# Family Income and Cash Flow of Rural Households in South East Nigeria: A Comparative and Gender – Based Analysis

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**Abstract**

This study focused on the income generating capacity of farm family's own resources and examined the vulnerability to financial risk among the remote and peri-urban farming systems of Imo state. Primary data was collected using the farming and rural systems approach to randomly select and interview 120 households. Descriptive statistics and Mann whitney test were used in assessing between group differences while regression analysis was used to test the determinants of family income spread within the households. The results showed that the farming systems differed significantly in terms of rewards to resource use and efficiency. It also showed that remotely located households were more likely to be vulnerable to financial risks. A comparison of Male and Female Headed Households showed that the households had similar income generating potentials but with the cash flow analysis a safe conclusion may be reached that Female Headed Household were more financially unhealthy.

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# INTRODUCTION

Poverty reduction is a difficult challenge facing Nigeria and it is the major hurdle that must be crossed in the pursuit of a sustainable economic growth. Poverty is known to be entrenched in the rural areas particularly because of the sharp seasonality in the flow of production, income, and employment opportunities in the rural sector. Also the relative shortage of social and economic infrastructure in the rural areas as compared to the urban sector encourages it. Efforts made at poverty reduction by the Federal Government have not yielded the expected results because such have been ad-hoc, uncoordinated and fire brigade in approach. For this reason even though the economy seems to be growing, the gap in income distribution is widening (Oluwatayo, 2008).

Income inequality may be conceptualized as a dispersion that shows the welfare status of a population. It refers to the difference that exists in the income received by individuals across a population or group (e.g Nigeria, gender). Since it also indicates the dimensions of poverty, it has become a major focus in development research. Oluwatayo (2008) in his study surmised that, the correlates of welfare status include, farm size, marital status, income earned and household size. Ajani and Babalola (2009) showed that an increasingly high income gap within the rural areas has a negative impact on welfare status while Ogunyemi *et al.,* (2011) linked inequality with income polarization and possible disappearance of the middle class in different geopolitical zones of the nation. The general recommendation from Oluwatayo (2008), Ajani and Babalola (2009) and Ogunyemi *et al.,* (2011) is that the gaps can be narrowed either by an integrated approach to rural livelihood development or upgrade of technologies for agricultural production.

The studies cited and several others treat the rural environment as being completely homogenous and one requiring a homogeneous intervention. While this has its merit, more information that can enhance a targeted poverty alleviation program is required. This study focuses on considering the rural environment as being heterogeneous and estimates differences in the income generating ability of the farm-family using its own resources such as land and labor. It also tests the factors that influence the spread of family income within the household. A successful policy intervention program will require not only the knowledge and understanding of the existence of the income gaps but also the movement of cash in and out of the farm households at regular intervals. Thus, this research rather than focus on inequality again, makes an attempt at defining the cash flow situation of the farm families and examines it for possible information that will improve policy interventions. The cash flow of a household can help determine its financial health annually or at regular intervals such that external assistance can be prepared before those periods and help farm families ahead hedging on own resources. A gender perspective is given by making a comparison of male and female headed households in remote farming systems.

The objectives of this research may then be summarized as:

• To characterize the socio-economic status of households in remote farming systems and those farming systems which are close to towns (i.e Peri-Urban).

• Examine and compare the sources of family income of the different farming systems

• Examine and compare the annual cash flow of the farming systems

• Investigate the factors that influence family income in the farming systems.

This research is necessitated by the fact that detailed information about the household dynamics of periodic income generation and use is required. Such information if available will be useful in policy planning and administration in the rural areas. As such, it is expected that results from this study will assist policy makers in planning and achieving the objective of sustainable income increase in the agricultural sector of Imo State's economy.

## MATERIALS AND METHODS

The Farming and Rural Systems Approach was used in this study. The approach focuses on the analyses of the development of a system, the development of the solutions to the problems and measures the future impact of change on the system. That is, it provides the philosophy, the concept and strategy for developing and introducing

solutions to decision making bodies at the micro, meso and macro levels (Doppler 2002).

## Description of the Study Area

The research was carried out in Imo state, south-east Nigeria. The east occupies a land area of approximately 7,861,200 ha of land and has a population of 25,652,036 people. This translates to an average land area of 0.31ha/ person (Nwajiuba, 2002). Though the states are reasonably urbanized, the majority live in rural areas. Imo State was chosen from the region based on the knowledge of the prevailing situation.

Imo state, occupying a total land area of 5,530 km², is one of the states that make up the south-eastern part of Nigeria. According to the 2006 population figures, 2, 032, 286 males and 1, 902, 613 males, that is a total of 3, 934, 899 people, live in the state. It has a population density of about 230 people per square kilometer. It is bordered by Abia State to the east, Rivers to the South and West and Anambra to the North. It consists of coastal lowlands to the east of Niger River. The state has original tropical rainforest vegetation. The state is known to be one of the low income states in Nigeria. The average farm income in some of the agricultural zones as at the year 2002 has been estimated to be about N60, 197.81 per annum and N7,524.73 per capita income (Ibekwe 2002). One of the main objectives of the State's Ministry of agriculture is to have a sustainable increase in the income of rural households in the year 2011 and beyond. The state has great potentials for high income generation in the agricultural sector because it has the manpower and the natural resources required. This research can enhance the achievement of a sustainable income increase by providing basic information for policy planning and design.

## Data Sources and Sampling Technique

The farming and rural systems approach was used in the study. Imo state was purposively chosen because of the knowledge of the prevailing situation but a multi stage random sampling process was used to select the final respondents. The state is known to have 27 Local Government Areas based on its former geographical structure.

Four local government areas were randomly selected; after which two villages were randomly selected from each LGA. From the two villages selected, a total of 30 households were chosen. The total sample size was 120 households. The samples were drawn from the list of names (sometimes with addresses) obtained from the village leader or his representative. The survey was carried out with the use of a structured questionnaire though the administration was participatory in approach. The questionnaire was designed to give information on different aspects of respondent's lives such as income generating activities, socio economic data, production activities, household expenditure etc.

## Methods of Data Analysis

A Hierarchical Cluster Analysis was carried out to get the natural groupings or clusters among the sample units which are homogenous within and heterogeneous to each other. The results led to two major farming systems upon which the descriptive and comparative analyses were based. Mann-Whitney-U test was used to detect and quantity the farming class means differences. The Mann-Whitney test is a non-parametric test and it is preferred because a normal distribution of quantitative variables cannot be assumed. Multiple regression analysis was used to test the factors influencing the spread of family income among the households. The farming systems identified are:

• Peri-Urban Farming Systems (P-UFS): These are located in villages which are close to urban areas and cities such as Owerri and Umuahia with more possibilities for off-farm income. There are also major access roads to these villages. The population density is low compared with the other regions.

• Remote Farming Systems (RFS): These are located in more remote areas and are densely populated. These were further divided into Male Headed Household and Female Headed Households.

## RESULTS

### Socio-Economic Characteristics

The Remote Farming Systems had small household size of five, with approximately equal number of male and female members who were

economically active. The dependency ratio was relatively low but the number of female headed household was high. The average age of the household head was approximately 59 years and a fifteen year gap was noticed when compared with the age of their spouses. Interestingly, educational level was found to be low with a maximum of 6 years for both the household heads and their spouses.

The Peri-Urban Farming System had an average family size of 5 with more male members who are capable of making economic contributions to the family. They also had a high dependency ratio. The average age of the household head was approximately 62 years while that of the spouse was 45. The level of education of the men and women were also equal and above primary school level. The major difference between the two systems was found in the educational attainment of both heads and their spouses. The P-UFS were more educated, that is, spent more years receiving formal education than those in the remote locations (Table 1).

**Farm Income**

The farm's ability to provide net revenue within a given period of time (one year) using the resources that belong to the farm family is what is referred to as farm income. The simple computation is to deduct all expenses which are not directly related to family resources from the revenue.

The results showed that the farming systems were mainly crop based since it contributed the highest to the farm income. The rents obtained

from land did not contribute significantly to farm income. But between the two systems, rent from land was significantly different implying that the RFS practiced sharecropping or rented out part of their limited land for immediate cash. The P-UFS had more income from livestock and trees (fruits, leaves or bark) compared with the RFS. But its contribution to farm income in the two systems was insignificant. Farm expense was significantly different which could have been caused by the expenses made on livestock production by the P-UFS. It could imply that the P-UFS invested more on livestock than the RFS. But also the high value could have been driven by the economic situation, environmental conditions and or human resource skills of the Peri-Urban Systems.

The farm income of the systems was significantly different revealing that the P-UFS had better rewards for their family resources. As a measure of resource use efficiency, farm income showed that the RFS were more efficient in terms of land resource use while P-UFS were more efficient in terms of labor use (Table 2).

**Off-farm Income**

Grueninger (2001) defined off-farm income sources as all activities which take place outside the family's own responsibility of farm business. Its importance is in the fact that it makes cash available for farm investments; as such it is a major contributor to family income.

Table 3 below shows the contributors to households' off-farm income. The household heads were the major contributors through regular

Table 1: Household Socio-Economic Characteristics in Remote and Peri-Urban Farming Systems of Imo State

| Items | Remote Farming Systems (n=57) | Peri-Urban Farming Systems (n=54) |
|---|---|---|
| Family Size | 5.74 | 5.61 |
| Mean number of: Male | 2.704 | 3.059 |
| Female | 3.037 | 2.549 |
| 14-60 years old Male | 2.17 | 2.157 |
| 14-60 years old Female | 2.481 | 1.882 |
| Dependency Ratio1 | 0.215 | 0.388 |
| % distribution of Female head families | 30.9 | 5.9 |
| Age, Household Head | 58.67 | 61.75 |
| Spouse | 44.50 | 46.59 |
| Education level, Household Head | 6.69** | 8.61** |
| Spouse | 6.03** | (8.09)** |

Notes * Significant at 90% confidence interval ** Significant at both 95% and 90% confidence interval
Values in parenthesis are standard deviation All tests are Mann-Whitney test

Table 2: Farm Income of Remote and Peri-Urban Farming Systems of Imo State

| Mean value of Farm Income | Remote Farming System | Peri-Urban Farming System |
|---|---|---|
| **Revenue** | | |
| Crop | 23,626.02 | 21,537.33 |
| Livestock (stock) | 679.50 | 867.45 |
| Rent on land | 471.70** | 0** |
| Livestock | 2056.60 | 6102 |
| Trees | 849.43 | 2,176.47 |
| **Total** | **27,683.25** | **30,683.25** |
| **Expenses** | | |
| Crop | 4336.98 | 3212.75 |
| Livestock | 356.04* | 9331.37* |
| **Total** | 4693.02 | 12,544.92 |
| **Farm Income** | 22,990.23** | 36,801.88** |
| | (±37222.41) | (±76439.1) |
| Per ha of land | 37,248.55 | 27,060 |
| Per unit of family labour (man day) | 22.31 | 44 |

Notes*   Significant at 90% confidence interval **      Significant at both 95% and 90% confidence interval
All values in parenthesis are standard deviation  All tests are Mann –Whitney tests.

waged jobs and small scale businesses. The spouses of the household heads ranked third in income generation while the least source of off-farm income came from transfers and other cash gifts. The significant difference occurred mainly with transferred income sources implying that the RFS were more dependent on other people and quite likely resource poor.  The value of the farm income relative to off farm income suggested strongly that time and labor resource were regularly being allocated away from the farm and as such down played its role in the economic success of the households (Table 3).

**Family Income**
   Family income is the sum of off-farm and farm income. It represents the income generating power of the family owned resources and reflects the decision-making abilities of the family.
   Off farm income made up 90 per cent of the family income of the RFS and contributed 80 per cent of that of the P-UFS. The central point is that off farm income keep the farming systems going. Again as a measure of resource use effi-

Table 3: Sources of Off-Farm Income Among Remote and Peri-Urban Farming Systems In Imo State

| Sources of Income (₦/ year) | Remote Farming System | Peri-Urban Farming System |
|---|---|---|
| Household Head | 94 649.81 | 156129.41 |
| | (±150942.22) | (±251249.84) |
| Business/trading | 383095,09 | 228631.73 |
| | (±2310848.36) | (±76460510) |
| Spouse | 51928.30 | 75905.88 |
| | (±124646.50) | (±127743.11) |
| Transfers | 16733.96* | 8849.02* |
| | (±58078.41) | (±20055.34) |
| **Total Off farm** | **301 908.30*** | **472,761.15*** |
| | **(±764500,69)** | **(±870204.69)** |

Note:*   Significant at 90% confidence interval **      Significant at both 95% and 90% confidence interval.
Values in parenthesis are standard deviation. Tests are Mann –Whitney tests. ₦ = Naira.

Table 4: Family Income and Returns to Resources Among Remote and Peri-Urban Farming Systems of Imo State

| Item | Remote Farming System | Peri-Urban Farming System |
|------|----------------------|---------------------------|
| Total Off farm | 301 908.30 | 472,761.15 |
| | ($\pm$764500,69) | ($\pm$870204.69) |
| Total Farm Income | 20 859.19* | 36 801.88* |
| Family Income | ($\pm$37222.41) | ($\pm$54588.423) |
| | 339 501.45* | 581412.05* |
| Per unit of land | ($\pm$815181.961) | ($\pm$887142.167) |
| Per unit of labour | 1,794,709 | 1,045,762 |
| Per person | 112,194.5 | 274,198.1 |
| Off-farm Income  as % of family | 65,654.5 | 124,139.1 |
| income-ratio of totals | 89 | 81 |

Note:*   Significant at 90% confidence interval **      Significant at both 95% and 90% confidence interval. Values in parenthesis are standard deviation. Tests are Mann –Whitney tests. ₦ = Naira.

ciency the RFS were more efficient in terms of land use while the P-UFS were more efficient with the use of labor. But as a proxy of what trickled down to individual household members, the P-UFS households were better off (Table 4).

## Factors Influencing Family Income

Results from the previous sections showed clearly that having a steady income from several sources gave the households the ability to meet their needs. It is however not clear that the income earned trickled down to each member at equal rates. As such there could be factors that influence its reach within the households in the two systems. The assumption is that socio-economic factors particularly those related to access, control and use of resources could affect the spread and hence use within the households (Akinsanmi, 2005a). A multiple regression analysis was carried out here because it helps to determine the effect of changes in the explanatory variables on the dependent variable.

## Model Specification

The implicit function is given as:
$$Y = f(X\ldots\ldots..X, \mu) \qquad (i)$$
Y = Average family income
X …………X = explanatory variables
μ = error term

Two functional forms were tried on the regression model analysis in order to get the one that best fits the data. These are linear and exponential functions. The general forms of these functions are specified below:

### Linear function:

$$Y = a + \sum_{I=1}^{n} bixi \qquad (ii)$$

### Exponential function:

$$Ln\ Y = a + b_1X_1 + b_2 X_2 + b_3 X_3 + b_n X_n + \mu \quad (iii)$$

The linear regression model was chosen in this case based on the $R^2$. The functional form is given below:

In which:  Y = Dependent variable (family income per individual)

a = Constant term

$b_i$ = Coefficient of variable $i^{th}$

$x_i$ = Independent variable $i^{th}$

The explanatory variables used are:

$X_1$    Farm size

$X_2$    Off-farm Income

$X_3$    Hours in off farm Job (men)

$X_4$    Hours in off farm job (women)

$X_5$    Expenses on Livestock

Apart from off-farm income being very significant in both systems, the time-use of the female (spouse) in off-farm income sources was significant in the P-UFS. The implication here is that the ability to generate more income from non-farm related activities in the RFS holds the potential of raising welfare. In the P-UFS, the allocation of female labor to non-farm activities

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Table 5: Factors Determining Within-Household Income Spread Among Remote And Peri-Urban Farming Systems of Imo State.

| Independent variables | Coefficients Remote Farming System (a) | Coefficients Peri-Urban Farming System (b) |
|---|---|---|
| Farm size | .128 | .134 |
| Off farm income | .721** | .652** |
| Hours in off-farm job (men) | .105 | .125 |
| Hours in off-farm job (female) | .113 | .168** |
| Livestock expenses | -.020 | -.050 |

Notes: Dependent Variable: Family Income/person , * Significant at 90% confidence interval
** Significant at both 95% and 90% confidence interval. (a) R² = 60 (b) R² = 50

could improve household welfare (Table 5).

**Family's Annual Cash Balance**

Ideally, the objective of a liquidity analysis is to ensure that cash is available when there is an urgent requirement (Doppler 2002). Its analysis deals with the cash requirements in a farm or family at different periods over time and the availability of cash in these periods. However in this case an annual cash balance was computed since the varying seasons overlapped and the data could not be easily separated into compact seasons.

The results showed that savings and credit facility given to friends and relatives boosted the cash balance at the end of a season. It was clear from the analysis that the Peri-Urban systems were able to utilize the opportunities for off-farm income; invest more on the farm and save regularly. This gave an indication that they could have a better living standard compared with the remote farming systems whose results showed that they were likely to be more dependent on resource owners (Table 6).

**A gender perspective**

In this section, the Remote Farming System was further divided into Male Headed Households (MHH) and Female Headed Households (FHH) after which similar investigations as discussed in the previous sections were carried out. The results are discussed in the following paragraphs.

Farm Income: The households depended on

Table 6: Household Annual Cash Balance for Remote And Peri-Urban Farming Systems

| Item | Remote Farming System | Peri-Urban Farming System |
|---|---|---|
| **Inflow** | | |
| Farm and Tree crops | 25,532.05 | 29,815.80 |
| Savings | 6592.63** | 18,431.67** |
| Loans in the last 4 months | 3 351 93* | 1 705. 96* |
| Money added to savings | 7805.56** | 15,629.85** |
| Off-farm Income | 268,090.74* | 472,761.15* |
| **Total** | 340,532.69* | 578,773.47* |
| | | |
| **Outflow** | | |
| Amount lent out | 2527.81 | 2231.41 |
| Food expenses | 5756.57 | 12,473.53 |
| Non food expenses | 47,759.70 | 100,613.10 |
| Education | 20076.86 | 39,965.14 |
| Farm Input expenses | 3237.85** | 18,577.00** |
| **Total** | 82,670.10** | 173,863.01** |
| | | |
| **Cash balance** | 257,862.59* | 404,910.46* |

Notes*   Significant at 90% confidence interval **      Significant at both 95% and 90% confidence interval
All values in parenthesis are standard deviation  All tests are Mann –Whitney test

the farm for a significant portion of their income. Crops in particular contributed a major share in both groups but. Since the households were resource poor, the farm was not given enough capital and technological investments that could boost its productivity. The groups differed only in terms of investment in livestock management. This was mainly free range among the female headed households so little in-terms of cash expense was required (Table I).

### Off-Farm Income

One of the peculiarities of the study was that the FHH had salaried jobs like teaching so they earned more on a yearly basis from these than their male counter parts. There was no significant difference between the two groups though MHH had higher mean figures. Adult family members also generated income which could contribute the nutrition and health situation of the families. Male headed households however, thrived more in enterprises and seem to have more multiple sources of income (Table II).

### Family Income

As a measure of family resource use efficiency, the returns to individuals or labor were not significantly different for the two household groups. But the MHH were more dependent on non farm income (Table III).

### Annual Cash Balance

The two groups had similar inflows but the Male Headed Household had more savings. The major difference in outflows occurred in the expenses on education. This is logical because most of the Female Heads were widows and probably had no school aged children. There was a significant difference in the end of year balance indicating that the MHH were better off (Table IV).

### CONCLUSIONS AND RECOMMENDATIONS

The study showed that crop production was the major contributor to farm income as such the production limitations should be reduced to increase its viability. Livestock has the potential of becoming a major contributor but evidence from the results indicate that it is not being tapped. Its production could be increased by making a com-

bined loan-capacity building scheme available. The two systems depend mainly on income from non-farm activities to make cash available for family expenses. In addition to non farm income, the RFS depend on financial transfers which are not usually stable. Hence, the RFS are more vulnerable to income vagaries than the Peri-urban households. This situation can only be mitigated by active development efforts in rural infrastructure which will link the two systems to market opportunities. If the female members of the P-UFS are given more financial independence, access to own resource and family income could increase with a long term positive impact on household welfare. There already exists an unconventional form of savings (loans are extended to friends and relatives and collected in time of need) which ensures a positive cash balance in a given economic period. But this 'traditional model' should be replaced with an efficient microfinance scheme that can make consumption and production loans available based on the cash flow situation of the farm families. The comparative analyses of the male and female headed households suggest that poor households are likely to have similar rewards for their resources irrespective of the gender of the heads of households. However, the female headed households could be less financially healthy and more vulnerable for other socio-economic/cultural reasons. Thus, asset growing interventions will be required for such farming systems but cognizance should be taken of socio-economic/cultural factors that guide resource ownership, use and control.

Apart from these, it can be safely concluded from the research that location influenced family income and financial health hence the poverty and welfare status of rural households. These could account for the widening gaps and must be considered in policy development and implementation. Based on the results of this study, interventions that will encourage and support livestock management while giving room for women to take off farm opportunities will enhance the family income. Access to improved technology and agribusiness opportunities could fast track development in both areas. However, the dynamics of cash inflow and out flow needs

further understanding for a meaningful design of periodic interventions.

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## *Appendix*

Table I: Farm Income of Male and Female Headed Households in Remote Locations of Imo State

| Mean value of farm Income | Male Headed Households (n=37) | Female Headed Households (n=20) |
|---|---|---|
| **Revenue** | | |
| Crop | 23112.70 | 22831.75 |
| | (±45382.76) | (±37475.39) |
| Rent received | 540.54 | 250.00 |
| | (±1574.00) | (±1118.034) |
| Livestock | 2587.84 | 677.50 |
| | (±4044.207) | (±1341.88) |
| Trees | 676.22 | 1000.00 |
| | (±2348.152) | (±4472.14) |
| **Expenses** | | |
| Crop Expenses | 5053.51 | 3642.00 |
| | (±8344.51) | (±5990.88) |
| Livestock Expenses | 510.00** | .00** |
| | (±1098.67) | (±.000) |
| **Farm Income** | 22611.68 | 21261.75 |
| | (±41830.193) | (±35853.60) |

Notes:*Significant at 90% confidence interval **    Significant at both 95% and 90% confidence interval
All values in parenthesis are standard deviation  All tests are Mann –Whitney tests.

Table II: Off-farm Income Generation of Male and Female Headed Households in The Remote Locations, Imo State 2003

| Sources of Income | Male Headed Households (n=37) | Female Headed Households (n=20) |
|---|---|---|
| Household head | 85548.65 | 104100.00 |
| | (±124494.09) | (±183454.07) |
| Business/trading | 520530.81 | 52220.00 |
| | (±2764454.34) | (±117017.43) |
| Spouse /Adult Member | 58410.81 | 35550.00 |
| | (±136781.009) | (±85897.41) |
| Transfers | 18200.00 | 10675.00 |
| | (±67770.106) | (±23359.12) |
| **Total Off Farm Income** | 335625.41 | 191870.00 |
| | (±902224.681) | (±235419.94) |

Notes:*Significant at 90% confidence interval **    Significant at both 95% and 90% confidence interval
Values in parenthesis are standard deviation Tests are Mann –Whitney tests.

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Table III: Family Income and Returns to Resources Among Male and Female Headed Households in The Remote Locations of Imo State

| Item | Male Headed Households (n=37) | Female Headed Households (n=20) |
|---|---|---|
| Farm Income | 22611.68 | 21261.75 |
| | (±41830.193) | (±35853.60) |
| Off-Farm Income | 335625.41 | 191870.00 |
| | (±902224.681) | (±235419.94) |
| Family Income | 376437.08 | 223806.75 |
| | (±964588.35) | (±233645.94) |
| Family Income Naira/year | 376437.08 | 223806.75 |
| | (±964588.35) | (±233645.94) |
| Family Income Naira/ unit of labour | 115748.75 | 117963.95 |
| | (±197012.08) | (±122612.25) |
| Family Income Naira/ person | 68303.87 | 65995.98 |
| | (±121319.35) | (±65351.62) |
| Off farm Income as % family income | 90.09 | 70.52 |

Notes:*Significant at 90% confidence interval **        Significant at both 95% and 90% confidence interval
Values in parenthesis are standard deviation Tests are Mann –Whitney tests.

Table IV: Household Annual Cash Balance of Male and Female Headed Households in The Remote Locations of Imo State

| Item | Male Headed Household (n =37) | Female Headed Household (n =20) |
|---|---|---|
| **Inflows:** | | |
| Farm and Tree Crops | 26376.76 | 24509.25 |
| Savings | 9081.08 | 5400.00 |
| Loans in the last 4 months | 3270.32 | 3000 |
| Money added to savings | 11283.78 | 200.00 |
| Off-farm Income | 335625.41 | 191870.00 |
| **Total** | 385637.35 | 224979.25 |
| | (±105388.33) | (±309911.60) |
| | | |
| **Out flow:** | | |
| Amount lent out | 2743.24 | 2045.81 |
| HH Food exp | 10727.43 | 6393.50 |
| HH Non Food Exp | 50614.76 | 43039.8 |
| Education | 22211.89* | 13736.01* |
| Farm Input expenses | 5563.51 | 3642.00 |
| **Total** | 91860.83* | 68857.12* |
| | (±138583.61) | (±88016.18) |
| **Cash Balance** | 293776.52* | 156122.13* |
| | (±120588.33) | (±198963.87) |

Notes: *Significant at 90% confidence interval **        Significant at both 95% and 90% confidence interval
All values in parenthesis are standard deviation  All tests are Mann –Whitney tests.

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