data in this study. Additionally, the data were analyzed, including the Gini coefficient, percentile distribution, and decile dispersion ratio. The study concluded that farm income is heavily concentrated among the top 10 percent. For non-farm income, agricultural household earnings increased to 32 percent (among households earning more than $10,000 per month). A more equitable distribution is indicated by the Gini coefficient of total income being significantly lower than that of farm income.

Although several studies examined agricultural income and expenditure, limited evidence was found for the selected region. The recent NSSO Situation Assessment Survey, 77th round, also needs exploration in this regard. In view of the research gaps, the present study analyzes the income and expenditure patterns of agricultural households using the 77^{th} round data, with a focus on northern region states.

Explanation
The study is divided into three sections. Section I covers the income of agricultural households, and Section II covers their expenditure on productive assets. Section III explores the expenditure on crop production items.

I: Income of Agriculture households
The northern states are analyzed using the average monthly income per agricultural household. Additionally, income from various sources is examined to determine which is the primary source of revenue for each state. The northern states include Himachal Pradesh and Uttarakhand, which signify mountainous agriculture. Punjab, Haryana, and Uttar Pradesh are states that represent plains agriculture. Western Uttar Pradesh, Punjab, and Haryana are important producers of food grains. Their agricultural development was greatly influenced by the Green Revolution. However, there are some similarities between Himachal Pradesh and Uttarakhand, including the prevalence of horticultural crops and natural farming.

Agriculture households derive income from several sources, including wages, land leasing, net receipts from crop production, net receipts from animal farming, and net receipts from non-farm businesses. In terms of total income, Punjab and Haryana are high-income states, with around 27,000 and 23,000 rupees, respectively (data in Table 1). Himachal Pradesh and Uttarakhand earn around 12-13 thousand. Uttar Pradesh earns the least income, around 8 thousand. UP is the least income state in terms of agricultural income.

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Table 1: Average monthly income from different sources per agricultural household during the agricultural year July 2018 – June 2019

States → Sources of income↓	Punjab	Haryana	Himachal Pradesh	Uttarakhand	Uttar Pradesh	Rajasthan
Income from wages	5981 **(22.4)**	7861 **(34.4)**	6393 **(52.6)**	3728 **(27.5)**	2900 **(35.9)**	5356 **(42.8)**
Income from leasing out land	2652 **(9.9)**	621 **(2.3)**	71 **(0.6)**	191 **(1.4)**	119 **(1.5)**	77 **(0.6)**
Net receipts from crop production	12597 **(47.2)**	9092 **(39.8)**	2552 **(20.9)**	5277 **(38.9)**	3290 **(40.8)**	3731 **(29.8)**
Net receipts from farming of animals	4457 **(16.7)**	4020 **(17.6)**	1811 **(14.9)**	3292 **(24.3)**	1365 **(16.9)**	2356 **(18.8)**
Net receipts from non-farm business	1014 **(3.8)**	1249 **(5.5)**	1326 **(10.9)**	1064 **(7.9)**	387 **(4.8)**	1000 **(7.9)**
Total	**26701**	**22841**	**12153**	**13552**	**8061**	**12520**

Source: NSSO (2021), NSS 77th Round, *Situation Assessment of Agricultural Households*, 2019.
Note: Figures in parentheses indicate calculated percentages out of total income.

Among all sources, crop production is a major source of income in all states except Himachal Pradesh. Agriculture households in Punjab earn not only the highest income from crop production within the state but also the highest among all states, accounting for about 47 percent. Haryana, Uttar Pradesh, and Uttarakhand also account for the highest share of crop production income, at nearly 40 percent. Himachal Pradesh is the only exception, where around 53 percent of income is earned through wages, the highest from this source among all states. In all other states, wages are the second-largest source, with around 22 percent in Punjab and 28 percent in Uttarakhand. Agricultural households in Haryana and Uttar Pradesh earn about 35 percent of their income from wages. Income from animal husbandry is another significant source, with Uttarakhand generating the highest share at approximately 24 percent. Punjab, Haryana, and Uttar Pradesh earn around 17 percent from animal farming, while Himachal Pradesh earns 15 percent. Income from land leasing has been included in the 77th round. The importance of this source is evident from Punjab's scenario, where it contributes about 10 percent of the total income. In Haryana, its share is around 3 percent, and in other states, it is 1 percent. Net receipts from non-farm business are highest in Himachal Pradesh, at around 11 percent, compared to other states. Uttarakhand and Rajasthan earn approximately 8 percent from this source, while in other states, the share ranges from 4 to 5 percent. Agricultural growth across northern Indian states shows notable regional differences. While Punjab and Haryana exhibit irrigation-driven, input-intensive growth that leads to high productivity and stable output, states such as Himachal Pradesh and Uttarakhand experience slower growth, primarily due to terrain constraints and small landholdings. Uttar Pradesh demonstrates a productivity-focused growth, highlighting structural differences in agricultural income and production trends (Singh, 2020).

II. Expenditure on Productive Assets

Expenditure by agricultural households is divided into farm business and non-farm business. In farm business, it is further classified under headings such as expenditure on livestock & poultry, agricultural machinery & implements, and other productive assets. Other productive assets include land for farm use, a building for farm purposes, and a fish tank used in farm activities. Table 2 represents the total average monthly expenditure on productive assets per agricultural household.

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Table 2: Average monthly expenditure on productive assets per agricultural household during the agricultural year July 2018 – June 2019

States→ Average monthly expenditure on productive assets ↓	Punjab	Haryana	Himachal Pradesh	Uttarakhand	Uttar Pradesh	Rajasthan
Livestock and Poultry (i)	328 **(15.2)**	923 **(30.5)**	110 **(6.6)**	155 **(18.3)**	112 **(23.7)**	181 **(15.2)**
Agricultural machinery and implements (ii)	1319 **(60.5)**	1076 **(35.5)**	182 **(10.9)**	406 **(47.9)**	218 **(46.1)**	484 **(40.5)**
Other productive assets (iii)	283 **(13.1)**	698 **(23.0)**	1136 **(68.1)**	221 **(26.1)**	121 **(25.6)**	493 **(41.3)**
Total expenditure on farm business I (i+ii+iii)	1930 **(89.2)**	2697 **(89.1)**	1428 **(85.6)**	782 **(92.2)**	451 **(95.3)**	1158 **(96.9)**
Total expenditure on non-farm business II	232 **(10.7)**	332 **(10.9)**	241 **(14.4)**	65 **(7.8)**	22 **(4.7)**	37 **(3.1)**
Total (I+II)	**2163**	**3030**	**1669**	**848**	**473**	**1194**

Source: NSSO (2021), NSS 77th Round, *Situation Assessment of Agricultural Households*, 2019.
Note: Figures in parentheses indicate calculated percentages from the total average monthly expenditure.

Haryana spends the highest amount on productive assets, Rs. 3030, followed by Punjab with Rs. 2163. HP spends Rs. 1669, Rajasthan expenditure is Rs. 1194, and Uttarakhand spends Rs. 848. Uttar Pradesh spends the least on productive assets, Rs. 473.

Category-wise, Punjab allocates the highest proportion of its total expenditure on agricultural machinery and implements, at around 61 percent. About 48 percent and 46 percent, respectively, are spent in Uttarakhand and Uttar Pradesh. HP spends the least on this category, at about 11 percent, while Haryana spends around 36 percent. Another significant area of expenditure is livestock and poultry, with Haryana accounting for 30 percent of all expenses on this, and Uttar Pradesh accounting for 24 percent. Uttarakhand pays 18 percent, and Punjab spends 13 percent. HP has the smallest share, at roughly 7 percent of livestock and poultry. Rajasthan allocates the largest share to other productive assets and machinery, and the least to non-farm business.

HP spends the largest proportion on other productive assets, approximately 68 percent. Uttarakhand, UP, and Haryana spend more than 20 percent of their budgets on productive assets. Punjab spends the least on this, roughly 13 percent. Expenditure on farm and non-farm business shows that all states primarily invest in farm-related activities. In Himachal Pradesh, non-farm businesses account for around 14 percent, compared to 11 percent in Punjab and Haryana. Uttarakhand allocates 8 percent, while Uttar Pradesh spends just 5 percent. The expenditure patterns clearly indicate that Punjab mainly invests in agricultural machinery and technology, whereas other states diversify their spending across different categories. Himachal Pradesh primarily invests in other productive assets. Nonetheless, agricultural machinery remains one of the major expenditure heads across all states except HP. Farm business remains a primary area of spending in all states. Additionally, higher-income states tend to spend more on productive assets, while lower-income states allocate less.

III. Expenditure on Crop Production

Crop Production is a major source of income for agricultural households. Crop production expenditure is further classified into the following heads: input seeds, fertilizers/Manure, Plant Protection Materials, Lease rent for land, Human Labour, and other expenses. As per Table 3, UP spends 39 percent of its budget on other crop production expenses, followed by Uttarakhand. Punjab, Haryana, and HP are nearly spending one fourth upon other expense categories.

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Table 3: Percentage distribution of Average monthly paid out expenditure for crop production per household during the agriculture year July 2018 – June 2019

States → Expenditure for crop production ↓	Punjab	Haryana	Himachal Pradesh	Uttarakhand	Uttar Pradesh	Rajasthan
Seeds	5.6	6.9	12	8.8	12.6	13.6
Fertilizer/manure	16.6	12.6	23.2	18	20.4	17.2
Plant protection materials	9.7	9.7	16	5.8	6.8	4.5
Lease rent for land	31	29	0.8	1.3	2.2	0.5
Human labor	13.6	15.1	24.5	33.8	19.1	15.5
All other expenses	23.5	26.7	23.5	32.4	39	48.8
Total expenses	**100**	**100**	**100**	**100**	**100**	**100**

Source: NSSO (2021), NSS 77th Round, *Situation Assessment of Agricultural Households*, 2019.

However, in Punjab and Haryana, expenditure on land lease rent is also a major expenditure item; nearly 30 percent of total crop production expenditure is allocated to it. Other states showed a significant disparity, with a meagre 1-2 percent spent on this source. Fertilizers and manure are another important category that HP spends the most on, with around 23 percent. UP spends around 20 percent, followed by Rajasthan and Punjab, which spend 17 percent each. Uttarakhand spends 18 percent, Haryana around 13 percent. Seed components account for 12-13 percent of total crop expenditure in HP, UP, and Rajasthan. Punjab, Haryana, and Uttarakhand spend less than 10 percent on this. HP spends the most on plant protection material among all states, around 16 percent. Punjab and Haryana spend around 10 percent. Uttarakhand, UP, and Rajasthan spend less than 10 percent.

Human labour is another important head of expenditure for crop production. Uttarakhand spends the highest amount, around 34 percent, followed by HP. UP spends 19 percent of its budget on human labour. Punjab and Haryana spend 14 and 15 percent for the same.

UP and Rajasthan spend the highest amount on the other expenses category. HP and Uttarakhand incur high expenditure on human labour. Punjab and Haryana spend a large amount on lease rent for land, followed by other expenses category. Patterns of crop production expenditure vary among states; however, all states are spending on human labour, fertilizers, and plant protection material. It indicates the significance of crop production as an income source of agriculture households.

CONCLUSION

The analysis highlights significant inter-state differences in income sources and expenditure patterns among agricultural households. Crop production is the dominant income source in most states, except in Himachal Pradesh and Rajasthan, where wage income plays a great role. States like Punjab and Haryana not only earn more from crop production but also show higher income from animal farming among selected states. Income from land leasing is particularly important in Punjab. Expenditure on productive assets is highest in Haryana, followed by Punjab, and lowest in Uttar Pradesh, suggesting a positive link between income levels and investment capacity. Punjab leads in machinery expenditure, reflecting mechanization, while Haryana invests in both machinery and livestock. In contrast, Himachal Pradesh shows lower spending on these assets but relatively higher allocation to other productive assets. Across states, farm businesses consistently receive more investment than non-farm activities. Expenditure on crop production shows that Punjab and Haryana are inclined towards lease-based farming. Himachal Pradesh and Uttarakhand are labour-intensive states spending on human labour for crop production. Uttar Pradesh and Rajasthan have high other expenses, indicating less structured costs. Overall, higher-income states invest more in productive assets, while lower-income states like Uttar Pradesh invest less, potentially constraining agricultural growth.

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