



## Status and Changes in Composition of Agricultural Household's Income in India

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### ABSTRACT

The study used the NSSO's Situation Assessment Survey from 2012-13 and 2018-19 to determine the current status and changes in the composition of agricultural household income. During the agricultural years 2012-13 and 2018-19, an agricultural household's total nominal farm income increased at an annual rate of 9.61 per cent, while real income increased at a rate of 3.42 per cent. Assuming the projected growth trends in nominal and real income continue, the nominal income of agricultural households will take 7.5 years to double at All India levels, while the real income will take 21 years. The income composition of an agricultural household changed throughout the same period. The average annual percentage change in income from wages and salaries (10.37%) and from animal sources (6.14%) grew positively throughout the period, whereas crop (-1.25%) and non-farm business (-0.94%) grew negatively. 12 per cent increase in the share of wages and salaries in overall income was discovered and a corresponding reduction in crop income. In the agricultural year 2018-19, Rajasthan had the largest diversity in income sources (SID=0.43), and Andhra Pradesh had the lowest (SID=0.25), while All India had (SID=0.35). The result indicates that agricultural households are shifting their dependency for livelihood from crop income towards wages and salaries.

### INTRODUCTION

The current emphasis of national agricultural policies is not only on production and productivity gain but also on income growth too. Government of India (GoI) has set an ambitious target of doubling farmers' income (DFI) by the year 2022. To attain this target, an inter-ministerial "Committee on Doubling Farmers' Income," was established by Govt. of India, whose major role was to provide a framework for formulating policies aimed at attaining the target of DFI. With such a policy level push, significant attention is being paid to the farmers' income. The policy push to augment farmer's income is expected to be associated with rising welfare of the farm households as well as augment the farm investments in the economy. However, this policy moves also

invoked significant debates and discussions in the nooks and corners of policy corridors on various pertinent questions on DFI. The feasibility of achieving this goal of DFI has been debated in the literatures (Chandrasekhar & Mehrotra, 2016; NAAS, 2016; Gulati & Saini, 2016; Chand, 2017; Birtal et al., 2017; Roy & Bhattacharyya, 2020; Narayanamoorthy & Sujitha, 2021; Jadhav, 2022). Consequently, series of questions were raised some of them include- What unit should be used to measure progress, and what baseline information will be used for comparison? Despite the announcement's lack of specificity, shouldn't the contrast be made in practical terms? Do we have evidence of income growth over the past decades? If so, what does that say about the likelihood of doubling farmer incomes? Which of the following will make up a farmer's revenue: only farm income or income from all sources?

(Satyasai, 2016). One of the seven-point strategies for doubling farm income is the transition from farm to non-farm sources of income (GoI, 2020). Situation Assessment Survey of Agricultural Households (SASAH) provides information on different non-farm sources of household income which would be crucial in determining the best mix of strategies for different zones based on the socio-economic conditions. The current study provides more clarity on what may be the appropriate strategy across different socio-economic classes in different zones of India. Additionally, this study would also provide insight into the dynamics of income sources and their effect on agricultural households' income & its distribution.

### METHODOLOGY

The study is based on unit-level data on household income obtained from different rounds (70<sup>th</sup> and 77<sup>th</sup>) of the SASAH, which is one of the flagship publications of the National Sample Survey Office (NSSO), Ministry of Statistics and Program Implementation, Govt. of India. The primary intent of choosing the 70<sup>th</sup> and 77<sup>th</sup> rounds of the SASAH database was twofold. First, these are the latest available datasets on the situation of agricultural households in the country, and secondly, the comparison among these two latest datasets would provide an insight into the dynamics of income sources in the current period and which may indicate the required future policy push if the similar goal of doubling farmer's income would continue in future. Although the datasets provided by these surveys are technically not comparable due to the variations in sample size and concepts employed, the datasets and variables captured by these surveys were in line with the objectives of our study. Additionally, we could not find similar extensive datasets providing information on the farmers' income for the reference period 2012-13 to 2018-19. Therefore, it is important to exercise caution when interpreting the results and making inferences.

The study classified the land size classes into following categories: Landless (< 0.01 ha), Lower marginal (0.01-0.40 ha), Upper marginal (0.41-1.00 ha), Small (1.01-2.00 ha), Semi medium (2.01-4.00 ha), Medium (4.01-10.00 ha), Large (>10.00 ha), for the purpose of understanding the major sources of household's income across different land size classes. In addition to the different land size classes, we considered four different social groups for the study which are as follows: scheduled tribe (S.T.), scheduled caste (S.C.), other backward class (O.B.C.) and others

For the analysis of households' degree of participation in farm and non-farm activities, quantitative data were evaluated using descriptive statistics, including mean, percentage, tabulation, and ratio. The two endpoints, namely 2012-13 and 2018-19, were used to estimate trends in income throughout the course of the time. The growth in the household income was captured by using the following formula:

$$r = \left[ \left\{ \frac{(Y_{t1} - Y_{t0})}{Y_{t0}} \right\} * \frac{100}{t} \right]$$

Where, r = growth rate, Y = Variable of interest, t = time period

The real growth rate was calculated after accounting for inflation and expressed in terms of the All-India Consumer Price Index for Agricultural Labour on 2011-12 prices. The real income was calculated using the formula given as follows:

$$\text{Real Income} = \frac{\text{Nominal Income}}{\text{CPI} - \text{AL at 2011} - 12}$$

The degree of income diversification was calculated by using Simpson's Index of Diversity (SID), which was measured as,

$$\text{SID} = 1 - \sum_{i=1}^n \left[ \left( \frac{W\&S}{\text{THI}} \right)^2 + \left( \frac{\text{Crop}}{\text{THI}} \right)^2 + \left( \frac{\text{Animal}}{\text{THI}} \right)^2 + \left( \frac{\text{NFB}}{\text{THI}} \right)^2 \right]$$

Where, SID (Simpson index of diversity), W&S (wages & salaries), Crop (crop income), Animal (animal income), NFB (non-farm business income) and THI (total household income). The value of SID ranges from zero (0) to one (1). The index's value of zero indicates revenue from a single source, while its value of one indicates complete diversification.

### RESULTS AND DISCUSSION

#### Land size class wise trend in agricultural households' income at All India level

Findings show that from 2012-13 to 2018-19, at All India levels, the total average annual net nominal income of an agricultural household in 2012-13 was Rs. 77500/-, whereas, in 2018-19, it was Rs. 129065/- per household per annum. While the total average annual net real income of an agricultural household was Rs. 70465/- in 2012-13, it was Rs. 87333 in 2018-19. There is an

**Table 1.** Land size class wise net annual nominal income from different sources & diversification index

Land Size Class(ha)	Total annual nominal income (in 000' Rs. per hh)		Simpson index of income diversification		Average annual percentage change in total income	
	2012-13	2018-19	2012-13	2018-19	Nominal	Real
<0.01	54.73	128.30	0.34	0.29	19.20	10.53
0.01-0.40	49.82	92.07	0.31	0.35	12.10	5.27
0.40-1.00	62.96	108.27	0.28	0.37	10.30	3.91
1.01-2.00	88.18	147.75	0.29	0.34	9.70	3.45
2.01-4.00	128.76	206.28	0.25	0.33	8.60	2.67
4.01-10.00	235.64	339.70	0.25	0.30	6.30	0.97
>10.00	496.66	743.60	0.25	0.24	7.10	1.56
All India	77.50	129.07	0.32	0.35	9.61	3.42

Source: Calculated by Authors' from the given data of 70<sup>th</sup> and 77<sup>th</sup> rounds of the SASAH.

\* hh= household

increment of Rs. 51565/- in nominal income and Rs. 16868/- in real income per household during the period. This study recorded positive annual growth in the share of real income from wages & salaries (10.37%) as well as income from animal sources (6.14%), while in the case of real income from the crop (-1.25) and non-farm businesses (-0.94) recorded negative annual growth during the same period. The findings of this study suggest that, as we move from a smaller land size to a large land size class, the growth rate significantly drops except in case of medium and large class households'. Overall income diversification (Simpson index of diversity) at the All-India level increased it was 0.32 in 2012-13 & becomes 0.35 in 2018-19.

Diversity in income sources was highest for the landless (<0.01 ha) class of agricultural households in 2012-13, i.e. (SID=0.34), and lowest for medium & large class of agricultural households,' i.e. (SID=0.25). In 2018-19 highest income diversity was seen in the upper marginal class of agricultural households,' i.e. (SID= 0.37), and the lowest diversity in income sources is seen in the large class of agricultural households i.e. (SID= 0.24). At All India level the composition of households' income changed over the period (2012-13 to 2018-19), the share of income from wages & salaries increased significantly from 2012-13 to 2018-19, i.e., by 12 per cent, and to the same extent share of the crop income declined. Whereas the share of animal income in total income marginally increased, the share of non-farm business income in total income marginally decreased. The share of income from crop production increased in both years as a land holding increased, and as the land holding decreases, the income sources became more diversified. Crop production generated about 48 per cent of the agricultural household's total income in the agricultural year 2012-13, followed by income from wages & salaries (32%), income from farming of animals (14%), and income from non-farm businesses (8%). However, during the agricultural year 2018-19, the primary source of income for agricultural households' is income from wages & salaries, which contributes 44 per cent of their total income, followed by income from crop production (35%), income from farming of animals (15%), and non-farm businesses (6%) (Figure

1). It may be possible that income from wages & salaries and animal farming may play a significant role in driving income growth during this seven-year period from 2012-2013 to 2018-19. The results of the studies conducted by (Priscilla et al., 2021 & Saha et al., 2022) also depicts that crop diversification has a positive significant impact on the income among the households.

### State-level trends in agricultural household income

In 2012-13 as well as 2018-19, the highest average annual net nominal income was registered for Punjab, i.e., Rs. 218689/- & Rs. 340334/-, respectively, and the lowest average annual net nominal income was registered for Bihar in 2012-13, i.e., Rs. 43237/- and in 2018-19 it's in Jharkhand, i.e., Rs. 62959/-. From 1.73 per cent in Jharkhand to 33.43 per cent in Uttarakhand, the growth rates in the average annual net nominal income of an agricultural household differed across the country's major states. For major states, the time it takes for total average annual net nominal income to double is two years for Uttarakhand, four years for Bihar, six years for Chhattisgarh, Rajasthan, Tamil Nadu, Andhra Pradesh, and Kerala, seven years for Uttar Pradesh & Haryana, eight years for Maharashtra, Gujarat, & Assam, nine years for Karnataka & Punjab, 10 years for Telangana, 15 years for Madhya Pradesh, and 38 & 42 years for Odisha & Jharkhand respectively. However, at All India level the doubling time for total average annual net real income is 21 years and it varies from 3 to 43 years state to state. In fact, a single blanket policy cannot work for the whole state or region as there is wide intra-state variation which requires location specific policy to harness the untapped potential to achieve the target of augmenting farmers' income (Agrawal et al., 2021). In both the agricultural year, i.e., in 2012-13 & 2018-19, in Rajasthan the agricultural households' are having highly diversified sources of income (SID= 0.40 & 0.43) respectively and Andhra Pradesh is having least diversified sources of income i.e. (SID= 0.20 & 0.25) respectively (Table 2). Overall average annual percentage change in net real income from wages & salaries is 10.37 per cent, although some states, such as Uttarakhand, Assam, Uttar Pradesh, and Haryana, saw average annual percentage changes

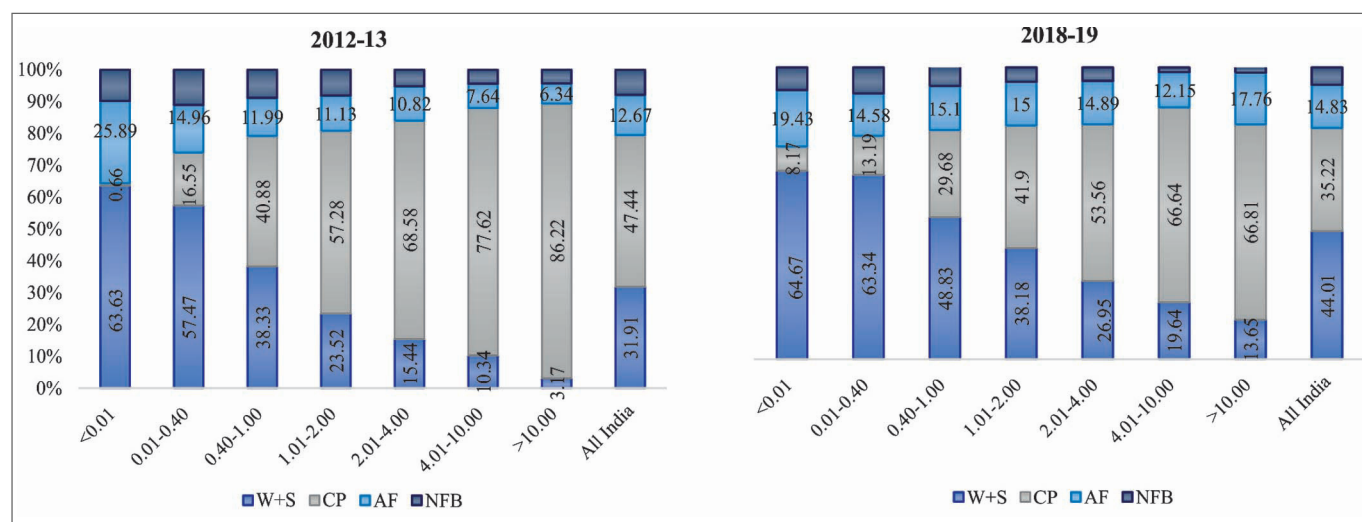


Figure 1. Land size class wise composition of agricultural households' income

Note: W+S: Wages and Salaries; CP: Crop production; AF: Animal farming; NFB: Non-farm business; NI: Net income.

**Table 2.** State wise net annual nominal income from different sources, diversification index & time taken to double the income

State	Total annual nominal income (in 000' Rs. per hh)		Simpson index of income diversification		Average annual percentage change in total income		Doubling time for income (Year's)	
	2012-13	2018-19	2012-13	2018-19	Nominal	Real	Nominal	Real
	Punjab	218.69	340.33	0.32	0.36	7.95	2.19	9.0
Uttarakhand	57.64	192.54	0.33	0.41	33.43	21.07	2.2	3.4
Haryana	174.35	298.26	0.33	0.40	10.15	3.82	7.1	18.8
Rajasthan	85.65	161.15	0.40	0.43	12.59	5.63	5.7	12.8
Uttar Pradesh	59.40	102.24	0.33	0.35	10.30	3.93	7.0	18.3
Bihar	43.24	93.00	0.26	0.31	16.44	8.48	4.4	8.5
Assam	81.08	133.50	0.21	0.33	9.24	3.14	7.8	23.0
West Bengal	47.98	84.69	0.35	0.33	10.93	4.4	6.6	16.4
Jharkhand	56.16	62.96	0.34	0.40	1.73	-2.42	41.6	-
Odisha	59.51	67.42	0.37	0.39	1.90	-2.29	37.9	-
Chhattisgarh	63.25	119.82	0.30	0.38	12.78	5.77	5.6	12.5
Madhya Pradesh	74.44	100.27	0.34	0.36	4.96	-0.03	14.5	-
Gujarat	95.36	153.09	0.40	0.34	8.65	2.71	8.3	26.6
Maharashtra	90.87	147.82	0.32	0.32	8.95	2.93	8.0	24.6
Andhra Pradesh	72.66	133.40	0.20	0.25	11.94	5.15	6.0	14.0
Karnataka	107.53	164.66	0.30	0.27	7.59	1.92	9.5	37.5
Kerala	143.11	258.94	0.25	0.34	11.56	4.87	6.2	14.8
Tamil Nadu	82.72	150.13	0.24	0.35	11.71	4.98	6.1	14.5
Telangana	78.13	117.69	0.32	0.35	7.23	1.66	10.0	43.4
All India	77.50	129.07	0.32	0.35	9.61	3.42	7.5	21.0

Source: Calculated by Authors' from the given data of 70<sup>th</sup> and 77<sup>th</sup> rounds of the SASAH.

\* hh= household

in real income from wages & salaries of over 15 per cent. The wages & salaries component improved positively in all states as a share of total average annual net real income.

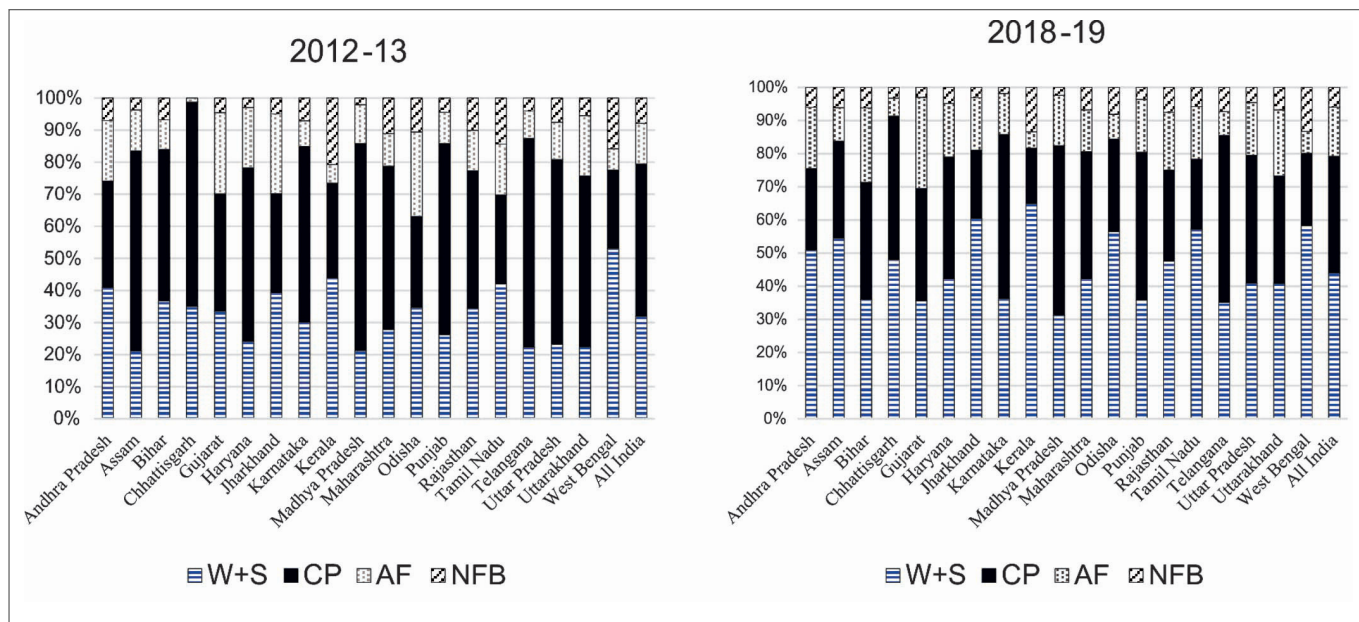
For All India the average annual percentage change in net real income from crop production is -1.25, and only Uttarakhand, Bihar, West Bengal, Gujarat, Andhra Pradesh, Karnataka, and Tamil Nadu seeing positive growth in real income from crop production. All states, with the exception of Assam, Jharkhand, Odisha, and Telangana, saw a rise in real income from animal farming. The average annual percentage change in net real income from non-farm businesses at All India levels, is -0.94 per cent, but states like Uttarakhand, Assam, Chhattisgarh, and Telangana had double-digit growth in this indicator. Jharkhand had the lowest average annual percentage change in total average annual net real income i.e. (-2.42%), while Uttarakhand had the highest (21.07%). The three states namely Jharkhand, Odisha & Madhya Pradesh recorded negative change in total average annual net real income by -2.42, -2.29 & -0.03 per cent respectively during the period of 2012-13 to 2018-19.

The highest decline in the dependency of crop income for the total income earned by an agricultural household is seen in Assam, i.e., the decline of 33 per cent share of crop income in total average annual net nominal income of agricultural households over the period of 2012-13 to 2018-19 and at the same time the contribution of income from wages & salaries in total income is increased by 34 per cent in Assam (Figure 2). This result clearly indicates that in the state of Assam drastically, as well as in all the states households' are shifting, from crop-based enterprises towards wages & salaries, which mean the labour forces/farmers, are turning into

wages & salaries earners and shifting their dependency for livelihood from the primary to the tertiary source of income. If we see the results of two states, i.e., Punjab and Haryana, which we considered agriculturally strong states, the contribution of crop income in total average annual net nominal income strongly declined over the period in these states, i.e., by 15 & 17 per cent respectively and at the same time the contribution of income from wages & salaries in total average annual net nominal income in both the states is strongly increased, i.e., by 10 per cent in Punjab & 18 per cent in Haryana. This result also follows the recommendation of the Lewis model (Lewis, 1972), which advocates the shifting of surplus labour from farms to other sectors. However, we need to determine whether the shifting labour force was in surplus or not. At All India levels, there is substantial growth in wages & salaries as well as the animal source of income component in the total income of agricultural households.

#### **Social group wise trend in farm households' income at All India level**

In both the agricultural years, social class-wise total average annual net nominal income is highest for 'Other's' category households' i.e., Rs. 97043/- & Rs. 164813/- and lowest for S.C. households' i.e., Rs. 54786/- & Rs. 102397/- for the year 2012-13 & 2018-19, respectively. The average annual net nominal income for S.T. households' was Rs. 70728/- & Rs.112634/- and for O.B.C. households' was Rs. 76979/ & Rs. 126220/ for the year 2012-13 & 2018-19, respectively. The average annual rise in total average annual net nominal income across India was 9.61 per cent: according to social categories, the highest growth rate in nominal



**Figure 2.** State wise composition of agricultural households' income  
 Note: W+S: Wages and Salaries; CP: Crop production; AF: Animal farming; NFB: Non-farm business; NI: Net income.

income over the period is for S.C. households' (12.41%) followed by Others category households' (9.98%), OBC households' (9.14%), and S.T. households' (8.46%). In both the agricultural year, i.e., 2012-13 & 2018-19, the highest diversification in income sources is seen in the case of S.T. households' and the lowest diversification in income sources in 2012-13 was for O.B.C. households' and in 2018-19, it was for Other's category of households'.

In real terms, the social group wise highest total average annual net real income in both the agricultural years is for 'Other's' category of households' i.e., Rs. 88234/- & Rs. 111026/-, and lowest for 'S.C.' households' i.e., Rs. 49813/- & Rs. 68980/- per households' per annum respectively in 2012-13 & 2018-19. Whereas, for O.B.C. households' it was Rs. 69991/- & Rs. 85028/- and for S.T. households' it was Rs. 64308/- & Rs. 75876/- per annum respectively in 2012-13 & 2018-19. Diversity in income sources was highest for the S.C. category of agricultural households' in 2012-13, i.e. (SID=0.33), and lowest Other's category of agricultural households', i.e. (SID=0.31). In 2018-19 highest income diversity was seen in S.T. category of agricultural households', i.e. (SID= 0.39), and lowest Other's category of agricultural

households,' i.e. (SID=0.33) (Table 3). The composition of income for different social group over the period has been changed, the share of income from wages & salaries increased significantly in all the social group categories of households', while at the same time the share of crop income in all the social group categories of households' declined, from 2012–13 to 2018–19. Whereas the share of animal income in total income marginally increased for S.C., O.B.C., & Others' category of households' and for S.T. households' it's declined. The share of non-farm business income in total income is marginally decreased for the O.B.C. and Others' category of households, while it remains the same for S.T. & S.C. households (Figure 3).

**CONCLUSION**

At present pace of growth in average annual net income of agricultural households' at the All India level, it takes 7.5 years to double the nominal income and 21 years to double the real income. The results indicate that households are shifting from crop-based enterprises towards wages & salaries at all India levels. The findings of this study leads to the conclusion that strategies for augmenting agricultural households' income should be region and

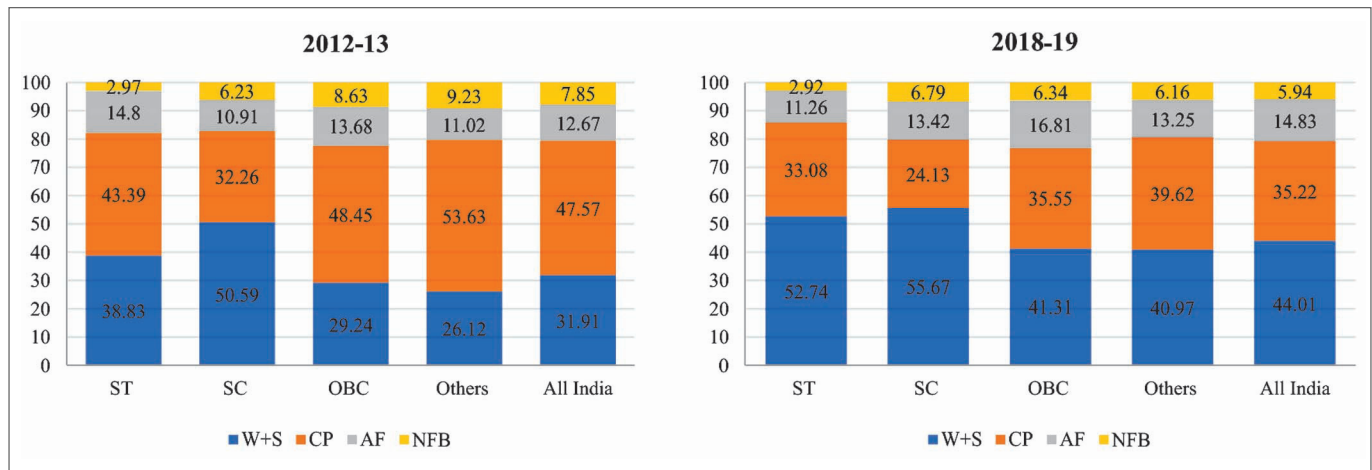
**Table 3.** Social group wise net annual nominal income from different sources & diversification index

Social Group	Total annual nominal income (in 000' Rs. per hh)		Simpson index of income diversification		Average annual percentage change in total income	
	2012-13	2018-19	2012-13	2018-19	Nominal	Real
ST	70.73	112.63	0.32	0.39	8.46	2.57
SC	54.79	102.40	0.33	0.36	12.41	5.50
OBC	76.98	126.22	0.32	0.34	9.14	3.07
Others	97.04	164.81	0.31	0.33	9.98	3.69
All India	77.50	129.07	0.32	0.35	9.61	3.42

Source: Calculated by Authors' from the given data of 70<sup>th</sup> and 77<sup>th</sup> rounds of the SASAH.

\* hh= household





**Figure 3.** Social group wise composition of agricultural households' income

Note: W+S: Wages and Salaries; CP: Crop production; AF: Animal farming; NFB: Non-farm business; NI: Net income.

category specific since certain types of income mix are significant in some regions for certain categories of agricultural households' and in other regions for other specific categories. The emphasis of policy makers should be on creating opportunities for agricultural households' to participate in the region and category-specific enterprises, so that the members of agricultural households' can be absorbed in those enterprises after receiving the necessary training to acquire the required specific skills.

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