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## ***CASH FLOWS OF RURAL HOUSEHOLDS: A MICRO LEVEL STUDY IN BANGLADESH***

**W. M. H. Jaim and M. Lutfur Rahman\***

### **ABSTRACT**

Income-expenditure and investment-disinvestment behaviour of different groups of households in a small rural community of Bangladesh has been investigated by cash flow approach. Both cash inflows and outflows of rich and middle households were much higher than those of poor and landless. The latter two groups were heavily dependent on disinvestment of assets, loans and gifts for their survival. Although they spent most of the income for consumption, particularly for foodgrain, their level of consumption was very low. While the poor and landless households felt the need for credit throughout the whole year, the rich and middle households felt that need seasonally, particularly in hero season. To reduce rural poverty, credit programmes for the rural poor should be designed for both on-farm and off-farm activities.

### **I. INTRODUCTION**

It is often maintained that the saving and consumption behaviour of a rural household is significantly influenced by the source of income and other cash receipts (Houthaker 1965 ; Mizoguchi 1967). However, in the economic literature, there exist some confusions and controversies about the definitions used for income, expenditure, saving and investment made by rural households in developing countries (for a detailed discussion on this see, Alamgir 1967). The main *confusion* seems to be centered around whether borrowing, dis-saving, disinvestment of assets and net current transfers should be included in gross income of farm households or not. Many of the household income and expenditure surveys included them in the income concept (GOP 1964 ; Nandlal 1972). However, some of the studies on saving and investment excluded those items from the income concept (NCAER 1965 ; Bergan 1967).

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\*Respectively Assistant Professor, Department of Agricultural Economics and Associate Professor, Department of Agricultural Finance, Bangladesh Agricultural University, Mymensingh.

There is another concept known as cash flow approach which takes into account the entire cash stream coming into and going out of the farm family. It considers not only the incomes from farm and off farm sources, but also borrowing, drawing from savings, gifts and donations received are considered in the cash inflow stream. Similarly, operational expenditures for farm and non-farm purposes, family expenditures, investments, savings, lending, gifts and donations made are included in the cash outflow stream. A cash flow statement gives a more complete accounting of debt transactions by showing principal payments and proceeds of new loans including interest transactions. It also more fully reflects purchases and sales of capital items such as breeding livestock, machinery and real estate. Expenses associated with capital items are shown on the income statement as a relatively constant annual depreciation allowance. However, the full amount of any capital sales or purchases is shown in the cash flow statement covering the period in which they occur. Thus it is clear that although all the items constituting income of the household are included in the cash flow basket, but not all the items in the cash flow basket can be regarded as income items.

The purpose of this article is to show the type and nature of cash receipts and expenditures of rural households, and also to identify the contributing factors for their saving, borrowing, investment and disinvestment decisions. In describing the income-expenditure and investment-disinvestment behaviour of rural households the present study follows the cash flow approach. The cash flow approach, by considering all the cash receipts and outflow of funds, thus not only helps to avoid the above mentioned controversies, but also helps to explain many of the 'whys' and 'hows' of income expenditure and investment-disinvestment behaviour of rural households in a developing country. Many agricultural credit institutions and private lenders have experienced situations where a borrower has good net worth and a high net farm income, but is constantly slow in meeting his financial obligations. In many cases this rather perplexing situation can be diagnosed and resolved by analysing the cash flow of the business. Even in the absence of a financial problem; a cash flow analysis helps in predicting sources and uses of funds just as plans for crop and livestock programmes help to predict requirements for labour, materials, feed, seed, etc.

Studies on socioeconomic aspects of rural families usually give a rough estimate of their income and expenditure depending upon wide scale collection of data from large number of informants, and usually relying upon a single visit to any particular family. For such type of data, the main drawback is that informants are required to provide detailed past data from their memories and with full sincerity on the part of both the respondent and investigator, this can not be achieved with accuracy. In contrast, this study is based on weekly visits which overcome this problem and provide detailed information of income-expenditure and investment-disinvestment behaviour of the rural households.

In section II, the sources of data are discussed. Farm income and other cash inflows are presented in section III, while farm expenditures and other cash outflows are

discussed in section IV. In Sections V and VI, patterns of current expenditure by household groups, and quarterly cash inflows and outflows are discussed respectively. Concluding observations are made in Section VII.

## II. DATA SOURCE

The study was conducted in a village called Bamna under Islampur Upazila of Jamalpur district. The soil condition, topography and cropping pattern of this area are representative of the district. Different types of irrigation technologies were found in the area. Farmers used Hand Tubewell (HTW) for irrigation for about 10 years and that of Deep Tubewell (DTW) since 1975. They started growing HYV wheat since 1977. Out of four *Paras*<sup>1</sup> in the villages two adjacent *Paras* were selected for the study. Irrigation by DTW and HTW covered 24 percent of the total cultivable land of the study area.

There were 144 households in these two *Paras*. On the basis of access to agricultural land and the broad idea of surplus, subsistence and deficit farmers, the rural households were at first classified into four groups. These groups were (i) landless (Without agricultural land) (ii) poor farmers (upto 2.0 acres of agricultural land), (iii) middle farmers (2.01-4.0 acres of agricultural land) and (iv) rich farmers (above 4.0 acres of agricultural land). They represented 40 percent, 31 percent, 18 percent and 11 percent of the rural households respectively. Two households from each category i.e., eight households in total, were selected purposively for indepth information. The socio-economic characteristics of the sample households compared to other households in the rural community are presented in Table 1.

Although at the beginning, it was intended to collect data throughout the 52 weeks of the year, unfortunately due to certain reasons data for the last four weeks could not be collected. Thus the study is based on data of 48 consecutive weeks, starting from mid-October, 1979 to mid-September 1980. One trained investigator having Masters degree in Social Science was engaged for collectin of the data. He stayed in the village throughout the whole period of investigation. Out of 8 families, 3 families (2 rich and 1 middle) who had literate persons in their families recorded detailed information regarding their incomes and expenditures. However, their recorded information were cross-checked while collecting data at the end of each week. Others provided necessary information from their memories. For accuracy, sometimes more than one visit (usually after the two village market days) in a week were made to the remaining five families.

1. Para means a neighbourhood or portion of a village, often having a degree of separate identity and social organization.

**TABLE 1. SOCIOECONOMIC CHARACTERISTICS OF HOUSEHOLDS IN THE STUDY AREA**

Characteristics	Household Groups				
	Rich	Middle	Poor	Landless	All
<b>AVERAGE FARM SIZE (Acres)</b>					
Sample Households	7.39	3.27	1.35	—	4.00 <sup>a</sup>
All Households	5.33	2.89	1.17	—	3.13 <sup>a</sup>
<b>AVERAGE FAMILY SIZE (No. of persons)</b>					
Sample Households	9.50	9.50	6.50	4.50	7.50
All Households	10.31	7.80	5.64	4.45	6.06
<b>AVERAGE VALUE OF LIVESTOCK AND POULTRY (Tk.)</b>					
Sample Households	6915	5958	2588	—	3865
All Households	6987	3206	1851	291	2029
<b>AVERAGE DRAFT ANIMAL FOR CULTIVATION (No.)</b>					
Sample Households	2.50	2.00	1.00	—	1.38
All Households	2.50	1.40	.80	0.10	0.80

a. Average farm size.

### III. FARM INCOME AND OTHER CASH INFLOWS

Table 2 presents different sources of cash inflows and outflows by household groups. It can be seen from the table that total cash inflows of rich and middle farmers are considerably higher than those of poor farmers and landless. For example, compared to poor farmers, total cash inflows of rich and middle farmers were more than 5 and 4 times higher and those of landless, these were more than 12 and 11 times higher respectively. Agricultural production provided the major portion of income. It contributed about 62 percent of total income for rich farmers and about 45 percent for middle and poor farmers (Table 3). For landless, the main source of income was agricultural wage which contributed about 49 percent of their total income (Table 3). The figure is very close to the findings of a study which found that contribution of agricultural wage to total income for the landless was about 47 percent (Jain 1982).

TABLE 2. AVERAGE FARM INCOME, EXPENDITURE AND OTHER CASH INFLOWS-OUTFLOWS BY HOUSEHOLD GROUPS

(TAKA PER FARM)				
Sources	Rich	Middle	Poor	Landless
<b>INCOME</b>				
Farm and non-farm income	30,515	23,892	4,508	1,724
Other Receipts (Disinvestment, loan, etc )	3,678	7,708	2,236	1,093
Total cash inflows	34,193	31,600	6,744	2,817
<b>EXPENDITURE</b>				
Working capital expenditure	6,041	7,282	981	—
Capital expenditure	5,541	8,140	176	25
Loan	494	1,240	513	180
Consumption expenditure	12,297	12,766	4,152	2,534
Personal expenditure	1,655	481	88	47
Total cash outflows	26,026	29,909	5,910	2,786
<b>PER CAPITA INCOME/EXPENDITURE</b>				
Per capita farm and non-farm income	3,212	2,515	694	483
Per capita expenditure on food	1,037	1,054	546	504
Per capita expenditure on non-food	257	289	93	59
Per capita personal expenditure	174	51	14	11
Per capita expenditures on consumption and personal items	1,468	1,394	653	574

It can be seen from Table 3 that the other important sources of income for rich farmers were non-farm jobs (14 percent) followed by miscellaneous sources (13 percent). For rich farmers the miscellaneous sources particularly referred to income derived from wife's property which was not directly supervised by the farmer concerned. The miscellaneous sources were the second most important source of income (30 percent) for middle farmers while for poor farmers and landless it was the third most important source (11 percent and 13 percent respectively). In the case of middle farmers, this source mainly referred to income derived from hiring out of bullock cart for transportation. For poor farmers, this referred to income derived from selling milk, eggs, vegetables, fruits, bamboo, etc. The miscellaneous sources of income for landless were mainly selling

fish, vegetables, etc. This also includes income of their wives which was earned by sewing quilt (Kantha). Second most important source of income for poor farmers was employment. In addition to selling labour as agricultural workers the poor farmers who are endowed with excess draft power compared to their land hire out draft power as well as their own labour for ploughing. On the other hand, the second most important source of funds for landless was gift. Loan also plays an important role in providing funds for poor and landless households. The funds derived from loan was 12 percent for landless and 9 percent for poor farmers while for rich and middle farmers this source provided only 1 percent and 2 percent of their total cash inflow respectively. The poor farmers and landless who live at below subsistence level are heavily dependent on gifts and loans for their survival.

Disinvestment of assets provided another source of cash inflow for household groups. In absolute terms, funds derived from disinvestment was the highest (Tk. 6,510) for middle farmers and the lowest (Tk. 190) for landless. But in terms of respective group, the proportion of total income derived from this source was found to be the highest (23 percent) for poor farmers followed by middle farmers (21 percent). For poor farmers, land constituted the major component of disinvestment which provided 21 percent of their total cash inflows. This was also an important component for middle farmers which provided 11 percent of their total income (Table 3). For rich farmers, income from this source was derived mainly from withdrawal of past savings followed by disinvestment of land. Income derived from disinvestment was the lowest for landless both in absolute and in relative terms since they had little left for disinvestment. However, the reasons for disinvestment were different for different household groups. For rich and middle farmers this was particularly due to need for transferring capital assets from one form to another e.g., sale of land or livestock to buy a good piece of land or machinery for irrigation ; while for poor farmers and landless this was particularly due to need for meeting emergency consumption expenditure. If we broadly classify the sources of cash inflow into two major categories, one consisting of farm and non-farm income (agricultural production, employment and miscellaneous sources) and the other consisting of miscellaneous receipts (derived from liquidation of assets, receiving loans and gifts), then we will find that funds derived from the second category is very important for poor and landless households (Table 3).

In view of the differences in family size and structure, it is not of course entirely appropriate to make comparisons between different household groups at the aggregate level., However, for the sake of simplicity, the per capita income has been estimated simply by dividing total income by the number of persons in the respective household groups. Excluding funds derived from the second category (as stated above), per capita income of rich, middle, poor and landless households were found to be Tk. 3,212, Tk. 2,515, Tk. 694 and Tk. 383 respectively (Table 2). This indicated that the differences of income of poor farmers and landless compared to rich and middle farmers were not as wide as suggested by incomes (by household groups) in absolute terms. However, whatever

TABLE 3. PERCENTAGE DISTRIBUTION OF AVERAGE FARM INCOME AND OTHER CASH INFLOWS BY HOUSEHOLD GROUPS

Sources	Rich	Middle	Poor	Landless
<b>TOTAL FARM AND NON-FARM INCOME</b>				
INCOME	89.2	75.6	66.8	61.2
Value of agril. production	61.7	44.8	44.7	—
Employment	14.2	0.7	11.3	48.5
Agri. work	—	—	3.5	48.5
Non-agri. work (Job)	14.2	0.7	—	—
Hiring out draft animal	—	—	7.8	—
Miscellaneous income	13.3	30.1	10.8	12.7
<b>TOTAL OTHER RECEIPTS</b>	10.8	24.4	33.2	38.8
Disinvestment of assets	8.2	20.6	22.8	6.7
Land	3.1	11.2	20.7	—
Livestock	1.2	7.4	1.7	1.7
Others	3.9	2.0	0.4	5.0
Gifts received	—	—	1.1	20.3
Loans	2.6	3.8	9.2	11.8
Received from others	1.4	2.3	9.2	11.8
Repaid by others	1.2	1.5	—	—
<b>TOTAL CASH INFLOWS</b>	100	100	100	100

may be the basis of comparison, the findings strongly suggest that the income gaps of the rich and middle farmers compared to poor farmers and landless were wide.

#### IV. FARM EXPENDITURES AND OTHER CASH OUTFLOWS

The expenditure schedule helps to sharpen our perception of the differences between rich and poor. The distinctions which arise are basically of two kinds. On the one hand, there are differences in the relative amount of overall budget spent under various headings by the families whilst on the other, there are simply contrasts to be drawn in terms of absolute amounts spent on various items.

The main components of cash outflows are classified as working capital expenditure, capital expenditure, advancing and/or repayment of loan, consumption expenditure and personal expenditure. It can be seen from Table 2 that cash outflows of rich and middle farmers were much higher than those of poor farmers and landless. Total cash



outflows for rich and middle farmers were Tk. 26,026 and Tk. 29,909 while for poor farmers and landless these were only Tk. 5,910 and Tk. 2,786 respectively. Further, it was found that expenditure of middle farmers was a bit higher than that of rich farmers. This was due to the fact that the middle farmers maintained almost the same standard of living compared to rich farmers. It can be seen from Table 2 that expenditures on consumption items by these two household groups have close similarities. Moreover, both working capital expenditures and investment expenditures were more for middle farmers compared to rich farmers. The middle farmers had more irrigated land than rich farmers. The intensive use of water accompanied by more use of other complementary inputs resulted in increased expenditure on working capital.

It can be seen from Table 4 that expenditure on food items comprised the major component of cash outflows for all household groups. In absolute terms the rich and middle households spent more than two times higher than poor households and more than four times higher than landless households. But with respect to individual groups it can be seen from the table that rich and middle farmers spent about 38 percent and 34 percent of their total expenditures on food items while poor farmers and landless spent about 60 percent and 81 percent respectively. The individual proportion of total expenditure for non-food items was found to be almost same (around 10 percent) for all groups of households. Consumption expenditure constituted about 91 percent of the total expenditure of landless while the corresponding percentages for rich, middle and poor farmers were 47 percent, 43 percent and 70 percent respectively. Repayment of loan was also an important component for landless and poor households which constituted about 7 percent and 8 percent of their total expenditure respectively.

Working capital expenditure for rich, middle and poor farmers constituted about 23 percent, 24 percent and 17 percent of their respective cash outflows (Table 4). Capital expenditures for poor farmers and landless were negligible. It was found that capital expenditure for middle farmers was higher than that of rich farmers. However, the pattern of investment was different for these two groups. The rich farmers spent more on land purchase while the middle farmers spent more for purchasing livestock followed by machinery for irrigation.

Personal expenditure seemed to be important for rich farmers compared to others. This includes expenditures for travelling around, for occasional entertaining of guests, for meeting court fees (to settle various disputes), etc. Personal expenditure by the rich farmers was found to be about 6 percent of their total cash outflows while for the landless it was less than 2 percent of their total cash outflows.

#### V. PATTERN OF CURRENT EXPENDITURE

Table 5 shows that pattern of current expenditure for rich and middle farmers were much different than those of poor farmers and landless. The rich and middle far-

TABLE 4. PERCENTAGE DISTRIBUTION OF AVERAGE FARM EXPENDITURE AND OTHER CASH OUTFLOWS BY HOUSEHOLD GROUPS

Source	Rich	Middle	Poor	Landless
<b>WORKING CAPITAL</b>	23.2	24.3	16.6	—
For agriculture	23.2	21.6	16.6	—
For non-agriculture	—	2.7	—	—
<b>CAPITAL EXPENDITURE</b>	21.3	22.2	3.0	0.9
Land	15.5	1.1	—	—
Livestock	2.5	14.1	—	0.9
Machinery	—	10.0	—	—
Others	3.3	2.0	3.0	—
<b>LOAN</b>	1.9	4.2	8.7	6.5
Advanced to others	1.4	1.6	0.6	—
Repaid to others	0.5	2.6	8.1	6.5
<b>CONSUMPTION EXPENDITURE</b>	47.3	42.7	70.3	91.0
Food items	37.9	33.5	60.1	81.4
Non-food items	9.4	9.2	10.2	9.5
<b>PERSONAL EXPENDITURE</b>	6.4	1.6	1.5	1.7
<b>TOTAL CASH OUTFLOWS</b>	100	100	100	100

ers followed similar pattern and the absolute amounts spent by these two groups were also found to be closely same. On the other hand, poor farmers and landless followed a different pattern with some similarities between them. It was found that although poor farmers and landless spent most of their receipts for food consumption, on per capita basis the rich and middle farmers spent about double the amount (for food) compared to poor farmers and landless. The composition of different food items were also different for poor farmers and landless compared to rich and middle farmers. It was found that the former two groups consumed wheat and sweet potato to partially substitute rice since

TABLE 5. PATTERN OF AVERAGE CURRENT EXPENDITURE BY HOUSEHOLD GROUPS (IN PERCENTAGE)

Items	Rich	Middle	Poor	Landless
<b>TOTAL CONSUMPTION AND PERSONAL EXPENDITURE</b>	69.8	65.6	80.2	100
Food : Rice	34.6	33.4	47.9	54.8
Wheat	0.2	4.3	6.3	16.4
Sweet Potato	—	—	2.6	4.4
Meat, Fish, Egg, Milk	6.8	5.3	2.6	3.6
Others	7.7	6.5	7.7	8.7
Total	49.3	49.5	67.1	87.9
Non-food : Fuel	0.8	0.9	1.4	1.4
Medicine	1.3	0.6	0.2	0.8
Clothing	6.3	7.3	6.9	6.0
Others	3.9	4.9	2.9	2.1
Total	12.2	13.7	11.4	10.3
Personal expenditure	8.3	2.4	1.7	1.8
<b>WORKING CAPITAL EXPENDITURE</b>	30.2	34.5	19.8	—
Livestock	0.7	1.5	1.4	—
Agricultural inputs	8.3	10.9	14.4	—
Casual labour	19.6	12.2	3.8	—
Permanent hired labour	1.2	1.8	—	—
Others	0.5	4.2	0.3	—
Non-agricultural items	—	4.1	—	—
<b>TOTAL CURRENT EXPENDITURE</b>	100	100	100	100

those were cheaper. Further, expenditures on nutritious items such as meat, fish, egg and milk were much lower for poor farmers and landless compared to rich and middle farmers.

Expenditures on non-food items for rich and middle farmers were found to be more than six times compared to poor farmers and more than nine times compared to landless. The poor farmers and landless spent negligible amounts on medicine. Their expenditures on clothing were also much lower compared to rich and middle farmers. It was found that per capita expenditures on food, non-food and personal items for rich and middle farmers were about Tk. 1,400 while it was about Tk. 600 for poor farmers and landless (Table 2).

Working capital expenditure for agriculture was found to be around Tk. 6,000 for both rich and middle farmers which was about six times higher than that of poor farmers. The middle farmers spent about 32 percent higher than rich farmers on agricultural inputs. But the rich farmers spent about 59 percent higher than middle farmers on casual labour. Since the rich farmers are more dependent on casual labour their expenditure on this item was higher compared to other groups of farmers.

#### VI. PATTERN OF QUARTERLY CASH INFLOWS AND OUTFLOWS

As expected both total cash inflows and outflows were higher for rich and middle farmers compared to poor farmers and landless. It can be seen from Table 6 that only rich farmers had substantial net balance while on the other extreme, for landless it was negligible. However, throughout the whole period even the rich farmers did not have positive net balance of cash inflows and outflows. To examine seasonal availability of cash by household groups, total cash inflows and outflows of each household group have been sub-divided into four quarters, each consisting of twelve weeks. Incidentally these four quarters have relations with following important crop production activities :

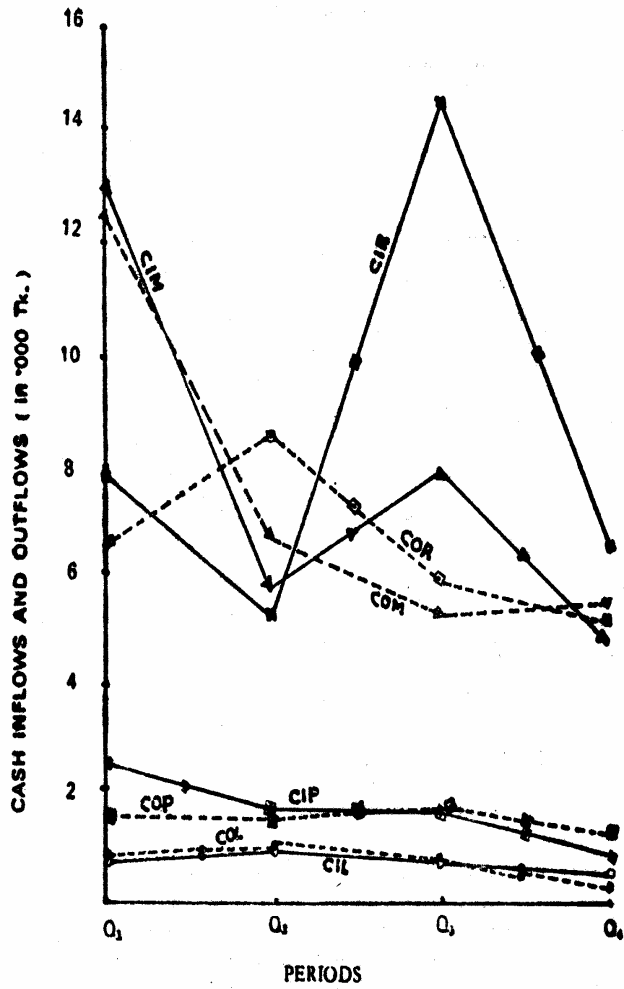
Quarters	Periods	Major Crop production activities
Q <sub>1</sub>	13-10-79 to 4-1-80	1) Land preparation for wheat 2) Aman harvested,
Q <sub>2</sub>	5-1-80 to 28-3-80	1) Land preparation and transplantation of HYV Boro
Q <sub>3</sub>	29-3-80 to 20-6-80	1) Wheat harvested 2) Land preparation for Aus and Jute 3) HYV Boro harvested
Q <sub>4</sub>	21-6-80 to 12-9-80	1) Harvesting of Jute 2) Transplantation of Aman

Table 6 and Figure 1 shows that for farming households, cash inflows in the first and third quarters are relatively higher than those of other quarters. This is because, during the first quarter, one of the most important crops, Aman, is harvested while during the third quarter two other important crops in the irrigated areas, wheat and HYV Boro, are harvested. Aus and Jute are less important crops in the irrigated areas since HYV Boro has replaced them.

Figure 1 shows that for rich farmers, cash inflows in the third quarter was the highest while cash outflows in this quarter was not much different from other quarters. As a result, the higher net balance was found in this quarter. On the other hand, for middle farmers, the highest cash inflows were found in the first quarter accompanied by highest cash outflows. Cash inflows of the middle farmers in this period was relatively higher due to crop production income (production of Aman crop) accompanied by income earned by hiring out of bullock cart for transportation. Besides these, disinvestment of land and livestock took place during this period. The reasons for high cash outflow during this quarter was due to higher expenditures on investment activities. They invested for purchasing better draft animal and machineries for irrigation. Since both cash inflows and outflows were high during this period, net balance during this quarter was low for middle farmers. Cash inflows for poor farmers was the highest in the first quarter since their main income was derived from harvesting of Aman crop.

Figure 1 shows that for rich and middle farmers, cash outflows were more than cash inflows in the second quarter. The need for credit is felt most during this period by the farmers in the irrigated areas. Crop production activities during this period indicate that in the irrigated areas considerable amount of cash is needed particularly for HYV Boro cultivation ; for paying irrigation charges, labour wages and for purchasing fertilizer, insecticides, etc.

Figure 1 further shows that the need for credit is also felt by the farmers during the fourth quarter. During this period Aus and Jute are harvested. Since these have become less important crops in the irrigated areas, the income derived during this period is also less. To meet consumption expenditure and to meet the cost of harvesting Jute and land preparation and transplantation of Aman, the farmers feel the need for credit during this quarter. For landless, throughout the whole period they feel the need for credit although they maintain a very low level of living. Only in the fourth quarter a small amount of positive net balance of cash inflows and outflows was found. The cash outflows in this quarter were relatively lower since on the average one adult member (non-earning) was absent during this period due to certain reasons. The landless earned maximum income during the second quarter, the period during which farmers feel the need for credit. During this period there is good demand for labour because some important crop operations like land preparation and transplantation of HYV Boro and intercultural operations of wheat and Boro take place. Besides these, labour is required for operating Hand Tubewell for irrigation. Cash inflows in the fourth quarter is the



Q<sub>1</sub>, Q<sub>2</sub>, Q<sub>3</sub> and Q<sub>4</sub> are 1st, 2nd, 3rd and 4th Qtrs.

CI=Cash inflow, CO=Cash outflow.

R, M, P, and L are for Rich, Middle, Poor and Landless Households respectively.

Fig. 1 Quarterly Cash Inflows and Outflows by Household Groups

**TABLE 6** AVERAGE QUARTERLY CASH INFLOWS, OUTFLOWS AND NET BALANCES BY HOUSEHOLD GROUPS (IN TAKA)

Quarters	Inflow	Outflow	Net Balance	Inflow	Outflow	Net Balance
	Rich farmers			Middle farmers		
1	7850	6564	1286	13311	12397	914
2	5227	8588	-3361	5715	6928	-1267
3	4498	5928	8570	7798	5258	2540
4	6618	5000	1618	4776	5304	-528
Total	34193	26026	8167	31600	29909	1691
	Poor farmers			Landless		
1	2475	1540	935	721	760	-39
2	1672	1505	167	924	961	-37
3	1683	1630	53	659	686	-27
4	914	1234	-320	513	379 <sup>a</sup>	134
Total	6744	5910	834	2817	2786	31

<sup>a</sup>. One family member was absent during this period for which outflows during this period was low.

lowest for landless since in the irrigated areas labour requirements for Aus and Jute are less important.

Figure 1 further shows that fluctuations of cash inflows and outflows for rich and middle farmers are high in different periods while these are negligible for poor farmers and landless. This is because of the fact that the consumption levels of poor farmers and landless are very low and they are just managing that mostly by cash receipts from disinvestment, gifts and loans which together accounted for 33 to 39 percent of their total cash inflows (Table 3).

## VII. CONCLUSIONS

Analysis of cash inflows and outflows indicates that although rich and middle farmers generate sufficient surplus after maintaining a higher standard of living, they too feel the need for credit in certain periods, particularly in Boro season. On the other

hand, the poor and landless who maintain a very low level of living feel that need throughout the whole year. They are heavily dependent on gifts and loans for mere survival. The poor farmers partially meet their need for credit through disinvestment of assets (which constituted 23% of their total cash inflow). They sell their most valuable assets, land and thus join the landless group. Disinvestment of assets also took place for rich and middle farmers, but the purpose was mainly to transfer their assets from one form to another (more remunerative). The savings and investment potentialities for poor and landless were found to be very low since most of their incomes are spent for consumption purposes (mostly on food).

To improve income of the poor and landless households, substantial opportunities for employment should be created for both farm and non-farm activities in the rural areas. It was found that landless households earned maximum income in the Boro season. Expansion of irrigation facilities, particularly labour intensive technology like HTW will provide more income for both poor and landless households. In this respect, special attention need to be given to the poor farmers in supplying institutional credit and HTW. Further, special credit programmes should also be designed to advance loans to the poor and landless households for non-farm income generating activities in order to improve their economic condition.

The main limitation of the study is that, it is based on a limited number of households. Due to lack of fund, time and personnel, it has not been possible to include a large number of households for the study. However, although the study covered a limited number of households, it provides some indepth micro-level information of the rural households regarding income, expenditure, investment and disinvestment pattern in an irrigated area of Bangladesh. Further research is needed in other areas where different levels of technological base are present in agricultural production.

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