Relationship between Agriculture Price Mechanism and Poverty in Different Sizes of Agriculture Land Holdings

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Abstract— *An increase in agricultural labour and a decline in cultivators' percentage, along with 21.9% of the Indian population or 269.78 million people living under the poverty line, requires restructuring the economic policies and massive agricultural reforms. The paper explores the Indian government's agriculture price mechanism tool, Minimum Support Price (MSP), which ensures that at least farmers get the government-announced minimum price for their agricultural produce. The research probes the role of MSP in addressing the prevailing agricultural poverty and how different farmers with different land holdings benefit from it.*

Keywords— *Agriculture Reforms, Crops, Farmers, Poverty.*

I. INTRODUCTION

More than 774.51 million (Agriculture Statistics at a Glance 2018, 2019) people, or 9.3% (Poverty and Equity Data portal, 2021) of the total world population, are living in extreme poverty conditions (less than $1.9). In India, the Tendulkar committee (Poverty Estimates for 2011-12, 2013) reported that 21.9% of the population lives under the poverty line, with more than 269.78 million people in extreme poverty. International agencies are vocal in support of eradicating poverty and hunger. Despite their efforts, poverty remains a dominating issue, and it needs policies and provisions which align with global needs to control its spread.

In 1951, India's population was 361.1 million, of which the rural population was 82.7%; under it, 69.9 million were cultivators, and 27.3 million were agricultural laborers. The last census data shows that the Indian rural population has increased to 833.7 million, 118.8 million are cultivators (45.1%), and 144.3 million are agricultural laborers (54.9%). The figure is alarming; first, it states how the rural population, which was 83% in 1951, declined to 68.9% in 2011. Second, the decline in cultivators percentage from 71.9% to 45.1% and increase of agricultural labor from 28.1% to 54.9%, second the population is more than triple, while the cultivators' population is less than double; however, the agriculture labor population is increased by more than five times.

A considerable portion of the population engaged in agriculture contributed 10% of the Gross Value Added (GVA) in 2017-18, compared to 29.3 % from industries and 53.5% from the service sector (Pocket Book of Agricultural Statistics, 2017). Low-value addition is the main reason for agricultural poverty, as 25.7% of rural areas live below the poverty line (Agriculture Statistics at a Glance 2018, 2019).

The Indian government addresses agricultural poverty by establishing the Minimum Support Price (MSP), a motivational factor for farmers. They are assured of a minimum price for their crops by the government, but farmers are free to sell above the MSP rate in the market. The paper explores the role of MSP in eradicating poverty by measuring the probable income of different agricultural landholders from the MSP rate and if they get a market rate above 20% and 40% of MSP.

II. RESEARCH OBJECTIVE

The research probes the role of MSP in addressing the prevailing agricultural poverty (Ahmed, Poverty, Development Project and Methodology: Need to Change the Approach, 2022) and how different farmers with different land holdings benefit from it (Ahmed, Development of Agriculture Model to Measure Survival Income for Different Categories of Agriculture Land-Holding Farmers, 2021). It explores the impact of the market rate above MSP (20% & 40%) on farmers' income. It gathers information on how much income is sufficient for farmers with different land holdings to keep them in the safe income category.

III. METHODOLOGY

Model Explanation: The Model (Ahmed, Agriculture Model and Measurement of Survival Income in Wheat Cultivating Farmers under Different Land-Holding Categories, 2021) is based on the data provided by the Directorate of Economics & Statistics of India. The cost of production data (2016-17) comprises the agricultural production cost for different crops. Table 9 provides the major Kharif and Rabi crops. The Kharif crops cover 39.6% of the cropped area (Pocket Book of Agricultural Statistics, 2017). The cost of production of all eight Kharif crops was calculated in Table 1, with the inflation impact adjusted by 5.12% to arrive at 2021 per hectare price. Above 20% and 40% of MSP, income is calculated by examining the yield- in kilograms per hectare for each crop (Table 2).

The total cost of production from Table 1 is carried forward in Table 2 (a & b). Total income (a7), which includes gain from the sale of produce (a5) and by-product value (a6), is calculated. Afterward, farmers' profit and loss are calculated (a8), where negative value represents loss from agricultural production (at MSP, above 20% and 40%) while positive

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value represents a profitable situation from per hectare production.

The b-part in Table 2 represents savings from inputs from the farmer's side, including family labor. It also includes savings where farmers avoid spending money on what they own that they otherwise have to pay for.

Survival income (c1) comprises the total income (a7) and total survival savings (b8). The cost of production (a1) is deducted from the survival income (c1), resulting in the actual disposable income (d1) per hectare. The actual disposable income keeps an agricultural farmer from carrying on work, even if a farmer accrues a loss (a8) from the crop.

The Model uses the deductive cost-benefit approach to analyze the role of MSP on the crops. International poverty estimates are taken to observe the three categories of income per month (table 3) under extreme poverty (less than $1.9 per day or Rs. 4195 per month), moderate poverty (less than $3.1 per day or Rs. 6845 per month) and vulnerable (less than $ 5.5 per day or Rs. 12144 per month) and safe category above Rs 12144 per month or $ 5.5 per day.

Besides considering the MSP rate and the two market-rate above MSP, the Model also considers different yields that prevail in the various regions by taking the highest and lowest yield and calculating the two levels of income based on them (Table 4). Tables 6, 7, and 8 are the income calculation based on MSP, above 20% and 40% of MSP, and formulating the agricultural farmer's position based on it under the four zones (Extreme Poverty, Moderate Poverty, Vulnerable and Safe).

IV. THE COMPONENTS OF THE MODEL

Minimum Support Price (MSP) and its purpose: It is declared by the Government of India based on the Commission for Agricultural Cost and Prices (CACP) recommendations. The purpose of MSP is to save farmers from market fluctuations and assure them of the minimum price guaranteed by the government. The MSP acts as a motivational factor and promotes farmers to invest and expect income beyond a government-supported minimum price (Evaluation Study on Efficacy of Minimum Support Prices (MSP) on Farmers, 2016).

Fair and Remunerative Price (FRP) was announced by the Department of Food and Public Distribution (Minimum-Support-Price, 2021). The concept of MSP was first introduced in 1966-67, during the green revolution in India, and the first crop was wheat to get MSP. At present government covers 24 crops under the MSP and announced its rates before the cultivation season. Out of 24, 14 crops belong to the Kharif season. Seven crops are from the Rabi season, and 4 are other crops, including sugarcane.

Calculation of MSP: The general formula for estimating MSP is

$$1.5 \text{ times A2 + FL costs}$$

A2 = All the expenses incurred during the crop cultivation + rent paid for leased land

FL = it includes the family members' unpaid labor and the paid-out cost (FL) (Cost of Cultivation/Production & Related Data , 2017-18).

MSP would be kept at 1.5 times the cost of production (Economic Survey (Vol II) - Agriculture & Food Management, 2021). While it has been observed that the cost of cultivation differs in different states, the MSP is announced by the central agency.

Agricultural Landholding pattern: Indian agriculture farmers are categorized based on their land holdings, and government publications records on different categories are studied for the analysis.

Marginal farmers (less than 1 hectare): Most under the category live below the poverty line as their all-India average land-holding is 0.38 ha only. They have minimum resources for agricultural production, depend on good monsoon for their harvest, and work as agricultural labor or manual labor for additional income necessary for survival. The research considers their agricultural income from small land holdings but refrains from suggesting that their harvest is sufficient for their living expenses. Information in Table 5 (Agriculture Census, 2019), representing 68.52% of farmers, belongs to this category with operational holdings of 9,98,58,000 covering 3,79,60,000 hectares of land.

Small Farmers (1.0 to 2.0 hectares): Small farmers also work hard to meet their ends. They depend on good monsoons for a better harvest and work extra on other farms for additional income. The research considers their case with potential where improved living standards are possible through proper management of MSP linked with land holding and crop selection based on cost-benefit analysis. Small farmers comprise 17.69% of the total, with operational holdings of 2,57,77,000 covering 36435,000 hectares of agricultural land.

Semi-Medium Farmers (2.0 to 4.0 hectares): Semi-medium farmers with average holdings size of 2.7 ha are hanging in the middle. The category comprises 9.45% of the total, with 13776000 land holdings having an area of 37168000 hectares of agricultural land. If a family size is large agricultural land-holdings are not enough for survival, and members have to contribute from other sources. Also, irrigation resources and other necessary inputs are equally important in their earnings.

Medium (4.0 to 10.0 hectares): 3.76% of total farmers belong to this category, with 54,85,000 land holdings having 31367000 hectares. They are stable farmers with sufficient land holdings to earn a decent living. They have a regular workforce to cultivate their land and benefit from government schemes. Even in adverse conditions where yield decreases, it can benefit from MSP due to economies of scale.

Large (10.0 hectares and above): Only 0.57% of the total belongs to the large farmer category, with 831000 land holdings covering 14212000 hectares. It is the safest category. They have huge farmland and resources to cultivate correctly. They employ agricultural labor and take advantage of their position to get the best from the market conditions. They can wait for a better price for their harvest and work for a reasonable time to make the best deal.

Poverty prevailing in the agricultural farmers can be reasoned out with the observation that the area under the category of semi-medium, medium and large farmers shows a decline over the years, while under the marginal and small

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farmers, it is increasing at the same time. The same pattern is true in the case of the number of land-holdings where marginal and small farmers' land-holdings are rising, despite a decrease in their average farm size. On average, land-holdings size decreased from 1.33 ha in 2001 to 1.15 ha in 2011 (Pocket Book of Agricultural Statistics, 2017). It fell from 0.40 ha in 2001 to 0.39 ha in 2011 for marginal farmers, and only large farm holders show an increase in size despite the reduction in their total numbers.

Major crops in India

Major crops in India are divided into Kharif and Rabi, for which the Central Government announces MSP (Minimum-Support-Price, 2021).

Kharif Season: The crops grown in the rainy season are known as the Kharif season crops. The season starts in June and ends in October. Usually, it begins with early rain, and farmers prepare the field accordingly. Major Kharif crops include Rice, Jowar, Bajra, Maize, Arhar-Tur, Ragi, Sesamum, Moong, Urad, Groundnut, Sunflower seed, Soyabean, Nigerseed, and cotton. Kharif's major crops cover 39.6% of the cultivable area (Table 9).

Rabi Season: Also known as winter season crops, it starts in November and ends in April. Rabi's major crops cover 20.5 % of the cultivable area (Table 9). Major rabi crops include Wheat, Barley, Gram, Masur (Lentil), Rapeseed & Mustard, Safflower, and Toria.

The research focuses only on major Kharif crops, eight out of fourteen, leaving oil seeds and cotton to limit calculation size. Other Calendar year crops for which government announces MSP include Coconut, Copra, and Jute. Farmers with irrigation facilities can take the third crop in a year, which is beyond the scope of the study.

V. RESULTS

Impact of High and Low Yields on different crops: Agricultural output is affected by the availability of high-yield variety and irrigation facilities, soil quality, and natural conditions. Various crops are affected differently in different regions. Table 4 provides a comparative analysis using high and low yield variety for different crops and per month income for poverty analysis and describes the three conditions- at MSP, above 20%, and 40% of MSP.

The highest per-hectare income at MSP price comes from growing high yielding crop of Groundnut with Rs. 19,902.41 per month, followed by Maize (Rs. 15,384) (Ahmed, Poverty analysis in Maize cultivating farmers under different land-holding categories, 2021) and Ragi (Rs. 11,119). If low variety is used, Ragi gives the highest return with Rs. 7458, Bajra (Rs. 5305) and Maize (Rs. 4600). The variation in income in different crops' high and low yields is because of crop variety available to farmers, which they utilize as per their resources.

Marginal Farmers (Table 6): Impact of high and low yield over income estimation

For marginal farmers with less than 1 hectare of land with an average size of 0.38 ha, Kharif's income is meager at the MSP rate. They remain in extreme poverty if they get low yields for their Kharif crop cultivation. If they can get a higher crop yield, they are in a better position; if they grow Groundnut and Maize, their income falls in the vulnerable category (less than $5.5). Bajra and Ragi crops provide income that keeps them in moderate poverty, and all other crops are not giving sufficient benefits. Even with the high-yielding crop, they remain in extreme poverty, not to mention the case of low-yield crop income, where extreme poverty is the only result.

The income above 20% of MSP (Table 7 a,b,c): If marginal farmers are able to fetch a market rate above 20% of MSP, even then, there is no change in their position at a higher yield; they stay in the vulnerable category with Groundnut and Maize crops while Bajra and Ragi their income is in the moderate poverty level. In the case of low yield variety, income above 20% of MSP is not helpful to keep them above extreme poverty.

Income above 40% of MSP (Table 8a,b,c): Things are a little better if marginal farmers get a market rate for crops above 40% of the government-declared MSP. Groundnut, Maize, and Ragi give them enough income from high-yield variety to promote them in the vulnerable category, while Bajra and Rice help them reach moderate poverty. In the case of low yield, only Maize and Ragi show enough margin to place them in the moderate category, while other crops don't have enough potential to keep them out of extreme poverty.

Result: For marginal farmers, the hope for safe income is far above 40% of the MSP rate as marginal farm size productivity is low and farm size is not economically viable for agriculture profitability for the Kharif crops.

Small Farmers (Table 6): Small farmers belong to the category with less than 2 hectares but more than 1 hectare of land. Their conditions are a little better than marginal farmers as the size of their average land-holdings is 1.41 hectares.

Income at MSP rate: In the case of high yield variety, they are in the safe category under Maize, Bajra, Groundnut, and Ragi, and vulnerable position if they grow high yielding variety of Rice but remain extremely poor even with a high yielding crop like Jowar, Arhar-Tur, and Sesamum.

Low yield means farmers are vulnerable in Bajra and Ragi crops facing moderate poverty in Maize and Rice crops. And produce like Jowar, Groundnut, Arhar-Tur, and Seasmum are not enough, and they remain in extreme poverty if they sell their crops at the MSP rate.

Income above 20% of MSP rate: The small farmer's conditions are a little better as high yielding crops, and a market rate above 20% of MSP means crops like Rice, Maize, Bajra Groundnut, and Ragi keep them in the safe category, while Jowar and Seasmum provide income that keep them in moderate poverty. Arhar-Tur is the only crop in the extreme poverty category for small farmers, even at a high yield.

Only Ragi, with a low yield, is the safe bet for small landholders. If they face a problem of low-yield variety, then growing crops like Rice, Jowar, Arhar-Tur, and Sesamum will be a wrong decision as it will keep them in extreme poverty. In contrast, the Groundnut crop with low yield means income under moderate poverty, and Maize and Bajra belong to vulnerable income groups.

Income above 40% of MSP rate: Arhar-Tur is the only crop in which if the farmers get a market rate above 40% of MSP still, they are in moderate poverty, whereas in Jowar and Seasmum, they are in a vulnerable position, and all other crops they are in the safe zone if they can get high yield crop.

If they get a low yield but a market rate above 40% of MSP, Arahar-Tur and Seasmum will keep them in extreme poverty. In contrast, little relief in Rice and Jowar case as it keeps them at a moderate poverty level. Groundnut will raise the level to vulnerable category and others like Maize, Bajra and Ragi are safe bet even with low yielding variety.

Semi-medium Farmers: Semi-medium farmers' farmland is between 2 ha and 4 ha, with an average size of 2.7 hectares. They are in the middle of the land-holding classification.

Income at MSP rate: With high yield in Kharif crops, they are in the safe category in most of the produce (Rice, Maize, Bajra, Groundnut, and Ragi), while they will be in moderate poverty if they grow Seasmum and in extreme poverty in case of Arhar-Tur and Jawar.

If the yield is low, crops like Rice, Jowar, Arhar-Tur, and Seasmum are of no help, and their income is under extreme poverty. At the same time, Maize, Bajra, and Ragi are the safe bet, while cropping groundnuts may lead them to a vulnerable category.

Income above 20% of MSP rate: If the semi-medium farmers can extract a market rate above 20% of the MSP for their Kharif crops, most of the crops give them enough income to be in the safe category (Rice, Maize, Bajra, Groundnut, and Ragi) if they can get high yield for their crops. Crops like Jowar and Seasmum may put them in the vulnerable category. At the same time, Arhar-Tur is the only crop that puts them in the moderate poverty category, even with a high yield and market rate above 20% of MSP.

If they cannot get high yield and are stuck with low yield, then Maize, Bajra, Groundnut, and Ragi are safe crops. At the same time, Rice will put them in the vulnerable category, and according to the input-output Model, Jowar, Arhar-Tur, and Seasmum are not helpful and may face extreme poverty.

Income above 40% of MSP rate: With high yield variety for their Kharif crops and market-rate above 40% of MSP except for Arhar-Tur (vulnerable category), all other Kharif crops will provide them with enough income to put them in the safe category. If they face the problem of low yield, crops like Rice, Maize, Bajra, Groundnut, and Ragi give them enough benefits with above 40% of the MSP market rate, and it puts them in a safe zone, but growing crops Jowar and Seasmum put them in the vulnerable category. At the same time, Arhar-Tur should be avoided as suggested by the input-output Model; it puts them in the moderate poverty category.

Medium Farmers: Medium farmers hold more than 4 hectares but less than 10 hectares of agricultural land. The average size of land holdings is 5.72 hectares.

Income at MSP rate: Most of the Kharif crops at the MSP rate give them enough earnings and put them in the safe category (Rice, Maize, Bajra, Groundnut, and Ragi) if they grow high yield variety, while income from Seasmum puts them in vulnerable category, growing Jowar put them in moderate poverty and only Arhar-Tur put them in the

condition of extreme poverty even with their medium land size.

If they achieve low yield at the MSP rate for their crops, Maize, Bajra, Groundnut, and Ragi are the safe income option. In contrast, Rice crops put them in the moderate poverty group, and crops like Jowar, Arhar-Tur, and Sesamum are not beneficial as they lead them to extreme poverty with current economic prices.

Income above 20% of the MSP: If medium landholder farmers get a market rate above 20% of the MSP, they will be in the safe category whichever Kharif crop they grow if they achieve a higher yield from the cultivation. Economies of scale are in their favor, and their land-holding size is ideal; they only need market-supported rates for their cultivation. If they get a low yield for their agricultural output, then Rice, Maize, Bajra, Groundnut, and Ragi are the safest options, while Jowar and Seasmum put them in the vulnerable category. Arhar-Tur is the only crop that is non-viable, as it will lead them to extreme poverty.

Income above 40% of the MSP rate: With high crop yield and a market rate above 40% of the MSP, medium-scale farmers will get enough income, putting them in the safe category from all major analyzed Kharif crops. Even if they fail to get a high yield, except in Arhar-Tur, which leads them to vulnerability, all other crops give them a safe income option.

Large Farmers: The wealthy farmers have more than 10 hectares of agricultural land, with an average farm size of 17.1 hectares.

Income at MSP rate: For large category farmers, all Kharif crops except Arhar-Tur (vulnerable category) are the safe option when they get a high yield from their crops, in case they get low yield even then apart from the three crops Jowar, Arhar-Tur and Seasmum all other crops will give them enough income at MSP rate that they will be in the safe income category. All three crops show negative returns from the inputs compared to output at the MSP rate.

Income above 20% of MSP rate: A market rate above 20% of the MSP certainly helps them as all Kharif crops projected income puts them in the safe category under high yield variety crops. Even with low yield variety except for Arhar-Tur, which put them in moderate poverty, all other crops are safe.

Income above 40% of MSP: A market rate above 40% of MSP is ideal as it will reduce the importance of yield and put them in the safe income category of whichever major Kharif crop they grow. It only makes a difference in income within the safe category.

Average Farmers: The average agricultural land-holding in India is 1.08 hectares, meaning more land than the average marginal farmer but less than the average small farmer's own. It combines the features of the two most deprived categories, marginal and small; hence crop patterns are similar.

Income at MSP rate: Only two crops (Groundnut and Maize) at a higher yield give them sufficient income to be in the safe category. Rice, Bajra, and Ragi put them in the vulnerable income group. At the same time, Jowar, Arhar-Tur, and Seasmum are not economically viable as the returns are

not good and will put them in the extreme poverty income category. In case farmers face low yield Rice, Jowar, Arhar-Tur, and Seasmum are not economically viable crops as earnings are insufficient and put them in extreme poverty with their average land holdings. At the same time, Groundnut is a little better where earnings are under moderate poverty. Maize, Bajra, and Ragi are the best bet option when dealing with low yield variety as earnings will put them in the vulnerable group.

Income above 20% of MSP: If an average landholder gets a market rate above 20% of MSP, then with the help of high yield variety, Maize, Bajra, Groundnut, and Ragi are safe income options, whereas Rice puts them in the vulnerable category and remaining Jowar, Arhar-Tur and Seasmum put them in monetary difficulty as earnings are not enough for them to lift from extreme poverty category. Rice, Jowar, Arhar-Tur, and Sesamum put their earnings under the extreme poverty category if the yield is low. In contrast, groundnuts put them in moderate poverty, and Maize, Bajra, and Ragi are the best alternatives as their income is under the vulnerable category.

Income above 40% of MSP: If average landholders get a market rate above 40% of MSP, with the help of high yield crops like Rice, Maize, Bajra, Groundnut, and Ragi are the income generator and help them in earning safe category income, whereas Jowar, Arhar-Tur, and Sesamum earnings put them in moderate poverty level. In low yield, only Maize and Ragi are the safe option, whereas Bajra and Groundnut earnings put them in the vulnerable category; Jowar, Arhar-Tur, and Seasmum are non-viable options with the possibility of gains under the extreme poverty category.

VI. CONCLUSION

Farmers are getting an MSP advantage based on the size of the land holdings. Large farm size means the farmer can get economies of scale, but the opportunity is not applied to marginal to small farmers in the same way. With the rise in population, marginal and small land holdings are increasing, which does not help eradicate poverty. Results show that marginal to small farmers suffer the most due to their land-holding size. Even the MSP rate is not beneficial in most cases.

The purpose of MSP is to assure farmers of the minimum price for different crops by the government, and it acts as the motivational factor where farmers know what minimum amount they will get for their crop output. The objective face many practical hurdles, as despite government announcement, farmers are not getting the minimum price due to market anomalies. Under these conditions, the farmers with minimum financial resources are the worst affected as they do not get their dues, and MSP rates are insufficient to get them into the safe category.

The paper acknowledges that a farmer's decision to select a particular crop depends on his environmental knowledge, based on which he chooses a specific crop that is suitable for his size of land-holding, soil type, irrigation requirement, marketability, and financial needs. Prevailing poverty in the agriculture sector results from an unstructured and underdeveloped agricultural marketing system and a lack of education and resource information.

What the paper suggests is that it cannot control the above-listed factors. Still, MSP can be better adjusted for different land-holdings sizes and geographical regions. The sole objective is to help the marginalized and poor farmers with the right price, which gives them enough earnings to be in the safe income category.

The objective to provide MSP for the farmers dwelling in poverty is much-needed relief. Still, the main reason for prevailing poverty is inequality between the different sizes of landholders, ignoring the different economic costs and gains for different land-holding sizes.

The yield is not a constant factor, as assumed by the paper. Still, it depends on inputs used by the farmers like fertilizer, technology, availability of irrigation facility, crop intensity, and farmer's choice for a particular crop. Studies show that land productivity is inversely related to the size of agricultural land-holding. (Income, Expenditure and Productive Assets of Farmers Households, 2005) The subject is intensely debated, and it is reported that small landholders like to maximize their gains and increase productivity through extensive use of available resources (Ramesh Chand, 2011). In the future Model needs to cover yield variation applicable when land-holding size increases instead of assuming the constant high and low returns from different sizes of land-holdings.

The relationship of yield in different crops with the increase in land holdings requires more profound studies. However, the paper can still establish the requirement of different sets of MSP according to land-holding size to address agricultural poverty, which was its original objective. Farmers with the least land-holding need the highest support; with the increase in size, demand for support reduces, output increases, and the MSP should be adjusted accordingly.

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Appendix
Table 1. Inflation-adjusted Cost of Production for different Kharif Crops

Table 1:	Cost of Production		Inflation adjusted Cost of production Prices: 2020-21 Rs./ha.							
			Rice	Maize	Jowar	Bajra	Groundnut	Arhar	Seasmum	Ragi
1.1.1	Human Labour	Family	10382.10	7877.07	11730.35	8966.33	9737.87	16107.24	8692.19	17247.26
1.1.2		Attached	282.44	131.14	0.00	19.10	25.37	393.15	9.25	0.00
1.1.3		Casual	13908.04	11605.89	11303.61	9535.29	10881.34	14931.89	10126.06	14083.64
1.1.4		Total	24572.58	19614.10	23033.96	18520.71	20644.58	31432.28	18827.50	31330.90
1.2.1	Animal Labour	Hired	259.28	1279.96	449.30	570.23	743.29	3001.13	371.99	12.08
1.2.2		Owned	692.24	957.32	2786.68	506.09	3582.14	4763.38	321.77	10170.86
1.2.3		Total	951.52	2237.28	3235.98	1076.32	4325.43	7764.51	693.76	10182.94
1.3.1	Machine Labour	Hired	10312.11	7750.10	5476.39	4654.87	5540.41	10084.37	3476.19	2899.20
1.3.2		Owned	486.58	174.38	175.24	930.64	1588.39	698.68	1346.64	0.00
1.3.3		Total	10798.68	7924.48	5651.63	5585.50	7128.81	10783.05	4822.83	2899.20
1.4	Seed		2321.32	5680.27	907.92	2234.24	11808.56	2329.82	1150.03	230.64
1.5.1	Fertilizer & Manure	Fertilizer	7918.08	7108.13	5943.58	2961.51	3244.44	5222.90	3666.06	3382.93
1.5.2		Manure	795.66	58.31	505.41	754.18	3888.72	669.61	4753.44	7991.59
1.5.3		Total	8713.74	7166.45	6448.99	3715.69	7133.16	5892.51	8419.50	11374.52
1.6	Insecticides		3862.90	1790.92	2477.86	130.89	3607.99	7860.45	1056.04	0.00
1.7	Irrigation Charges		1227.48	733.06	285.51	4582.31	1830.61	698.25	3996.62	103.77
1.8	Crop Insurance		0.00	0.00	0.00	0.00	0.00	66.63	0.00	0.00
1.9	Payment to Contractor		5590.75	3743.51	0.00	503.75	547.09	185.54	0.00	0.00
1.10	Miscellaneous		159.72	150.28	68.03	0.00	0.00	298.07	79.91	4631.13
1.11	Interest on Working Capital		1494.25	1286.34	949.35	855.71	1477.74	1600.10	948.54	1359.53
1	Operational Cost (Total)		59692.95	50326.69	43059.23	37205.13	58503.97	68911.23	39994.75	62112.64
2.1	Rental Value of Owned Land		29246.24	26400.46	15378.23	9027.24	15673.80	14924.92	10614.53	8021.68
2.2	Rent Paid For Leased-in-Land		4339.93	1332.07	1569.84	749.02	412.32	0.00	43.95	0.00
2.3	Land Revenue, Taxes, Cesses		0.00	0.00	0.00	4.04	5.14	66.73	4.74	11.23
2.4	Depreciation on Implements & Farm B		444.34	618.81	377.50	289.66	355.88	1477.33	362.65	660.66
2.5	Interest on Fixed Capital		2967.28	3218.78	1144.08	3147.52	4243.79	7587.76	4295.79	3918.67
2	Fixed Costs (Total)		36997.78	31570.13	18469.65	13217.48	20690.94	24056.73	15321.65	12612.24
3	Total Cost [1+2]		96690.73	81896.81	61528.87	50422.61	79194.91	92967.96	55316.40	74724.88

Adopted from: DIRECTORATE OF ECONOMICS & STATISTICS, INDIA (2017-18)
Adjusting impact of inflation (5.16%) increase in agricultural production prices between 2018 to 2021
Opertaional Cost = (1.1.4+1.2.3+1.3.3+1.4+1.5.3+1.6+1.7+1.8+1.9+1.10+1.11)
Fixed Cost= 2.1+2.2+2.3+2.4+2.5

Table 2. Calculation of Survival Income at different MSP

Table 2:	Calculation of Survival Income at different MSP	Rice			Maize			Jowar			Bajra		
		Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP
a1	Total Cost from table 1	96690.73	96690.73	96690.73	81896.81	81896.81	81896.81	61528.87	61528.87	61528.87	50422.61	50422.61	50422.61
a2	MSP per Quintal	1888	2265.6	2643.2	1870	2244	2618	2620	3144	3668	2150	2580	3010
a3	MSP per kg	18.88	22.656	26.432	18.7	22.44	26.18	26.2	31.44	36.68	21.5	25.8	30.1
a4	Yield per Kgs/ha	4057	4057	4057	4436	4436	4436	1043	1043	1043	1215	1215	1215
a5	Income= (a3*a4)	76596.16	91915.392	107234.624	82953.2	99543.84	116134.48	27326.6	32791.92	38257.24	26122.5	31347	36571.5
a6	by product value per ha.	4685.04	4685.04	4685.04	2104.73	2104.73	2104.73	5117.66	5117.66	5117.66	18311.84	18311.84	18311.84
a7	Total Income Per Ha (a5+a6)	81281.20	96600.43	111919.66	85057.93	101648.57	118239.21	32444.26	37909.58	43374.90	44434.34	49658.84	54883.34
a8	Farmer Profit/Loss (a7 - a1)	-15409.53	-90.30	15228.94	3161.12	19751.76	36342.40	-29084.61	-23619.29	-18153.97	-5988.27	-763.77	4460.73
	Survival Income & Savings												
b1	Human Labour	10382.10	10382.10	10382.10	7877.07	7877.07	7877.07	11730.35	11730.35	11730.35	8966.33	8966.33	8966.33
b2	Payment to Contractor	5590.75	5590.75	5590.75	3743.51	3743.51	3743.51	0.00	0.00	0.00	503.75	503.75	503.75
b3	Rental Value of Owned Land	29246.24	29246.24	29246.24	26400.46	26400.46	26400.46	15378.23	15378.23	15378.23	9027.24	9027.24	9027.24
b4	Depreciation on Implements & Farm Building	444.34	444.34	444.34	618.81	618.81	618.81	377.50	377.50	377.50	289.66	289.66	289.66
b5	Interest on Fixed Capital	2967.28	2967.28	2967.28	3218.78	3218.78	3218.78	1144.08	1144.08	1144.08	3147.52	3147.52	3147.52
b6	Owned animal labour	692.24	692.24	692.24	957.32	957.32	957.32	2786.68	2786.68	2786.68	506.09	506.09	506.09
b7	Owned Machine labour	486.58	486.58	486.58	174.38	174.38	174.38	175.24	175.24	175.24	930.64	930.64	930.64
b8	Total Suvival Savings (b1+b2+b3+b4+b5+b6+b7)	49809.51	49809.51	49809.51	42990.34	42990.34	42990.34	31592.08	31592.08	31592.08	23371.24	23371.24	23371.24
	Possible range of Income												
c1	Survival Income (a7+b8)	131090.71	146409.95	161729.18	128048.27	144638.91	161229.55	64036.34	69501.66	74966.98	67805.58	73030.08	78254.58
d1	Disposable Income (c1 - a1)	34399.99	49719.22	65038.45	46151.46	62742.10	79332.74	2507.47	7972.79	13438.11	17382.97	22607.47	27831.97

[1] (Ahmed, Development of Agriculture Model to Measure Survival Income for Different Categories of Agriculture Land-Holding Farmers, 2021)
2 (Ahmed, Poverty analysis in Maize cultivating farmers under different land-holding categories, 2021)

Table 2:	Calculation of Survival Income at different MSP	Groundnut			Arhar			Seasmum			Ragi		
		Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP	Income at MSP	20% increase in SP over MSP	40% increase in SP over MSP
a1	Total Cost from table 1	79194.91	79194.91	79194.91	92967.96	92967.96	92967.96	55316.40	55316.40	55316.40	74724.88	74724.88	74724.88
a2	MSP per Quintal	5275	6330	7385	6000	7200	8400	6855	8226	9597	3295	3954	4613
a3	MSP per kg	52.75	63.3	73.85	60	72	84	68.55	82.26	95.97	32.95	39.54	46.13
a4	Yield per Kgs/ha	2051	2051	2051	785	785	785	535	535	535	2500	2500	2500
a5	Income= (a3*a4)	108190.25	129828.3	151466.35	47100	56520	65940	36674.25	44009.1	51343.95	82375	98850	115325
a6	by product value per ha.	14885.33	14885.33	14885.33	2707.38	2707.38	2707.38	854.59	854.59	854.59	2365.90	2365.90	2365.90
a7	Total Income Per Ha (a5+a6)	123075.58	144713.63	166351.68	49807.38	59227.38	68647.38	37528.84	44863.69	52198.54	84740.90	101215.90	117690.90
a8	Farmer Profit/Loss (a7 - a1)	43880.67	65518.72	87156.77	-43160.58	-33740.58	-24320.58	-17787.56	-10452.71	-3117.86	10016.02	26491.02	42966.02
	Survival Income & Savings												
b1	Human Labour	9737.87	9737.87	9737.87	16107.24	16107.24	16107.24	8692.19	8692.19	8692.19	17247.26	17247.26	17247.26
b2	Payment to Contractor	547.09	547.09	547.09	185.54	185.54	185.54	0.00	0.00	0.00	0.00	0.00	0.00
b3	Rental Value of Owned Land	15673.80	15673.80	15673.80	14924.92	14924.92	14924.92	10614.53	10614.53	10614.53	8021.68	8021.68	8021.68
b4	Depreciation on Implements & Farm Building	355.88	355.88	355.88	1477.33	1477.33	1477.33	362.65	362.65	362.65	660.66	660.66	660.66
b5	Interest on Fixed Capital	4243.79	4243.79	4243.79	7587.76	7587.76	7587.76	4295.79	4295.79	4295.79	3918.67	3918.67	3918.67
b6	Owned animal labour	3582.14	3582.14	3582.14	4763.38	4763.38	4763.38	321.77	321.77	321.77	10170.86	10170.86	10170.86
b7	Owned Machine labour	1588.39	1588.39	1588.39	698.68	698.68	698.68	1346.64	1346.64	1346.64	0.00	0.00	0.00
b8	Total Suvival Savings (b1+b2+b3+b4+b5+b6+b7)	35728.96	35728.96	35728.96	45744.84	45744.84	45744.84	25633.57	25633.57	25633.57	40019.13	40019.13	40019.13
	Possible range of Income												
c1	Survival Income (a7+b8)	158804.54	180442.59	202080.64	95552.22	104972.22	114392.22	63162.41	70497.26	77832.11	124760.03	141235.03	157710.03
d1	Disposable Income (c1 - a1)	79609.63	101247.68	122885.73	2584.26	12004.26	21424.26	7846.01	15180.86	22515.71	50035.15	66510.15	82985.15

Table 3: International Poverty Criteria			
Poverty (World Bank)	Less than($) per day	$1=73.6	Per month (Rs)
Extreame Poverty	1.9	139.84	4195.2
Moderate Poverty	3.1	228.16	6844.8
Vulenrable	5.5	404.8	12144

Table 4: Income range and Low yield and at different MSP (at MSP, above 20% MSP and above 40% MSP)				
		Min. Support Price	20% increase in SP over MSP	40% increase in SP over MSP
Rice, Cultivation Period: 5 months	Total income from cultivation (Rs.) from Highest Yield 4057 kgs/ha	34399.99	49719.22	65038.45
	Per Month Income (Rs.)	6880.00	9943.84	13007.69
	Total income from cultivation (Rs.) Min. Yield 2500 Kgs/ha	5003.83	14443.83	23883.83
	Per Month Income (Rs.)	1000.77	2888.77	4776.77
Maize, Cultivation Period: 3 months	Total income from cultivation (Rs.) from Highest Yield 4436 kgs/ha	46151.46	62742.10	79332.74
	Per Month Income (Rs.)	15383.82	20914.03	26444.25
	Total income from cultivation (Rs.) Min. Yield 2706 Kgs/ha	13800.46	23920.90	34041.34
	Per Month Income (Rs.)	4600.15	7973.63	11347.11
Jowar, Cultivation Period: 2.5 months	Total income from cultivation (Rs.) from Highest Yield 1043 kgs/ha	2507.47	7972.79	13438.11
	Per Month Income (Rs.)	1002.99	3189.12	5375.24
	Total income from cultivation (Rs.) Min. Yield 889 Kgs/ha	-1527.33	3131.03	7789.39
	Per Month Income (Rs.)	-610.93	1252.41	3115.76
Bajra, Cultivation Period: 2 months	Total income from cultivation (Rs.) from Highest Yield 1215 kgs/ha	17382.97	22607.47	27831.97
	Per Month Income (Rs.)	8691.49	11303.74	13915.99
	Total income from cultivation (Rs.) Min. Yield 900 Kgs/ha	10610.47	14480.47	18350.47
	Per Month Income (Rs.)	5305.24	7240.24	9175.24
Groundnut, Cultivation Period: 4 months	Total income from cultivation (Rs.) from Highest Yield 2051 kgs/ha	79609.63	101247.68	122885.73
	Per Month Income (Rs.)	19902.41	25311.92	30721.43
	Total income from cultivation (Rs.) Min. Yield 750 Kgs/ha	10981.88	18894.38	26806.88
	Per Month Income (Rs.)	2745.47	4723.60	6701.72
Arhar-Tur, Cultivation Period: 5 months	Total income from cultivation (Rs.) from Highest Yield 785 kgs/ha	2584.26	12004.26	21424.26
	Per Month Income (Rs.)	516.85	2400.85	4284.85
	Total income from cultivation (Rs.) Min. Yield 646 Kgs/ha	-5755.74	1996.26	9748.26
	Per Month Income (Rs.)	-1151.15	399.25	1949.65
Seasmum, Cultivation Period: 4 months	Total income from cultivation (Rs.) from Highest Yield 535 kgs/ha	7846.01	15180.86	22515.71
	Per Month Income (Rs.)	1961.50	3795.22	5628.93
	Total income from cultivation (Rs.) Min. Yield 413 Kgs/ha	-517.09	5145.14	10807.37
	Per Month Income (Rs.)	-129.27	1286.29	2701.84
Ragi, Cultivation Period: 4.5 months	Total income from cultivation (Rs.) from Highest Yield 2500 kgs/ha	50035.15	66510.15	82985.15
	Per Month Income (Rs.)	11118.92	14780.03	18441.14
	Total income from cultivation (Rs.) Min. Yield 2000 Kgs/ha	33560.15	46740.15	59920.15
	Per Month Income (Rs.)	7457.81	10386.70	13315.59

Table 5: Categories of Land-Holdings (All India)				
	Year 2015-16	%	Area	Avg. Size
Marginal (Less than 1 hectare)	99858000	68.52	37960	0.38
Small (1.0 to 2.0 hectares)	25777000	17.69	36435	1.41
Semi-Medium (2.0 to 4.0 hectares)	13776000	9.45	37168	2.7
Medium (4.0 to 10.0 hectares)	5485000	3.76	31367	5.72
Large (10.0 hectares and above)	831000	0.57	14212	17.1
Total	1.46E+08	100	157142	1.08
Adopted from: Department of Agriculture, Cooperation & Farmers Welfare (Agriculture Census 2015-16, Phase-I)				
Area Operated: ('000 Hectares)				
Average size: (Hectares)				

Table 6. Income based on MSP at High and Low Yield

Table 6: Income based on MSP at High and Low Yield

	Avg. Size	Rice				Maize				Jowar			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	2614.399	EP	380.29	EP	5845.851	MP	1748.06	EP	381.1352	EP	-232.15	EP
Small (1.0 to 2.0 hectares)	1.41	9700.796	V	1411.08	EP	21691.19	S	6486.22	MP	1414.212	EP	-861.42	EP
Semi-Medium (2.0 to 4.0 hectares)	2.7	18575.99	S	2702.07	EP	41536.31	S	12420.41	S	2708.066	EP	-1649.52	EP
Medium (4.0 to 10.0 hectares)	5.72	39353.58	S	5724.38	MP	87995.45	S	26312.87	S	5737.087	MP	-3494.54	EP
Large (10.0 hectares and above)	17.1	117648	S	17113.09	S	263063.3	S	78662.61	S	17151.08	S	-10446.95	EP
Average Holdings	1.08	6880.00	V	1080.83	EP	15383.82	S	4968.17	MP	1002.99	EP	-659.81	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 6: Income based on MSP at High and Low Yield

	Avg. Size	Bajra				Groundnut				Arhar-Tur			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	3302.765	EP	2015.99	EP	7562.915	V	1043.28	EP	196.4037	EP	-437.44	EP
Small (1.0 to 2.0 hectares)	1.41	12255	S	7480.38	V	28062.4	S	3871.11	EP	728.7611	EP	-1623.12	EP
Semi-Medium (2.0 to 4.0 hectares)	2.7	23467.02	S	14324.14	S	53736.5	S	7412.77	V	1395.5	EP	-3108.10	EP
Medium (4.0 to 10.0 hectares)	5.72	49715.31	S	30345.96	S	113841.8	S	15704.10	S	2956.393	EP	-6584.57	EP
Large (10.0 hectares and above)	17.1	148624.4	S	90719.56	S	340331.2	S	46947.56	S	8838.167	V	-19684.63	EP
Average Holdings	1.08	8691.49	V	5729.66	MP	19902.41	S	2965.11	EP	516.85	EP	-1243.24	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 6: Income based on MSP at High and Low Yield

	Avg. Size	Seasmum				Ragi			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	745.3712	EP	-49.12	EP	4225.19	MP	2833.97	EP
Small (1.0 to 2.0 hectares)	1.41	2765.719	EP	-182.27	EP	15677.68	S	10515.51	V
Semi-Medium (2.0 to 4.0 hectares)	2.7	5296.058	MP	-349.03	EP	30021.09	S	20136.09	S
Medium (4.0 to 10.0 hectares)	5.72	11219.8	V	-739.44	EP	63600.23	S	42658.67	S
Large (10.0 hectares and above)	17.1	33541.7	S	-2210.55	EP	190133.6	S	127528.55	S
Average Holdings	1.08	1961.50	EP	-139.61	EP	11118.92	V	8054.43	V

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 7 Income, when the market rate is 20% above MSP

Table 7a: Income, when the market rate is 20% above MSP

	Avg. Size	Rice				Maize				Jowar			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	3778.66	EP	1097.73	EP	7947.33	V	3029.98	EP	1211.86	EP	475.92	EP
Small (1.0 to 2.0 hectares)	1.41	14020.82	S	4073.16	EP	29488.79	S	11242.82	V	4496.65	MP	1765.90	EP
Semi-Medium (2.0 to 4.0 hectares)	2.7	26848.38	S	7799.67	V	56467.89	S	21528.81	S	8610.61	V	3381.51	EP
Medium (4.0 to 10.0 hectares)	5.72	56878.79	S	16523.74	S	119628.27	S	45609.18	S	18241.74	S	7163.79	V
Large (10.0 hectares and above)	17.1	170039.73	S	49397.89	S	357629.96	S	136349.12	S	54533.87	S	21416.23	S
Average Holdings	1.08	10739.35	V	3119.87	EP	22587.16	S	8611.52	V	3444.24	EP	1352.60	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

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Table 7b: Income, when the market rate is 20% above MSP

	Avg. Size	Bajra				Groundnut				Arhar-Tur			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	4295.42	MP	2751.29	EP	9618.53	V	1794.97	EP	912.32	EP	151.72	EP
Small (1.0 to 2.0 hectares)	1.41	15938.27	S	10208.73	V	35689.81	S	6660.27	MP	3385.20	EP	562.95	EP
Semi-Medium (2.0 to 4.0 hectares)	2.7	30520.09	S	19548.64	S	68342.19	S	12753.71	S	6482.30	MP	1077.98	EP
Medium (4.0 to 10.0 hectares)	5.72	64657.38	S	41414.16	S	144784.19	S	27018.97	S	13732.87	S	2283.72	EP
Large (10.0 hectares and above)	17.1	193293.91	S	123808.06	S	432833.85	S	80773.50	S	41054.57	S	6827.21	MP
Average Holdings	1.08	12208.04	S	7819.46	V	27336.87	S	5101.48	MP	2592.92	EP	431.19	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 7c: Income, when the market rate is 20% above MSP

	Avg. Size	Seasmum				Ragi			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	1442.18	EP	488.79	EP	5616.41	MP	3946.95	EP
Small (1.0 to 2.0 hectares)	1.41	5351.25	MP	1813.66	EP	20839.85	S	14645.25	S
Semi-Medium (2.0 to 4.0 hectares)	2.7	10247.08	V	3472.97	EP	39906.09	S	28044.09	S
Medium (4.0 to 10.0 hectares)	5.72	21708.63	S	7357.55	V	84541.79	S	59411.92	S
Large (10.0 hectares and above)	17.1	64898.19	S	21995.48	S	252738.55	S	177612.55	S
Average Holdings	1.08	4098.83	EP	1389.19	EP	15962.43	S	11217.63	V

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month

Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month

Vulnerable =V, less than $5.5 per day or Rs. 12144 per month

Safe=S

Table 8: Income, when the market rate is 40% above MSP													
	Avg. Size	Rice				Maize				Jowar			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	4942.92	MP	1815.17	EP	10048.81	V	4311.90	MP	2042.59	EP	1183.99	EP
Small (1.0 to 2.0 hectares)	1.41	18340.84	S	6735.24	MP	37286.39	S	15999.43	S	7579.09	V	4393.21	MP
Semi-Medium (2.0 to 4.0 hectares)	2.7	35120.76	S	12897.27	S	71399.46	S	30637.20	S	14513.16	S	8412.54	V
Medium (4.0 to 10.0 hectares)	5.72	74403.99	S	27323.10	S	151261.09	S	64905.49	S	30746.39	S	17822.12	S
Large (10.0 hectares and above)	17.1	222431.50	S	81682.69	S	452196.61	S	194035.63	S	91916.66	S	53279.42	S
Average Holdings	1.08	14048.31	S	5158.91	MP	28559.79	S	12254.88	S	5805.26	MP	3365.02	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 8: Income, when the market rate is 40% above MSP													
	Avg. Size	Bajra				Groundnut				Arhar-Tur			
		Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	5288.08	MP	3486.59	EP	11674.14	V	2546.65	EP	1628.24	EP	740.87	EP
Small (1.0 to 2.0 hectares)	1.41	19621.54	S	12937.08	S	43317.22	S	9449.43	V	6041.64	MP	2749.01	EP
Semi-Medium (2.0 to 4.0 hectares)	2.7	37573.17	S	24773.14	S	82947.87	S	18094.65	S	11569.10	V	5264.06	MP
Medium (4.0 to 10.0 hectares)	5.72	79599.45	S	52482.36	S	175726.60	S	38333.85	S	24509.35	S	11152.01	V
Large (10.0 hectares and above)	17.1	237963.38	S	156896.56	S	525336.52	S	114599.43	S	73270.97	S	33339.05	S
Average Holdings	1.08	15029.27	S	9909.26	V	33179.15	S	7237.86	V	4627.64	MP	2105.62	EP

Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month
Safe=S

Table 8: Income, when the market rate is 40% above MSP								
		Seasmum				Ragi		
	Avg. Size	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)	Monthly Income at higher yield	Poverty Status (Higher Side)	Monthly Income at Lower yield	Poverty Status (Lower Side)
Marginal (Less than 1 hectare)	0.38	2138.99	EP	1026.70	EP	7007.63	V	5059.92	MP
Small (1.0 to 2.0 hectares)	1.41	7936.79	V	3809.60	EP	26002.01	S	18774.98	S
Semi-Medium (2.0 to 4.0 hectares)	2.7	15198.11	S	7294.98	V	49791.09	S	35952.09	S
Medium (4.0 to 10.0 hectares)	5.72	32197.47	S	15454.54	S	105483.34	S	76165.16	S
Large (10.0 hectares and above)	17.1	96254.67	S	46201.52	S	315343.55	S	227696.55	S
Average Holdings	1.08	6079.24	MP	2917.99	EP	19916.43	S	14380.83	S
Extreme Poverty=EP, less than $1.9 per day or Rs. 4195.02 per month								
Moderate Poverty=MP, less than $3.1 per day or Rs.6844.8 per month								
Vulnerable =V, less than $5.5 per day or Rs. 12144 per month								
Safe=S								

Table 9: All India Cropped Area in Percentage		
Kharif Crops		Cropped Area in percentage
	Rice	22.3
	Jowar	3.1
	Bajra	4
	Maize	4.4
	Arhar-Tur	1.7
	Groundnut	2.6
	seasamum	0.9
	Ragi	0.6
	Total	**39.6**
Rabi Crops		
	Wheat	16.2
	Barley	0.4
	Gram	3.9
	Total	**20.5**
Other Cereals and Millets		0.3
Other Pulses except Gram & Tur)		5.4
Fruits and vegetables		9.7
Non-food crops		24.5
Total (All India)		**100**
Source: Poceket Book of Agricultural Statistics 2017, Goovernment of India Publication, Directorate of Economics and Statistics		