



Does Non-Cultivating Activities Improve the Farmers Income: An Analysis from Situation Assessment Survey

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ABSTRACT

The present study is trying to analysis the importance of non-cultivating activities in income of small and marginal farmers because approximately 94 per cent of the farmers are small and marginal in India. Semi medium and medium jointly contributed 5.8 per cent of the total farm households and large farmers contribute only 0.1 per cent of total farmer's households in India as per NSS 77th reports. The share from wages of small and marginal farmers lies between 25 per cent to 77 per cent while share from cultivation lies between 1 per cent to 63 per cent of the same landholding farmers. Hence the income from wages is more important than the income from cultivation of marginal and small farm households in rural India. As per Situation assessment survey, there are 76.5 per cent farmers are marginal farmers who have less than 1 hectare of land in 2018-19 and in this small piece of land, a farmer cannot generate a sustainable income by cultivation only. Therefore, the present study is trying to analyze land holding pattern and diversifying income pattern of marginal and small farmers in India.

Keywords- Farmer, Farm Income, Non-farm income, Landholding, Situation Assessment Survey



1.INTRODUCTION

India is a country of small and marginal farmers where the total contribution of these farmers is approximately 94 per cent of total rural farm households (NSS 77thRound). These farmers, typically owning less than 2 hectares of land cultivate approximately 44 percent of the total cultivated area and contribute to nearly 60 percent of the country's food grain production (Agricultural census, 2014). Marginal and small farmers in India tend to be more efficient than large farmers, particularly regarding crop intensity and output per hectare (Chand et al., 2011). Despite their greater efficiency compared to medium and large farmers, small and marginal farmers in India remain significantly poorer than the rest of the population (Gururaj B. et al., 2017). This economic disparity can be attributed to the average size of land holdings among small and marginal farmers, which is approximately 0.38 hectares, significantly smaller than the 17.37 hectares typically held by large farmers (Dev, 2017). Consequently, this limited land size prevents them from generating sufficient income and employment solely through crop cultivation. Even with high farm productivity, marginal and small farmers often struggle to generate enough income to sustain their livelihoods (P.C. Meena et al., 2017). In India, a worker in primary sector earned a daily wage rate of Rs. 192, while it is Rs. 357 and Rs. 424 in secondary and tertiary sectors respectively in 2011–12 (Basantaray A. K., et al., 2024).

However, agriculture remains a crucial sector in the economies of many developing nations like India. This sector serves as a major source of employment, providing livelihoods for an estimated 60 to 70 percent of the population. Despite its importance, agricultural production in these countries often suffers from low productivity and inadequate income levels, mainly due to reliance on subsistence farming and limited access to markets and technology (Nguyen A.T., et al., 2015). Several national and international studies have suggested that diversification from farm activity to non-farm activities has significant potential to enhance farmers income (Barrett et al., 2001; P.C. Meena et al., 2017). Diversions of farmers from farm activities to non-farm activities will help not only reduce pressure on the land but also increase their per capita income (Ranganathan et al., 2016). Bathla Seema, et al (2019), finds that the marginal and small farmer

households (less than 2 ha) constituted more than 60 per cent of their income from alternative sources such as livestock and wages.

When we see the land holding pattern, we find that the proportion of marginal and small farmers has been increasing steadily, for instance, the proportion of marginal and small farmers is 90.4 per cent in 2002-03 which increase 94 per cent in 2018-19. In contrast, large farmers represent a very small percentage, declining from 0.5 per cent in 2002-03 to 0.1 per cent in 2018-19. This shift in land ownership dynamics is primarily attributed to demographic pressures on landholdings, leading to more landless and marginal farmer. With the increase in the number of landless and marginal farmers over the past decade, rural people can no longer depend on agriculture for their livelihood. The dominance of marginal and small holdings in agriculture indicates that more individuals may soon be compelled to leave the agricultural sector. The fragmentation and subdivision of landholdings will become acute and the landholdings will become economically unviable to cultivate (Yadu, C. R., & Satheesha, B, 2016). The NSSO-SAS report (2005) indicates that 40 percent of farmers would leave agriculture sector and pursue alternative careers due to low farming incomes (Birthal et al., 2015). This clearly suggests that the farmers are in great distress. To enhance farmer's livelihoods, it is important to address these challenges. To enhance farmers livelihoods, it is crucial to analyze the landholding patterns and diversify the income sources of marginal and small farmers in India, shifting their focus towards non-farm or non-cultivating activities.

2. DATA SOURCE

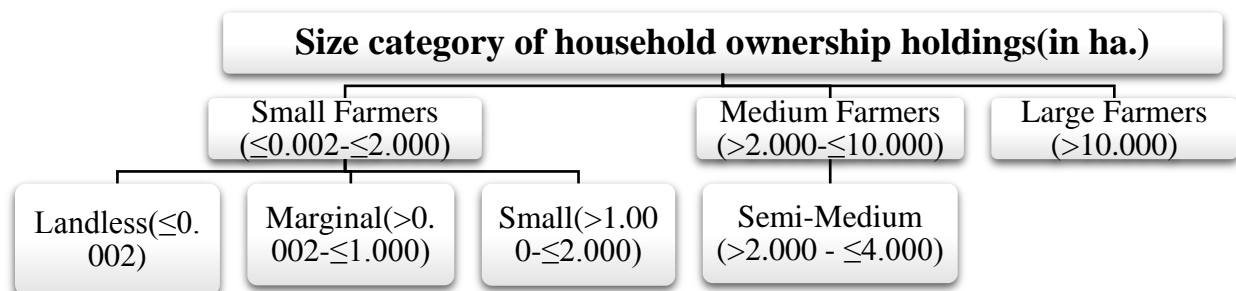
The study is based on secondary data sourced from the National Sample Survey Office (NSSO), specifically from three reports, the 59th Round (2003), No. 497; the 70th Round (2013), No. 576; and the 77th Round (2019), No. 587. These reports are related to the Situational Assessment Surveys of Farmer's Income, Agricultural Situation, Expenditure, Productive Assets, Indebtedness, and Land and Livestock Holdings of Rural Households in India.

3.Results and discussion

3.1 Distribution of Land Holding Ownership at all India level

In an agrarian society, land serves as the fundamental means of production, without which agricultural activities cannot take place. Consequently, understanding the ownership patterns and operational holdings of land is crucial for analyzing the agrarian class structure. The agriculture sector could not provide sufficient income and employment opportunities particular to the marginal and small farmers in rural area. In this situation rural non-farm activities contribute a significant role in reducing poverty and improve income level in rural areas. In India, data on landholdings, particularly ownership holdings, have been provided by the National Sample Survey Office (NSSO). The NSSO categorizes agricultural households into six distinct groups, large (>10.00 ha), medium (>4.00 - ≤10.00 ha), semi-medium (>2.00 - ≤ 4.00 ha), small (>1.00 - ≤ 2.00 ha), marginal (>0.002 - ≤ 1.00 ha) and landless (≤0.002 ha). These classifications can be broadly categorized into three main groups: small, medium, and large farmers. Small farmers are those with landholdings up to 2.0 hectares, medium farmers have landholdings between 2.0 and 10.0 hectares, and large farmers possess landholdings exceeding 10 hectares. Figure 1 illustrates the distribution of ownership holdings within the Indian agrarian system, highlighting the allocation of land among these various categories of farmers. This distribution is critical for understanding the socio-economic dynamics in rural India.

Fig 1- Distribution of Household ownership holdings (in ha.)



Source: NSSO SAS Report:77th Round

Table 1 presents the changing percentage distribution of households based on ownership holdings in India across the years 2002-03, 2012-13, and 2018-19. At the national level, the proportion of marginal farmers increased from 69.6 percent in 2002-03 to 75.4 percent in 2012-13, further rising to 76.5 percent in 2018-19. The share of small farmers decreased from 10.8 percent in 2002-03 to 9.3 percent in 2018-19. The ratio of medium farmers experienced a decline from 3 percent in 2002-03 to 1.9 percent in 2012-13, and further diminished to 1.4 percent in 2018-19. Similarly, the share of large farmers decreased from 0.5 percent in 2002-03 to 0.2 percent in 2012-13, further diminished to 0.1 percent. The prevailing trend in India indicates a growing proportion of marginal farmers alongside a marginal decline in the share of small farmers, while significant declines in medium and large farmers. Marginal farmers notably predominate the agrarian structure, while medium and large farmers hold significantly lesser shares, to the extent that their representation is negligible.

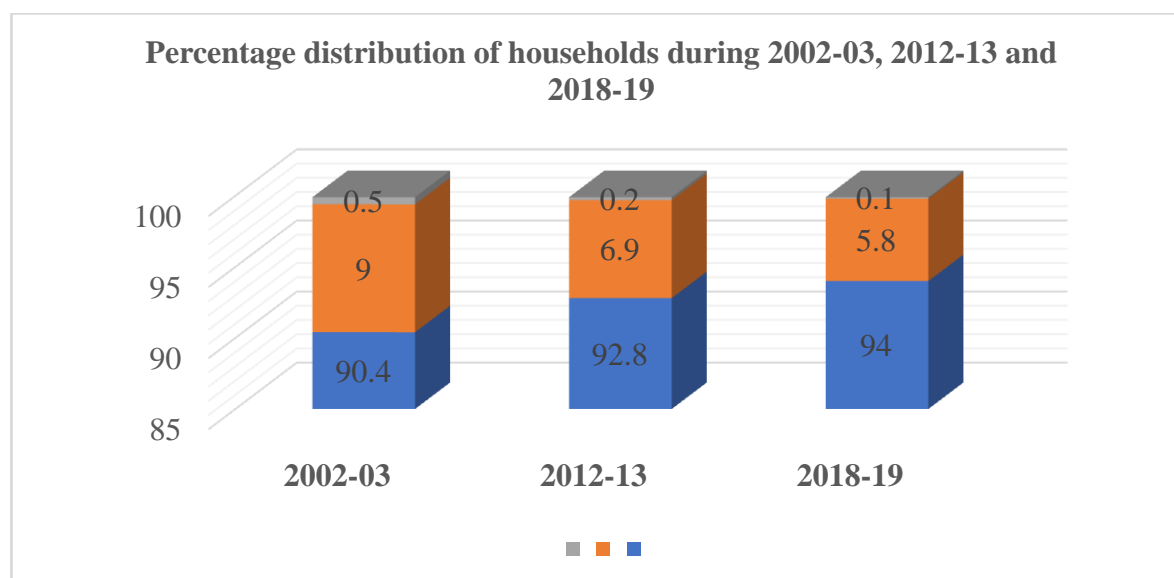
According to the National Sample Survey Office (NSSO), small farmers are those with landholdings below or equal to 2 hectares. Therefore, for analytical purposes, we can consider the combined group of landless, marginal and small farmers as small farmers as a whole. Medium farmers are those with landholdings from more than 2 to 10 hectares, while large farmers are those with landholdings exceeding 10 hectares. The dominant ownership category in the agrarian structure of India is marginal farmers, with medium and large farmers holding the least share, which is negligible. Small farmers comprising landless, marginal and small, collectively represent the majority of the agricultural households in India, with marginal farmers having the highest share among them. The primary characteristic of contemporary farming in India is the prevalence of marginal landholdings. The fragmentation and subdivision of landholdings will become acute and the landholdings will become economically unviable to cultivate (Yadu, C. R., & Satheesha, B. (2016).

Table-1 Distribution of Households in ownership holdings (in percent)

Size category of household ownership holdings(in ha.)	Percentage distribution of households		
	2002-03	2012-13	2018-19
Landless(≤ 0.002)	10.0	7.4	8.2
Marginal($>0.002-\leq 1.00$)	69.6	75.4	76.5
Small ($>1.00-\leq 2.00$)	10.8	10.0	9.3
Semi-medium ($>2.00-\leq 4.00$)	6.0	5.0	4.4
Medium($>4.00-\leq 10.00$)	3.0	1.9	1.4
Large (>10.00)	0.5	0.2	0.1
All sizes	100.0	100.0	100.0

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

Fig 2- Percentage distribution of households during 2002-03, 2012-13 and 2018-19



Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

Figure 2 illustrates the percentage distribution of households in India for the years 2002-03, 2012-13, and 2018-19. In 2002-03, the share of small farmers was 90.4 percent, which increased to 92.8 percent in 2012-13 and further to 94 percent in 2018-19. Conversely, the share of medium farmers decreased from 9 percent in 2002-03 to 6.9 percent in 2012-13, and then to 5.8 percent in 2018-19. Similarly, the proportion of large farmers fell from 0.5 percent in 2002-03 to 0.2 percent in 2012-13, and then to 0.1 percent in 2018-19. This data clearly indicates that in India, agricultural households predominantly belong to the small farmers category. The share of medium and large farmers is so small that they are almost negligible.

3.2 Income of agricultural household in India

The Income of agricultural household is typically categorized into two parts farm income and non-farm income. Farm income comprises the net income from crop production and animal farming, while non-farm income includes income from wages, income from leasing out land and net income from non-farm business. In year 2002 and 2012 income from leasing out land is not accounted. But in NSSO 77th round the concept leasing out land is incorporated in non-farm income. Table 2 shows average monthly income per farmer household at all- India level using situation assessment survey 59th (2002-03), 70th (2012-13) and 77th (2018-19) round. In 2002-03 the primary income source is from crop production i.e 46 percent. This share increased in 2012-13 by 48 percent but in 2018-19 the share from crop production declined to 37.17 percent. In 2018-19 the main source of income is from wages i.e of 40percent.

In India, a substantial part of agricultural household income has historically been derived from crop production. However, due to diminishing returns from crops production and the increasing percentage of marginal farmers, the proportion of income generated from crop production has declined. According to data from the SAS across various years shown in table 2, it is clear that wage income has emerged as the predominant income source and income from animal farming also showing an increasing trend among agricultural households. In India, the majority farmers are marginal farmers with landholdings so small that they are not economically viable for cultivation. Consequently, they have to depend on wages or animal farming rather than crop production to supplement their income level. Over time, there has been a noticeable rise in

the proportion of income generated from wages and animal farming compared to the total income. This trend suggests a movement away from agriculture-based activities. This shift from agriculture-dependent income to non-cultivating sources is referred to as the de-agrarianization of agriculture (Bryceson, 1996).

Table 2 Farmers Income from different sources

Source of Income (in Rs.)			
Source of Income	2002-03	2012-13	2018-19
Income from wages	819 (38.72)	2,071 (32.22)	4,063 (39.76)
Income from leasing out of land	X	X	134 (1.33)
Net receipt from crop production	969 (45.9)	3,081 (47.9)	3,798 (37.2)
Net receipt from farming of animals	91 (4.3)	763 (11.9)	1,582 (15.5)
Net receipt from non-farm business	236 (11.2)	512 (8.0)	641 (6.3)
Total income	2,115 (100)	6,427 (100)	10,218 (100)

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

* Values in Parenthesis are in per cent

The distribution of income between agricultural and non-agricultural activities in India experienced notable changes over the years, as illustrated in Figure 1. There are several studies which had found that the income from non-farm activities and non-cultivating were essential for the welfare of rural households. The share of non-farm activities is increasing particular for small and marginal farmers in India because a small piece of land cannot fulfill the basic livelihood of these farmers. Initially, in 2002, the ratio of farm income to non-farm income is 50:50. By 2012-13, this ratio had significantly shifted to 60:40, indicating a substantial rise in share of farm income. This increase was due to higher net income from crop production by 47.94 percent

which was earlier 45.82 percent in 2002-03 and share from net receipts of farming of animal also increased to 11.87 percent which was earlier 4.30 percent in 2002-03.

Table3- Ratio of Farm Income to Non- Farm Income

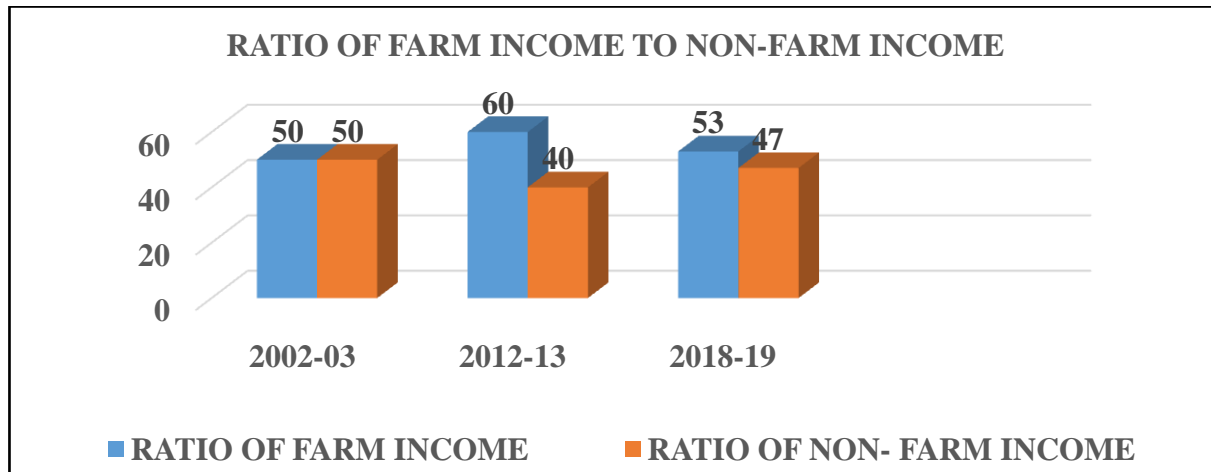
Year	2002-03	2012-13	2018-19
Ratio of farm income	50	60	53
Ratio of non-farm income	50	40	47

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round

However, by 2018-19, the ratio had reverted to 53:47, showing a decline in the relative share of farm income. This shift was mainly due to an increase in income from wages to 39.76 percent in 2018 -19 which was 32.22 percent in year 2012-13. But farm income from net receipts from animal farming shows an increasing trend in 2002-03 the ratio is 4.30 percent which rise to 11.87 percent in 2012-13 and in 2018-19 the share is 15.48 percent. This trend suggests that farmers in India have been diversifying their economic activities, possibly due to lower returns from crop production and the increasing percentage of marginal farmers. This diversification into non-cultivating income sources reflects a shift towards alternative livelihoods.

India is predominantly characterized by small farmers (0-2ha.), comprising 94 percent of all farmers by 2018-19, which includes landless, marginal and small farmers. Among these small farmers, marginal farmers constitute the largest share at 76.5 percent by 2018-19. Agricultural farmers derive their income from various sources such as wages, crop production, animal farming, non-farm business, and leasing out land. The following tables shows the analysis of monthly income per agricultural household from these various sources across varying sizes of land holdings in India, which reveals significant trends over the periods 2002-03, 2012-13, and 2018-19.

Figure 3 Ratio of Farm and Non-farm Income



Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

3.2.1 Average Monthly Income of Farmers from Wages

Income from the wages play an important role in farmers income particular for marginal and small farmers in India because as their tiny piece of land cannot maintain the sustainable livelihood of these farmers. Income from cultivation only is insufficient to cover the monthly consumption expenses of the marginal and smallfarmers in India. In 2013, average monthly income of the marginal and small-scale farmers from one hectare of land was insufficient to meet their monthly consumption expenditure. Table 4 shows the monthly farmer income from wages. The data indicates that households with land holdings below 1 hectare in India primarily depend on wages as their primary income source. The percentage contribution of wages to total income is high in the landless and marginal farmers, approximately more than 50% during the periods of 2002-03, 2012-13, and 2018-19. Due to their small land sizes, which make cultivation unprofitable, these farmers depend heavily on wage income to fulfil their basic necessities. As the size of landholdings increases, the percentage of income derived from wages declines.

TABLE 4 Average Monthly Incomes of Farmers from Wages

SIZES OF LANDHOLDINGS (In Hectare)	Income from Wages(Rs)		
	2002-03	2012-13	2018-19
<0.01	1075(77.90)	2902(63.31)	6435 (57.43)
0.01-0.40	973 (59.58)	2386(57.47)	4491 (59.70)
0.40-1.00	720 (39.80)	2011 (38.33)	3906 (45.58)
1.01-2.00	635(25.47)	1728 (23.52)	3647 (31.86)
2.01-4.00	637 (17.75)	1657(15.44)	3548(21.59)
4.01-10.00	486 (8.55)	2031 (10.34)	4273 (15.10)
10.00+	557(5.76)	1311(3.17)	3943 (6.49)
All sizes	819(38.72)	2071 (32.22)	4063 (39.76)

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

* Values in Parenthesis are in per cent

3.2.2 Average Monthly Income of Farmers from Crop Production

Income from crop cultivation is sufficient for large farmers only who contribute only 0.1 per cent of the total rural households in India (NSS 77th Round). Hence for the small and marginal farmers, they have to develop their alternative income other than crop cultivation. Table 5 shows the monthly farmer income from crop production. According to this data the proportion of net income from crop production increases with the size of land holdings over these periods (2002-03, 2012-13, and 2018-19).

It indicates that larger landholders derive a greater portion of their income from crop production. In 2018-19, agricultural households with 0.01-0.40 hectares of land derived 12.99 percent of their income from crop production. In contrast, farmers with landholdings larger than 10 hectares derived 71.76 percent of their income from crop production. This demonstrates a positive correlation between land size and agricultural income. However, in 2018-19, medium

and large farmers constituted only 5.9 percent of the total, representing an insignificantly small share.

TABLE 5 Average Monthly Incomes of farmers from Crop Production(Rs.)

SIZES OF LANDHOLDINGS (In Hectare)	Income from Crop Production(Rs)		
	2002-03	2012-13	2018-19
<0.01	11(0.80)	30(0.66)	1660(14.81)
0.01-0.40	296 (18.13)	687(16.55)	977(12.99)
0.40-1.00	784 (43.34)	2145(40.88)	2683(31.31)
1.01-2.00	1578 (63.30)	4209 (57.28)	5269(46.03)
2.01-4.00	2685(74.81)	7359(68.58)	9432(57.39)
4.01-10.00	4676(82.31)	15243 (77.62)	19645 (69.44)
10.00+	8321 (86.08)	35685(86.22)	43599(71.76)
All sizes	969(45.82)	3081 (47.94)	3798 (37.17)

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

* Values in Parenthesis are in per cent

3.2.3 Average Monthly Income of Farmers from Animal Husbandry

Animal husbandry is another significant source of famers’ income in India. The growth in income from animal husbandry was considerably higher in the states of India (Vatta K, Budhiraja P., 2020).Marginal and small farmers constituted more than 60 per cent of rural households and directly depended on livestock and wages as alternate sources of their livelihood (Bathla S. and Kumar A., 2019).The annual farm household income grew at 3.7 per cent per annum during 2002–03 to 2012–13 however the growth is not uniform, income from animal husbandry increased at 13.2 per cent per annum, followed by agricultural wages (6.4 Per cent) and crop cultivation (4.3 per cent) during the same time period (Vatta K, Budhiraja P., 2020).Therefore, the income from livestock is the major source of income of small and marginal farmers in India and this share in significantly increasing over the time.

Table 6 shows monthly farmer income from animal husbandry during the years 2002-03, 2012-13 and 2018-19. Animal husbandry has emerged as an important source of income for farmers, particularly those with marginal landholdings. For marginal farmers, the significance of animal husbandry as an income source increased substantially from 2002-03 to 2012-13 and experiencing a slight decline by 2018-19. For instance, the share of income from animal husbandry for marginal farmers increased significantly from 5.53 percent in 2002-03 to 17.61 percent in 2012-13, though it slightly declined to 16.54 percent in 2018-19. However, it remains a crucial income source for marginal farmers (below 1 hectare). This increasing trend in income from animal husbandry is not limited to marginal farmers but is also observed across all agricultural households.

TABLE 6: Average Monthly Income of Farmers from Animal Husbandry in (Rs.)

SIZES OF LANDHOLDINGS (In Hectare)	Income		
	2002-03	2012-13	2018-19
<0.01	64 (4.64)	1181(25.89)	2084 (18.60)
0.01-0.40	94 (5.76)	621(14.96)	1162(15.45)
0.40-1.00	112 (6.19)	629(11.99)	1335(15.58)
1.01-2.00	102 (4.09)	818 (11.13)	1845 (16.12)
2.01-4.00	57 (1.59)	1161 (10.82)	2551 (15.52)
4.01-10.00	12(0.21)	1501 (7.64)	3451 (12.20)
10.00+	113 (1.17)	2622 (6.34)	11473 (18.88)
All sizes	91 (4.30)	763 (11.87)	1582 (15.48)

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

* Values in Parenthesis are in per cent

3.2.4 Average Monthly Income of farmers from Non-farm Activities

The results show that there is negative relationship between farm size and income from non-farm activities. Income from non-farm activities is declining with increasing the farm size.

Therefore, the income from non-farm activities plays a major role in small and marginal farmer’s income. Gururaj, B, et al 2017, gave the equal importance to both farm and non-farm activities income to double the income of the farmer’s particularly marginal and small farmers. It contributes around 5 to 7 per cent of income of small and marginal farmers. An increase in non-farm activities in agriculture sector remained a predominant source of income in most states in India (Bathla S., Kumar A., 2019). The non-farm activities provides farmers more income to fulfill their basic necessities such as: clothes, food, as well as healthcare facilities (Workie Sahu, 2017). Table 7 shows monthly farmer income from non-farm activities during the years 2002-03, 2012-13 and 2018-19. The data indicates that proportion of net income derived from non-farm business activities decreases as the size of landholding increases at the all-India level. In 2018-19, households with landholdings between 0.01-0.40 hectares had a non-farm business share of 9.35% of their total income. In contrast, households with more than 10 hectares of land had a non-farm business share of 1.91% of their total income. This indicates that as landholding sizes increase at the national level, the diversification of income sources decreases.

TABLE 7: Average Monthly Income of Farmers from Non-Farm Activities

SIZES OF LANDHOLDINGS (In Hectare)	Income from Non-Farm Business (Rs)		
	2002-03	2012-13	2018-19
<0.01	230(16.67)	447(9.80)	772(6.89)
0.01-0.40	270(16.53)	459(11.05)	703(9.35)
0.40-1.00	193(10.67)	462(8.81)	570(6.66)
1.01-2.00	178(7.14)	593(8.07)	613(5.35)
2.01-4.00	210(5.85)	554(5.16)	758(4.61)
4.01-10.00	507(8.92)	861(4.38)	472(1.67)
10.00+	676(6.99)	1770(4.28)	1162(1.91)
All sizes	236(11.16)	512(7.97)	641(6.27)

Source: NSSO SAS Reports: 59th Round, 70th Round and 77th Round.

* Values in Parenthesis are in per cent

4. CONCLUSION

The present study analyzes the landholding pattern and farmers' income from different sources in three rounds of the NSS, specifically the 59th, 70th, and 77th rounds. The study finds that landholding is declining over these time periods. The share of small and marginal farmers is slightly increasing, and they contribute around 94 percent of total rural households, while large farmers contribute only 0.1 percent. Small and marginal farmers cannot meet their monthly expenditures from cultivation income alone. Therefore, income from wages, animal husbandry, and non-farm activities plays an important role in their monthly income, particularly for small and marginal farmers. Income from wages constitutes between 30 to 50 percent of the average monthly income for small and marginal farmers, indicating that it is a significant source of income for them.

The contribution of animal husbandry to the income of small and marginal farmers is increasing significantly over time, suggesting that these farmers can generate sufficient income by diversifying into animal husbandry. Non-farm activities in rural areas are still in their early stages, contributing around 2 to 10 percent of farmers' income. The main finding of the study reveals that farmers' incomes cannot be doubled without diversifying from cultivation to non-cultivation activities, particularly for small and marginal farmers. Animal husbandry and non-farm activities are key factors in doubling the income of small and marginal farmers in India. The target of doubling farmers' income cannot be achieved without focusing on these areas.

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