Int.J.Curr.Microbiol.App.Sci (2019) *8*(8): 1245-1254

International Journal of Current Microbiology and Applied Sciences
ISSN: 2319-7706 **Volume 8 Number 08 (2019)**
Journal homepage: http://www.ijcmas.com

Original Research Article https://doi.org/10.20546/ijcmas.2019.808.146

Economic Study of the Level of Income from Different Sources on the Sample Farms Holdings in District Mau Nath Bhanjan (U.P.), India

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Keywords

Agriculture income, Non-agriculture income

Article Info

Accepted:
10 July 2019
Available Online:
10 August 2019

A B S T R A C T

The main variables of economic development have been regarded as Income, Investment and Saving. The increase in capital stock along with its efficiency directly influences the productive capacity of the economy for increasing the total output or income. However, the growth in capital is in turn directly dependent on the part of additional output which is not immediately consumed but is saved and available for investment or increase in capital. The farmers of the study area were having two main source of income, i.e. Agricultural and non-agricultural sources. The estimated total income received from all sources, on overall average basis, came to Rs. 332793.67 of which agricultural sources amounted to Rs. 303789.01 (91.28 per cent) and non-agricultural resources Rs. 16625.16 (4.99 per cent) and borrowing to 12389.50 (3.71 per cent). The total agricultural income (Rs. 332793.67 overall average) crop production accounted for the highest share being 77.98 per cent, followed by milk production 16.53 per cent, agricultural wages 3.06 per cent and hiring out of machinery 2.58 per cent. As regards different size groups, the percentage share of income received from crop production gave an increasing trend while that of milk production and agricultural wage earnings a decreasing trend with the rise in farm size. It indicates that marginal & small farms have to depend much more on milk production and agricultural wages for their livelihood. As regards different size group of farms, income received from non-agricultural wages stood highest (65.24 per cent) on marginal farm, while share of income received from business and salary was highest (41.96 and 58.03 per cent) on medium farms. Here again non-agricultural wages were the major source of income of marginal farmers. District Mau of Eastern U.P. has an important place in terms of fertility and agricultural advancement in India. The land of this part is Loamy which is most fertile. The total geographical area of the district is 171624.00 ha. out of which 560.00 ha., 2504.00 ha., 14533.00 ha., 3706.00 ha., 1915.00 ha., 25560.00 ha., 194.00 ha., 3596.00 ha., 119056.00 ha., 80787.00 ha., 199843.00 ha., 114689.00 ha. and 193991.00 ha. is area under forest, barren cultivated waste, present fallow land, other fallow land, barren & uncultivated land, land put to non-agriculture use, pasture land, area under bush forest and garden, net sown area, area sown more than once, grass area sown (rabi, kharif, jayad and land prepared for sugarcane), net irrigated area and grass irrigated area respectively. (Source: Land department office and Economics &Statistics Department Mau 2016-17).

Introduction

In Indian economy, agriculture and industry are the main sections. Agriculture generates about 14.20 per cent (2016-17) of the total National income. The technological break-through in agricultural production took place in the country during 1967-68, brought about a substantial change in income pattern of the farming community. Intensive research efforts are being made to explore new methods and techniques that would further raise agricultural production, increase in incomes and thus savings. As a result the farmers are motivated to save and invest in order to expand their volume of farm business and further raise their

income. The progressiveness of agriculture will however depend upon what the farmer's do with the additional incomes generated from year to year. The growth rate in the farm economy largely depends on the stock of capital built and plans of savings for further improvements to the organization. If the increase in farm income was mostly utilized for increasing capital investment in farm organization, the growth rate in agriculture sector would be higher.

If the increasing capital investments were spent on house hold expenditure without building up the necessary infrastructure, the economic development of agriculture might be hampered.

Thus the utilization of additional incomes earned by the families as a matter of concern, are in context of rapid economic development of the developing countries. Agricultural development of a country like India is of prime importance, because the majority of the population depends on agriculture as the main source of livelihood. For the development of agriculture sector, the country needs a huge amount of creating the infrastructure in the rural area and for supplying the basic inputs to the farming community. Since it is difficult for any government to meet the requirements of the rural masses for their own resource it becomes necessary to increase the income of the farmers by increasing the productivity of agriculture.

An increase in the income of the farmers will increase their saving potentialities, which will ultimately add the capital formation in agriculture. In this connection, the example of Japan and USSR may be cited, where a number of economists have recently begun to emphasize that agriculture should generate surpluses and finance not only its own investments and capital formation but should also help in non-farm sector.

Materials and Methods

The methodological aspect has been presented under the following heads.

Sampling Technique
Collection of data and Method of enquiry
Period of enquiry.
Analytical tools

Sampling design

A two stage random sampling technique was adopted to select the village and farmers while district and blocks was selected purposively to the present study.

Selection of district

District Mau Nath Bhanjan of U.P. selected purposively because of well acquaintance with the investigator and one of the major crops growing district of eastern U.P.

Selection of blocks

There are 09 development blocks are in the district Mau Nath Bhanjan. A list of all the blocks practicing the major crops cultivation was prepared.

Out of them 02 blocks namely Ghosi and Kopaganj selected purposively on the basis of highest area under the major crop production.

Selection of the villages

A list of all the villages falling in selected block, Ghosi and Kopaganj was prepared.

Out of them 03 villages from each block was selected randomly.

A total of 06 villages would be selected from the universe of the two blocks (Ghosi and Kopagaj) for the investigation.

Selection of sample farmers

A separate list of farmers of the sample villages was prepared along with their holding size in ascending order. Farmers from these villages were selected according to size group of holdings. Based on size of holding groups, farms are classified into three groups *i.e.* (1) Marginal below -1ha, (2) Small 1.0-2.0 ha and (3) Medium 2.0-4.0 ha. A sample of 180 farmers was drawn from the universe of 06 villages (90 farmers from the each block) for present investigation. The number of farmers was selected randomly through proportionate allocation to the population.

Method of enquiry and collection of data

The present enquiry was conducted by survey method. The primary data were collected from sample farmers through direct personal interview with the help of already prepared and pre-tested schedules. During the period of enquiry, several visits were made to the selected villages and sample farmers for collection of data keeping in view of the convenience of the respondents. All the possible care was taken in the collection of correct and reliable information through cross checking.

Period of study

The study was pertained for the agricultural year 2017-18.

Analysis of data

Appropriate statistical tools and techniques such as Tabular analysis, Average, Weightage Average, Benefit-Cost ratio analysis, Marginal propensity to consume, Average propensity to consume, Marginal propensity to save, Average propensity to savewas applied for the testing of present investigation according to the problem in the district Mau Nath Bhanjan.

Statistical analysis

Primary data collected was analyzed and tabulated in order to arrive at the results. In addition mean and percentage were used for the interpretation of the findings.

Tabular analysis

Tabular analysis was used to compare the values of income, expenditure savings and investment on different categories of households.

Weighted average

The average give in the present study refers to the weighted average.

It was calculated by using following formula:

$$w = \frac{W1X1+W2X2+W3X3+.....+WnXn}{N}$$

$$= \frac{\sum WX}{N}$$

Where,

W_1 = the value of size group (0-1) ha.
W_2 = the value of size group (1-2) ha.
W_3 = the value of size group (2-4) ha.
X_1 = the cultivated area (0-1) ha.
X_2 = the cultivated area (1-2) ha.
X_3 = the cultivated area (2-4) ha.
N= total cultivated area

Benefit-cost ratio

A BCR shows the relationship between the relative costs and benefits of a proposed investigation.

It expressed in monetary or qualitative terms.

BCR = Total Benefits / Total Cost

If,

BCR>1.0 = the project is expected to deliver a positive net present value to a firm and its investors.

BCR < 1.0 = the project's costs outweigh the benefits and it should not be considered.

Results and Discussion

The income from crop cultivation depends upon a number of factors of which nature of crop grown, use of proper dose of production input, along with adoption of level of modern technology and intensity of cropping influences to a larger extent. The cropping pattern of the sample farmers was cereal based where cereals accounted for more than 83.46 per cent to total cropped area. The main crops grown by the farmers were paddy, wheat, maize, rapeseed and mustard and arhar. It was also observed that as the size of farm increases from marginal to small farms the area under cash crop decreases but a reverse changewas observed in the area of these crops when size of farm increases from small to medium farms. The per farm cost on various input factor in whole crop production was worked out and its details are presented in the table 1. This table indicates that on an average per farm cost of cultivation of whole crop was Rs. 222236.89. The cost of cultivation was observed higher on medium farms Rs. 417786.17 followed by small farms Rs. 192870.20 and marginal farms Rs. 56054.30.

Table 2 reveals that on an average basis per farm values of gross income, net income, family labour income and farm business income came to Rs. 440680.05, Rs. 218443.16, Rs. 229920.39 and Rs. 236924.56 per farm house hold respectively. All these values gave an increasing trend with the increase in farm size due to increasing size of farm business.

Cost and returns in milk production

It was found that sample farmers use to keep cow and buffalo for milk production purposes. Milk production was a good source of income to the marginal and small farmers. However the number of milch cattle maintained by them was small. It came to 1.68 on marginal farms, 3.12 on small farms and 5.40 on large farms. This increasing trend was due to increasing trend in size of farm business.

Income from milk production

The income received from milk production enterprise on the farm as whole has been worked out in the table 3.

The different items considered in per farm maintenance cost of Milk production from cow and buffalo in Table 3. It was observed that total production and maintenance cost per farm of cow and buffalo on the different categories; marginal, small and medium was Rs. 29178.10, Rs. 74109.60 and Rs. 96378.25 respectively. The average per farm maintenance cost of Milk production of cow and buffalo was Rs. 66555.31.

Table 4 reveals that per farm total maintenance, gross income and net income to Rs. 66555.31, Rs. 116247.26, and Rs. 49691.95 per household respectively. These values gave an increasing trend with the increase in farm size due to more number of milch cattles on large farms and better feeding and care by farmers for higher yield and income

Agriculture income

As already mentioned that there were two main sources of income of the sample farmers

i.e. agricultural and non-agricultural sectors. Agricultural incomes were mainly obtained from crops and milk production enterprises, agricultural wages and hiring out of tractors and farm machinery etc. The level and composition of agricultural income has been given in the table 4. Agricultural income received from crop and milk production enterprises refers to farm business income. The farm business income has been treated as disposable income to be used in working out savings and investments.

Table 4 shows that total income received from agricultural sector on an overall basis came to Rs. 236924.56 per farm household. It gave an increasing trend with the increase in farm size due to increasing size of farm business.

Total average agricultural income on marginal farms of below 1 hectare size group came to Rs. 63572.46 per house hold, while it came to Rs. 208271.44 per house hold on small farms (1-2 hectare size group) and Rs. 438929.79 per house hold on large farms (2-4 hectare size group).

Amongst different sources of agricultural income, crop production formed the main source of income on all size groups of farms followed by milk production. However, agricultural wages were found equally important source of income to the marginal farmers because of comparatively poor income received from crop enterprises due to noneconomic tiny holdings and poor resources.

When composition of income and its distribution in terms of percentage is examined table shows that crop production, on overall basis, accounted for 77.98 per cent of the total farm income, followed by milk production 16.35 per cent, agricultural wages 3.06 per cent and hiring out of machinery to 2.58 per cent. A size group wise examination shows that though crop production was the major source of income on all size groups of farms but its share varied considerably on different size group of farms. The income from crop production on marginal farms of below 1 hectare size group, accounted for 69.30 per cent, while on small farms (1-2 hectare size group) it was 77.69 per cent and on large farms (2-4 hectare) 84.61 per cent to total farm income. The next important source of income after crop production to marginal, small and medium farmers was milk production which shared for 20.17 per cent, 18.94 per cent and 15.38 per cent respectively. And the third important income source after crop production and milk production to marginal and small was agricultural wages which share 10.52 per cent and 3.35 per cent respectively while in case of medium farms there was no any agricultural wages. However, big farmers earned some income by way of hiring out tractors etc.

Table.1 Per farm cost of cultivation of whole crop in study area

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. a. Family labour	8176.59	12556.16	13698.95	11477.23
b. Hired labour	4546.54	21426.64	52884.39	26285.85
Human labour	12727.13	33972.80	66583.35	37371.09
2.Bullock labour /tractor Power	9743.40	38409.60	81345.25	43166.08
3. Seed	3433.35	12688.00	27968.67	14696.67
4. Manures and Fertilizers	6814.06	25297.60	62920.35	31677.33
5. Irrigation	5292.67	20440.00	45627.66	23786.77
6. Plant Protection	1474.86	7020.80	18654.66	9050.10
7. Interest on working capital	1973.86	6791.92	14782.02	7849.26
8. Rental value of land	13160.00	44800.00	93240.00	50400.00
9. Interest on fixed capital	1439.62	5449.48	14123.4	7004.16
Total cost	56054.30	192870.20	417786.17	222236.89

Table.2 Per farm measures of costs and returns of whole crop in study area

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Input cost	56054.30	192870.20	417786.17	222236.89
2.Gross income	110010.55	383136.00	828893.61	440680.05
3. Net income	53956.25	190265.80	411107.44	218443.16
4. Family labour Income	62132.84	202821.96	424806.39	229920.39
5. Farm business income	63572.46	208271.44	438929.79	236924.56

Table.3 Per farm maintenance cost of Milk production from cow and buffalo

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Fodder (Dry + green)	10453.60	26345.70	34740.70	23846.66
2.Concentrates	9256.40	23060.70	28685.35	20334.14
3. Human labour	4234.00	11446.30	13410.10	9363.46
4.Miscellaneous	1985.60	5650.20	8073.80	5236.52
5. Overhead charges	3248.50	8606.70	11468.30	7774.50
Total Maintenance cost	29178.10	74109.60	96378.25	66555.31

Table.4 Per farm cost and return of Milk production from cow and buffalo

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Total Maintenance	29178.10	74109.60	96378.25	66555.31
2. Gross Income	47683.60	124895.70	176162.50	116247.26
3. Net Income	18505.50	50786.10	79784.25	49691.95

Table.5 Agricultural income per farm household under different size group of sample farm (in Rs. per household)

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Crop Production	63572.46 (69.30)	208271.44 (77.69)	438929.79 (84.61)	236924.56 (77.98)
2. Milk production	18505.50 (20.17)	50786.10 (18.94)	79784.25 (15.38)	49691.95 (16.35)
3. Agricultural wages	9655.00 (10.52)	8990.00 (3.35)	- -	9322.50 (3.06)
4. Others	- -	- -	7850.00 (1.51)	7850.00 (2.58)
Total	91732.96 (100)	268047.54 (100)	518714.04 (100)	303789.01 (100)

Note: Figures in the parentheses shows respective percentage of total.

Table.6 Income from non-farm sources on sample farms (in Rs. Per household)

Particulars	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1.Non-agricultural wages	5858.00 (65.24)	3750.00 (28.31)	- -	4804.00 (28.89)
2. Salary	- -	4349.00 (32.83)	9300.00 (58.03)	6824.50 (41.04)
3.Business/shopping etc.	3120.00 (34.75)	5145.00 (38.84)	6725.00 (41.96)	4996.66 (30.05)
Total	8978.00 (100)	13244.00 (100)	16025.00 (100)	16625.16 (100)

Note: Figures in the parentheses shows respective percentage of total.

Table.7 Borrowing and their sources on sample farm (in Rs. Per household)

Particulars	Size Group (in Hect.)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Commercial banks/RRBs	- -	6545.00 (100)	16698.00 (100)	11621.50 (93.87)
2. Money lender	758.00 (100)	-	-	758.00 (6.12)
Total	758.00 (100)	6545.00 (100)	16698.00 (100)	12379.50 (100)

Note: Figures in the parentheses shows respective percentage of total.

Table.8 Total annual income on sample farm households (in Rs. Per household)

Source of Agril. Income	Size Group (in Hectare)			Average
	Below 1 Hectare	1-2 Hectare	2-4 Hectare	
1. Agricultural Income	91732.96 (90.40)	268047.54 (93.12)	518714.04 (94.06)	303789.01 (91.28)
2.Non-agricultural Income	8978.00 (8.84)	13244.00 (4.60)	16025.00 (2.90)	16625.16 (4.99)
3. Borrowings	758.00 (0.74)	6545.00 (2.27)	16698.00 (3.02)	12379.50 (3.71)
Total	101468.96 (100)	287836.54 (100)	551437.04 (100)	332793.67 (100)

Note: Figures in the parentheses shows respective percentage of total.

It concludes that next to crop enterprise, dairying is one of the major sources of income particularly to marginal small and medium farmers. It is due to the fact that dairying has become more paying than earlier in the locality due to operation of village milk cooperatives which supply milk to dairy unions.

Non-agricultural income

The income received by the farmers, from non-farm sources for the two years under study has been presented in the table 5; it includes income received from non-agricultural wages, salary and business etc.

Table 5 reveals that total average income from non-farm sources came to Rs. 16625.16 per house hold. It came to Rs. 8978.00 on marginal farms of below 1 hectare size group, Rs. 13244.00 on small farms (1-2 hectare size group) and Rs. 16025.00 per household on medium farms of (2-4 hectare) size group. Out of the total average income, salary accounted for the highest share (41.04 per cent) followed by business and shopping (30.05 per cent) and non-agricultural wages (28.89 per cent). A size group wise examination shows the income from non-agricultural wages formed the main source of income (65.24 per cent) followed by shop keeping (34.75 per cent) on marginal farms (below 1 hectare size group) while income from salary (58.03 per cent) and business (41.96) formed the main source of income on large farms (2-4 hectare). In case of small farms (1-2 hectare size group) income was received from business/shop (38.84 per cent), salary (32.83 per cent) and non-agricultural wages (28.31per cent).

Borrowings

The borrowing made by the sample farmers either for productive or unproductive purposes were also treated as income of the farmers and were added to the income of the farmers. The extent of borrowings and their sources during the study period has been given in the table 6.

Table 6 reveals that on overall basis, Commercial banks were the major source of borrowings on sample farms. It came to 93.87 per cent from commercial banks/RRBs followed by 6.12 per cent from moneylender to the total borrowings.

The importance of different sources, in the borrowings, differed in farms of different size groups. The marginal farmers of below 1 hectare size group made total borrowings from money lenders. In case of small farmers (1-2 hectare size group) and medium farmers (2-4 hectare size group) of farms made total borrowings from commercial banks or Regional Rural Bank of the locality. No borrowings were made from money lenders.

Total income

In order to arrive at the total annual income of the sample farm households, the income received from all sources i.e. agricultural and non-agricultural income and borrowings were added. The details of the total income are given in the table 7.

Table 7 Shows that the total income from all sources amounted to Rs. 101468.96, Rs. 287836.54 and Rs. 551437.04 per farm household belonging to marginal (below 1 hectare), small (1-2 hectare) and medium farm household (2-4 hectare) respectively. The overall income worked out to Rs. 332793.67 per household. Among the different sources of income, the contribution made by agricultural sector (including crop production, milk production, and agricultural wages and hiring out of machinery) was the highest to the extent of 91.28 per cent at the

overall basis. Within the size groups the relative contribution of the agricultural sector and borrowings indicated an increasing trend with the increase in farm size while those of non-agricultural income showed decreasing trend with the increase in farm size.

The farmers of the study area were having two main source of income, i.e. Agricultural and non-agricultural sources. Agricultural sources include crop production, milk production, agricultural wages, hiring out of tractors and farm machinery etc. while non - agricultural sources comprised non-agricultural wages, service and business/shop keeping etc. The estimated total income received from all sources, on overall average basis, came to Rs. 332793.67 of which agricultural sources amounted to Rs. 303789.01 (91.28 per cent) and nonagricultural resources Rs. 16625.16 (4.99 per cent) and borrowing to 12389.50 (3.71 per cent). These income values gave an increasing trend with the increase in farm size due to increasing size of farm business. However, percentage share of agricultural income to total income gave an increasing trend while that of non-agricultural income decreasing trend with the rise in farm size. It was due to the fact that marginal and small farmers have to depend on non-agricultural sources of income, for their livelihood because of poor farm income as compared to medium farmers.

The total agricultural income (Rs. 332793.67 overall average) crop production accounted for the highest share being 77.98 per cent, followed by milk production 16.53 per cent, agricultural wages 3.06 per cent and hiring out of machinery 2.58 per cent. As regards different size groups, the percentage share of income received from crop production gave an increasing trend while that of milk production and agricultural wage earnings a decreasing trend with the rise in farm size. It indicates that marginal and small farms have to depend much more on milk production and agricultural wages for their livelihood. In case of non-agricultural income (Rs. 16625.16 overall average). As regards different size group of farms, income received from non-agricultural wages stood highest (65.24 per cent) on marginal farm, while share of income received from business and salary was highest (41.96 and 58.03 per cent) on medium farms. Here again non-agricultural wages were the major source of income of marginal farmers.

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How to cite this article:

Kuldeep Maurya, J. Rai, Sharad Yadav, Arun Kumar Rajbhar and Tej Singh. 2019. Economic Study of the Level of Income from Different Sources on the Sample Farms Holdings in District Mau Nath Bhanjan (U.P.), India. *Int.J.Curr.Microbiol.App.Sci.* 8(08): 1245-1254.
doi: https://doi.org/10.20546/ijcmas.2019.808.146