Study of saving and investment pattern on sample farms households

Abstract

The saving and investment pattern of different forms sample group was studied during 2014-16 and it was observed that large farm holders were able to save higher income than small farmers while lowest income group had negative savings. In respect of investment on different fixed assets, irrigation was on first priority, followed by purchase of milch animals, farms buildings and investment in land and its improvement. Investment on working capital amongst different cash inputs, hired human labourer accounted highest share (29.44 per cent), followed by manure & fertilizers (22.33 per cent), hired power tractor (16.96 per cent), irrigation (13.61 per cent) and seeds (13.50 per cent) to total cash inputs. Marginal farmers could not invest for non-farm physical capital because of no savings with them. Small and large farmers groups invested in all the items in which it was highest in working capital (61.28 to 61.84 per cent), followed by investment in fixed capital (14.41 to 16.84 per cent), financial capital (12-14 per cent) and non-farm capital (7-12 per cent). The highest investment was made on working capital (69.02 per cent) by sample farmers. Current income was found to be the main source of finance in all income groups which accounted for 49.70 to 94.79 per cent share of the total investment followed by savings which shared for 40.10 to 49.12 per cent in total investment.

Keywords: Saving, investment, income, sample forms.
Introduction

Agriculture contributes about 17 per cent of the national income in the Indian economy and more than 70 per cent rural households depend on agriculture. In this respect income, saving and investment have been regarded as main variables of economic development. Increase in capital stock along with its efficiency directly influences the productive capacity of economy for increasing total income. However, this growth in capital is in turn directly dependent on the part of additional output which is not immediately consumed but is saved and is available for investment in capital. This important role of saving is a determinant factor of growth in income and economic development. Even the Keynesian consumption function which brought a revolution in the theory of employment is intimately linked to what he called, ‘propensity to save’.

From the neo-classical economists, “saving is an excess of income over necessary expenditure”. According to J. S. Mill, “saving enriches and spending impoverishes the community along with the individual”. Alfred Marshall said, “The power to save depends on an excess of income over necessary expenditure and that a rise in the rate of interest offered for capital. Thus income, saving and investment constituted the three strategic determinants of economic development in the classical, neo-classical and Keynesian system.

Progressiveness of agriculture will, however, depend upon what farmers do with the additional income generated from their savings. Growth rate in the farm economy largely depends on the stock of capital built and plans of saving for further improvement. If increase in farm income, it is mostly utilized for increasing capital investment in farm organization, the growth rate in agriculture sector would be higher. If the increasing capital investments are spent on house hold expenditure without building up the necessary infrastructure, the economic development of agriculture might be hampered. Thus saving and investment in agriculture has assumed great significance in view of the Government’s policy wherein it is clearly stated that investment in agriculture would receive highest priority in the theory of employment in view of the convenience of the respondents. All possible care was taken in the collection of correct and reliable information through cross checking. Secondary data were collected from published materials i.e. Journals, Books, Bulletins, Technical Reports etc. and records of the blocks, District headquarters, Tehsil headquarters, District Information Office, District Statistical Office, Lead Bank Office, records of Lekhpalas etc.

Results and Discussion

It is evident from Table 1 that marginal farm households groups had negative savings with them because of higher family consumption expenditure than total income. The main constraints to the small holder farmers’ inability to save are inadequacy of income and fear of loss of their income [1; 2]. In case of small and large farm households, the savings level was of ₹ 117047.89 (1758.53 US $) per household respectively. Thus, it is observed that farmers of large farm holdings were able to save higher income in comparison to small farmers. This trend was due to the fact that marginal propensity to consume goes on decreasing with increase in incomes of farm families. Therefore, percentage of total income consumed decreases with the increase in farm size, resulting in comparatively higher savings on large farms.

Table 2 reveals that sample households of lowest income group had negative savings ₹ -2193.80 per farm household (32.96 US $). However, savings gave an increasing trend with increase in size of income groups. It was ₹ 25239.47 (379.20 US $) on medium and ₹ 141980.15 (2133.12 US $) per household on large income groups.

Investment Pattern of Sample Farms

Investment Pattern of Sample Farms was worked out and observed that majority of farmers were invested their money in form of (i) farm capital consisting of working capital and fixed capital (ii) non-farm capital and (iii) financial capital. The term “fixed capital” (durable capital) employed here is composed of capital invested on major farm equipments, irrigation structure, livestock and farm building etc. The working capital (non-durable capital) consists of capital spent on seeds, fertilizers, irrigation, insecticides, hired human labour, feed & concentrate, expenses on milch animals etc. The gross value of items of durable capital has been considered whereas investment in non-durable capital represents the purchase price of inputs. The level and pattern of investment on above mentioned forms of capital has been presented as follows:

Investment on Fixed Capital

It is evident from Table 3 that marginal farmers could not invest in fixed capital due to lack of savings with them. These farmers consid-
Table 1. Level of saving on sample farm households in ₹ per household

| Particulars | Size Group (in hectare) | Average |
|-------------|-------------------------|---------|
|             | Below 1 Hectare         | 1-2 Hectare | 2 hectare & above |
| 1. Total Income | 31750.42 | 477.02 | 63865.30 | 959.52 | 173551.31 | 2607.44 |
| (In US $)   | 477.37 (375.6 US $)     | 751.20 US $ | 1129.44 US $ | 173551.31 US $ |
| 2. Total family consumption expenditure | 31827.75 | 478.18 | 42645.51 | 640.71 | 56503.42 | 848.91 |
| (In US $)   | 478.18 (375.6 US $)     | 751.20 US $ | 1129.44 US $ | 56503.42 US $ |
| 3. Savings | (-) 77.33 | 1.16 | 21219.79 | 318.81 | 117047.89 | 1758.53 |
| (In US $)   | 1.16 (375.6 US $)       | 751.20 US $ | 1129.44 US $ | 117047.89 US $ |
| 4. Percentage of savings to income | - 0.24 | 33.22 | 67.44 | 34.64 |

(US $ as on April 14, 2016; 1 US $ = 66.56 ₹)

Table 2. Level of savings according to income groups ₹ Per household

| Particulars | Income Group (in ₹) | Average |
|-------------|---------------------|---------|
|             | Below ₹ 25,000   (375.6 US $) | ₹ 25,000 - 50,000 (375.6 - 751.20 US $) | ₹ 50,000 & above (751.20 US $) |
| 1. Total income per household | 31534.05 | 68179.44 | 192833.02 |
| (In US $)   | 473.77 | 994.28 | 2897.13 |
| 2. Total family consumption expenditure | 33727.85 | 40939.97 | 50582.86 |
| (In US $)   | 508.73 | 615.08 | 764.02 |
| 3. Savings per household | (-) 2183.80 | 25329.47 | 141980.15 |
| (In US $)   | 32.96 | 379.20 | 2133.12 |
| 4. Percentage of saving to income | (-) 6.96 | 38.14 | 73.62 |

(US $ as on April 14, 2016; 1 US $ = 66.56 ₹)

erated it as unnecessary investment (machinery & other fixed assets) because of their tiny holdings. While as per Saini and Kumar [3], livestock was the major contributor of total investment on marginal farms. In small farms, the emphasis was on purchase of milch animals with 43.80 per cent of total investment followed by irrigation works and farm buildings with 25.10 per cent and 13.68 per cent of the investment, respectively. While in case of large farms, investment on irrigation works was given first priority with 35.92 per cent investment followed by farm equipments and machineries 17.96 per cent, farm building 17.77 per cent milch cattle 15.50 per cent & land and its improvement 12.85 per cent. From the above analysis, it may be concluded that there was a great variation in the pattern of level of investment on fixed capital of different size group of farms holders. On an overall basis, it was found that amongst different fixed assets, investment on irrigation was given first priority, followed by purchase of milch animals, farms buildings and investment in land and its improvement. As per Ruedas and Guico (2021) women farmers save money in non-cash forms more than in n-cash forms. Cash forms include savings through banks, microfinance institutions, and money lending firms. Non-cash forms include agricultural pieces of machinery and equipment, livestock, land, children’s education [4].

Investment in Working Capital

The investment in working capital here included investment in cash inputs i.e. hired human labourer, tractor power, seeds, manure & fertilizers, irrigation, insecticides & pesticides etc. As per Table 4 it is obvious that investment on working capital amongst different cash inputs, hired human labourer accounted for highest share (29.44 per cent), followed by manure & fertilizers (22.33 per cent), hired power tractor (16.96 per cent), irrigation (13.61 per cent) and seeds (13.50 per cent) to total cash inputs. Nwibo and Mbam [5] have also found that farming households save and invest mainly for the purchase of improved varieties and breeds, agrochemicals and feeds. In another study, the institutional credit used on costly investments like drip irrigation, farm buildings and farm machineries in borrower farms, while the non-borrowers made lesser investments on these assets as compared to the borrowers [6]. As regards different size groups, almost a similar trend was observed in all respondents with high values on large farms, but for hired tractor power where it was lower on large farms as compared to small farms. The investment on different cash inputs in general gave an increasing trend with increase in farm size due to increase in size of farm business.

Investment in Non-farm capital

It is evident from the Table 5 that marginal farmers could not invest for non-farm physical capital because of no savings with them. Maximum investment by small farmers and large farmers group was made on vehicle items, followed by television radio etc. because these farmers were able to spend their surplus savings.

Financial Investment

Financial investment made by sample farmers consisted of investment in National Saving Certificate (NSC), Kisan Vikas Patra, Life Insurance Corporation Policies, deposits in commercial banks and post offices, etc. and in the form of ornaments, besides repayment of loans. Personal sources of information plays greater role as compared to official sources in bringing awareness regarding institutional investments [7].

Table 6 reveals that on overall basis, the sample farmers made a financial investment of ₹ 5149.00 (77.36 US $) in different schemes. They also kept some cash money with them to meet out day to day expenses. The marginal farmers group could not make investment in financial capital because of having no savings. However, they
managed to repay some part of their loans by managing current incomes. The small farmers invested a higher share in post office deposits, followed by LIC policies while large farmers preferred to invest in purchase of NSC and Kisan Vikash Patra, followed by deposits in post office, Banks and purchase of ornaments etc. While in Nigeria around 64 per cent respondent saved their money at home/in cooperative societies, only 5% population saved it with microfinance institutions and 0% population saved their money with commercial banks [8].

### Table 3. Pattern of Investment as fixed capital ₹ per household

| Particulars of Investment | Size group in hectare | Average (1.17 hectare) |
|---------------------------|-----------------------|------------------------|
|                           | Below 1 Hectare (0.52) | 1-2 Hectare (1.35) | 2 hectare & above (4.14) |
| 1. Lands and its improvement | - | 1377.50 (13.22) | 3570.00 (12.85) | 767.15 (13.00) |
| Average (₹) (In US $) | - | 4850.00 (43.80) | 4305.00 (15.50) | 1562.85 (12.62) |
| 2. Live stock (Milch cattle) | - | 437.00 (4.20) | 4987.50 (17.96) | 744.51 (12.62) |
| Average (₹) (In US $) | - | 2612.50 (25.10) | 9975.00 (35.92) | 1871.50 (31.72) |
| 3. Farm equipment and machinery | - | 1425.00 (13.68) | 4935.00 (17.77) | 955.05 (16.18) |
| Average (₹) (In US $) | - | 10412.00 (100.00) | 27772.50 (100.00) | 5901.06 (100.00) |

**Note:** Figures in parenthesis are per cent to total.

### Table 4. Investment pattern of working capital ₹ per household

| Variable input | Size group in hectare | Average (₹) (In US $) |
|----------------|-----------------------|------------------------|
| 1. Hired labourer | - | 1913.56 (28.75) | 6709.28 (100.80) | 41555.61 (624.33) |
| Average (₹) (In US $) | - | 2709.00 (40.70) | 6725.55 (101.04) | 30321.30 (455.55) |
| 2. Hired Tractor Power | - | 1511.26 (22.71) | 4175.31 (62.73) | 11075.74 (166.40) |
| Average (₹) (In US $) | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| 3. Seeds | - | 15643.42 (100.00) | 27772.50 (100.00) | 5901.06 (100.00) |
| Average (₹) (In US $) | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| 4. Manure & Fertilizers | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Average (₹) (In US $) | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Irrigation | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Average (₹) (In US $) | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Insecticides/ Pesticides | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Average (₹) (In US $) | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |
| Total Variable cost | - | 1662.64 (24.98) | 7142.84 (107.31) | 41271.52 (625.69) |

**Note:** Figures in parenthesis are per cent to total.

(US $ as on April 14, 2016; 1 US $ = 66.56 ₹)
highest investment of ₹ 48368.65 (726.69 US $) was made on working capital being 69.02 per cent. Our results are also in conformity of the Odoemenem et al [9]. A similar trend was observed in all income groups. However, it stood highest being 98.48 per cent in lowest income groups because of no savings for investment in other items. Small and large farmers groups invested in all the items in which it was highest in working capital (61.28 to 61.84 per cent), followed by investment in fixed capital (14.41 to 16.84 per cent), financial capital (12-14 per cent) and non-farm capital (7-12 per cent).

In case of sources of finance for investment, current income was found to be the main source of finance in all income groups which accounted for 49.70 to 94.79 per cent share of the total investment followed by savings which shared for 40.10 to 49.12 per cent in total investment.

Table 5. Investment in non-farm capital ₹ per household

| Particulars                                      | Size group in hectare | Average |
|--------------------------------------------------|------------------------|---------|
|                                                  | Below 1 hectare | 1-2 Hectare | 2 hectare & above |
| 1. Residential plots house etc.                  | -         | -           | -                  |
| Average (₹) (In US $)                            | -         | -           | -                  |
| 2. Furniture                                     |                |             |                    |
| Average (₹) (In US $)                            |    7.10    | 18.37       | 262.87             |
| 3. Vehicle (Car, Motor cycle, Scooter, Bicycle etc.) |                |             |                    |
| Average (₹) (In US $)                            |    32.64   | 177.66      | 2015.20            |
| 4. Television, Radio etc.                        |                |             |                    |
| Average (₹) (In US $)                            |    24.45    | 13.41       | 174.65             |
| 5. Other items                                   |                |             |                    |
| Average (₹) (In US $)                            |    4.00     | 13.41       | 174.65             |
| Total Non-Farm expenditure                       |                |             |                    |
| Average (₹) (In US $)                            |    68.19    | 339.58      | 59.15              |

(US $ as on April 14, 2016; 1 US $ = 66.56 ₹)

| Particulars of investment | Size group in hectare | Average |
|---------------------------|------------------------|---------|
|                           | Below 1 hectare | 1-2 Hectare | 2 hectare & above |
| 1. Kisan Vikas Patra & National Saving certificate etc. | -        | -           | -                  |
| Average (₹) (In US $)    | -         | -           | -                  |
| 2. Life Insurance Policies |                |             |                    |
| Average (₹) (In US $)    |    33.92    | 45.43       | 13.37              |
| 3. Deposits in banks     |                |             |                    |
| Average (₹) (In US $)    |    29.01    | 83.15       | 17.19              |
| 4. Deposits in post office |                |             |                    |
| Average (₹) (In US $)    |    39.81    | 68.62       | 17.68              |
| 5. Gold & Silver Ornaments |                |             |                    |
| Average (₹) (In US $)    |    39.33    | 68.62       | 17.68              |
| 6. Repayment of Loans    |                |             |                    |
| Average (₹) (In US $)    |    29.18    | 65.47       | 14.93              |
| Total investment          |                |             |                    |
| Average (₹) (In US $)    |    39.33    | 68.62       | 17.68              |

Note: Figures in parenthesis are per cent to total
(US $ as on April 14, 2016; 1 US $ = 66.56 ₹)
Table 7. Total Investment and source of finance according to income groups ₹ per household

| Particulars                        | Size group in hectare | Average (₹) |
|-----------------------------------|-----------------------|-------------|
|                                   | Below 1 hectare       | 1-2 Hectare | 2 hectare & above |
| A. Farm Capital                   |                       |             |                 |
| (i) Working Capital               |                       |             |                 |
| Average (₹)                       | (In US $)             |             |                 |
|                                  | 1. Savings            | 17074.12    | 256.52          |
|                                  |                       | 26800.07    | 403.35          |
|                                  |                       | 17900.38    | 61.29           |
|                                  | (In US $)             |             |                 |
|                                  | 2. Current Income     | -           | 7889.16         |
|                                  |                       |             | 111.02          |
|                                  |                       |             | (16.64)         |
|                                  | (In US $)             |             | 27772.50        |
|                                  |                       |             | 417.26          |
|                                  |                       |             | (14.41)         |
| B. Non-farm capital              |                       |             |                 |
| Average (₹)                       | (In US $)             |             |                 |
|                                  | 3. Borrowing          | 3221.22     | 48.40           |
|                                  |                       |             | (7.34)          |
|                                  |                       | 22602.50    | 339.58          |
|                                  |                       |             | (11.73)         |
| C. Financial Capital             |                       |             |                 |
| Average (₹)                       | (In US $)             |             |                 |
|                                  | 1. Savings            | 263.48      | 6411.66         |
|                                  |                       |             | 96.33           |
|                                  |                       |             | (14.61)         |
|                                  | 2. Current Income     | 2313.84     | 346.31          |
|                                  |                       |             | (12.02)         |
|                                  | 3. Borrowing          | 95791.53    | 1439.18         |
|                                  |                       |             | (49.70)         |
| Total Investment                 |                       |             | 29649.51        |
| Average (₹)                       | (In US $)             |             |                 |
|                                  | 1. Savings            | 17337.60    | 43882.11        |
|                                  |                       | 260.48      | (190.00)        |
|                                  | 2. Current Income     | 192739.50   | 2895.73         |
|                                  |                       |             | (100.00)        |
| Sources of finance               |                       |             |                 |
| 1. Savings                       |                       |             |                 |
| Average (₹)                       | (In US $)             |             |                 |
|                                  | 17596.73              | 1422.38     |
|                                  |                       | 94673.64    | (49.12)         |
|                                  | 2. Current Income     | 12772.56    | 266.87          |
|                                  |                       |             | (36.73)         |
| 3. Borrowing                     |                       |             |                 |
| Average (₹)                      | (In US $)             |             |                 |
|                                  | 16434.32              | 25785.13    |
|                                  | 246.91                | 387.40      |
|                                  | (94.79)               | (58.76)     |
|                                  | 95791.53              | 1439.18     |
|                                  |                       | (49.70)     |
|                                  | 29649.51              | 445.46      |
|                                  |                       | (61.30)     |
| (US $ as on April 14, 2016; 1 US $ = 66.56 ₹)

Conclusion

As per findings of the investigation, it is concluded that large farm holders were able to save higher income in comparison to small farmers while lowest income group have negative savings. In respect of investment, it was found that amongst different fixed assets, investment on irrigation was given first priority, followed by purchase of milch animals, farms buildings and investment in land and its improvement. Investment on working capital amongst different cash inputs, hired labourer accounted highest share (29.44 per cent), followed by manure & fertilizers (22.33 per cent), hired power tractor (16.96 per cent), irrigation (13.61 per cent) and seeds (13.50 per cent) to total cash inputs. Marginal farmers could not invest for non-farm physical capital because of no savings with them. The highest investment was made on working capital (69.02 per cent) by sample farmers. Current income was found to be the main source of finance in all income groups which accounted for 49.70 to 94.79 per cent of the total investment followed by savings which shared for 40.10 to 49.12 per cent in total investment.

About the authors:
Manoj Singh – Research Scholar, manojsinghsahoffice@gmail.com
Radhey Shyam Singh – Assistant Professor cum Junior Scientist, https://orcid.org/0000-0002-1918-3981, Corresponding Author, singhrscoh@gmail.com
Krishna Pratap Singh – Associate Professor

References
1. Osondu C.K., Obike K.C., and Ogbonna S.I. Savings, Income and Investment patterns and its determinants among small holder arable crop farmers in Umuahia Capital Territory, Abia State Nigeria. European Journal of Business and Innovation Research. 2015;3(1):31-70.
2. Radha Priya C., Gayathri. R. Demographics Persuade the Savings and Investment Pattern of Farmers - An Empirical Study. International Journal of Current Research and Modern Education. 2018;3(1):111-125.
3. Saini R., Kumar R. Determining the Factors Affecting Investment in Punjab Agriculture. Economic Affairs. 2020;35(4):511-520.
4. Ruedas M. Y.A.D.R., Guico M.J. Saving Pattern of Small-Scale Women Rice Farmers in San Jose, Occidental Mindoro. Journal of Asian Rural Studies. 2021;5(1):48-55. http://pace.unhase.ac.id/ojs/index.php/jars/article/view/2707
5. Nwibio S.U., Mbam B.N. Determinants of Savings and Investment Capacities of Farming Households in Udi Local Government Area of Enugu State, Nigeria. Research Journal of Finance and Accounting. 2013;4(15):59-66.
6. Kavitha B. Study on Investment Pattern in Farm Firms. Acta Scientific Agriculture. 2019; 3(4):287-293.
7. Gasti A.K. Savings and Investment Behaviour of Rural Household: an analytical Study of Households of Dharwad District of Karnataka State. Imperial Journal of Interdisciplinary Research. 2017;3(4):548-553.
8. Iheoma C.C., Chidiebere A.C. Savings Level and Investment Behaviour of Cooperative Farmers (Analysis and Prospects) in Jos East Local Government Area; Plateau State. Asian Journal of Economics, Business and Accounting. 2020;17(3):20-26. https://jnlageba.com/index.php/AJEBA/article/view/30262
9. Odoozemem I.U., Eziete J.A.C., Akerele S.O. Saving and Investment Pattern of Small-Scale Farmers of Benue State, Nigeria. Global Journal of Human Social Science Sociology and Culture. 2013;13(1):7-11.