Chapter IV

CONSUMPTION BEHAVIOUR AND MARKETED SURPLUS

Section IV.1: INTRODUCTION

Following our interpretation regarding the review of earlier studies, background of the study area, conceptual and theoretical framework, objectives, hypotheses and methodology of the present work, the study necessitates the analysis of consumption behaviour of paddy farmers and its relationship with marketed surplus. The present chapter draws its attention to the tabular analysis of consumption behaviour of the farmers and its relationship with marketed surplus of paddy according to holding size. This is in order to find out the existing pattern of marketed surplus of paddy in the valley and to examine the strength of farm consumption as a factor determining marketed surplus.

The marketed surplus both in gross and net will be assessed in terms of actual figures as well as percentage of output with respect to size class of holdings. Further, per hectare, per capita and per household marketed surpluses will also be analyzed according to size groups to evaluate marketed potential of the farmers belonging to different groups. Similarly, the marketable surplus of paddy will also be assessed here with respect to size class in order to understand the capacity variation of farmer’s disposal of paddy in the market. The analysis would have been done to enquire the nature of relationship between marketable surplus and size groups. Besides, an attempt will also be made to find out the existing pattern of relationship between marketable surplus and size groups.
In paddy cultivation which involves consumption at source, the level of farm consumption has a tendency to create a negative impact on marketed surplus. An examination of the behavioural pattern of consumption with respect to size class is also taken into account to establish the causal relationship between consumption and size groups. The domestic consumption by the farmers is presumed to be affected by the farm population. Hence, an analysis of population pattern according to size class has been considered to identify the strength of population in influencing the level of consumption directly and the marketed surplus indirectly. Moreover the affect of the ratio of dependent population (minors, old and disables) to working population on consumption and marketed surplus will also be estimated in this chapter.

The entire chapter can be divided into six different sections. Following section-I as introductory to this chapter section-II devotes its attention to the examination of the behavioural pattern of marketed surplus according to size class. Section-III deals with the behavioural pattern of marketable surplus with respect to holding sizes. This is followed by an in-depth analysis of consumption behaviour and marketed surplus according to size class in section-IV. The pattern of farm population and consumption is assessed in section-V which is succeeded by the last section dealing with farm population and marketed surplus.

**Section – IV.2: BEHAVIOURAL PATTERN OF MARKETED SURPLUS**

Considering farm consumption as a crucial factor influencing the level of marketed surplus with our hypothesis that lower sales will be the result of higher consumption and higher sales at lower consumption, without any change in production, an analysis of the behavioural pattern of farm consumption is pertinent to explain the behaviour of marketed surplus
with respect to consumption according to size class. However, it would be convenient to analyze the same if we first analyze the behavioural pattern of marketed surplus with respect to size class, before examining the causal relationship between consumption and marketed surplus. This would enable us to establish the nature of relationship between size class of holdings and marketed surplus to observe whether size group is influential variable on marketed surplus. Besides, an analysis of the marketable surplus with respect to size class is assumed to have greater significance in understanding the market access potentiality of different class of farmers, as well as the nature of relationship between marketable surplus and size groups. This is in order to enquire the magnitude of difference between marketable and marketed surplus reflecting farmer's capacity to sell in future and the extent of distress sales. Distress sale is defined as the sale of paddy by the farmers with small holdings right after the harvest to meet their immediate cash requirements and sometimes such sales may be greater than their marketable surplus. Since marketed surplus consists of marketable surplus and distress sales, the gap between quantity of the produce available for marketing and the produce already being marketed explain the extent of distress sales. Moreover since net marketed surplus (NMS) is defined as gross marketed surplus (GMS) minus repurchases, the volume of the repurchased quantity would necessarily explain the magnitude of distress sales. Therefore, it is also imperative to put our analysis on the behavioural pattern of repurchases as a proportion of consumption of the group with respect to size class while analyzing consumption behaviour.

Marketed surplus, which is defined as the proportion of the produce actually sold in the market, can be classified into gross and net marketed surplus. The study defines the gross marketed surplus as the gross amount of the produce actually sold in the market by the farmers at a
certain price. Whereas, net marketed surplus is the marketed amount of the produce at a certain time after subtracting the volume of repurchases from the gross marketed surplus.

For the purpose of analyzing the behavioural pattern of marketed surplus of paddy with respect to size class of holdings in the Barak Valley of South Assam, the present study follows Dharm Narain’s finding as the pioneering one. According to Narain, marketed surplus as a proportion of output declines as the size of holding increases up to the size-class 10-15 acres and thereafter the proportion increases steadily (Narain, 1961). This contemplates the U-shaped pattern of marketed surplus behaviour with respect to size class. However, Utsa Patnaik (1975), Jagdish Prasad (1989), M. Upender (1990), K. Sengupta (1998) and others clearly insist a linear positive association between size class of holdings and marketed surplus. According to them marketed surplus as a proportion of output increases sharply with the increase in size class. Further, Asoke Hati maintains that marketable(ed) surplus with respect to size class starts with negative value, rises sharply till it crosses zero line, then flattens and thereafter rises at an increasing rate, showing thereby a non-linear relationship (Hati, 1976). On the basis of the above theories our present work will now examine the behavioural relationship between marketed surplus and size class.

Table-1 depicts the pattern of marketed surplus of paddy in the Barak valley of South Assam with respect to size class of land holdings. Farmers have been categorized into different size-classes or groups on the basis of their land holdings. Land holding between 0-1 hectares has been coded as Size-class-I, followed by the holding between 1.01-2.0 hectares as size-class-II. Again the holdings between 2.01-3.0 hectares and 3.01 hectares & above have been coded as Size-class-III and Size-class-IV respectively. The smallest class with land holding of 0-1 hectare
offers only 13.40 per cent of its output as gross marketed surplus whereas the largest class of more than 3.0 hectare contributes as much as 35.48 per cent. The contribution of marketed surplus as a proportion of output by the size-classes 1.01-2.0 hectare and 2.01-3.0 hectare are 24.73 per cent and 36.92 per cent respectively. As per the real quantity of marketed surplus the lowest class shows only 567.0 quintals of paddy, whereas the same is 3506.6 quintals for the highest class. The second and the third classes contribute 1336.6 quintals and 2184 quintals respectively. This shows that marketed surplus in actual figures rises steadily with respect to holding sizes. It can also be traced out that gross marketed surplus (GMS) as per cent of output varies directly with the holding size except the largest class. It is the third group which exhibits maximum level of GMS among other size classes. The group contributes as high as 36.92 per cent of output as GMS, while the contribution made by the largest group declines very marginally to 35.48 per cent. The GMS for the valley as a whole constitute only 29.86 per cent of the total output of all size groups.

This record of GMS in the valley does not commensurate with the high level of demand for this staple diet, which results in large scale import of rice from outside the valley. It also manifests the deficiency in rice production of the area. It is revealed that GMS in actual quantity increases positively with the increase in size holdings, but with respect to the percentage of gross output it follows positive relationship upto the third group. However, since there is only a marginal deceleration of GMS in case of the largest group we can deduce that GMS as per cent of output relates positively with the size class. This finding corroborates with Upender’s realization of positive relationship between marketed surplus and size class (Upender, 1990). It also accords with Sengupta’s observation of direct relationship between GMS and the size groups with the exception of third group.
Table 1
MARKETED SURPLUS OF PADDY BY SIZE CLASS

<table>
<thead>
<tr>
<th>Size Class</th>
<th>I 0 - 1 hectare</th>
<th>II 1.01 - 2.0 hectare</th>
<th>III 2.01 - 3.0 hectare</th>
<th>IV 3.01 hectare &amp; above</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Marketed Surplus (in quintal)</td>
<td>567.0</td>
<td>1336.6</td>
<td>2184.0</td>
<td>3506.6</td>
<td>7594.2</td>
</tr>
<tr>
<td>Gross Marketed Surplus as p.c. of output</td>
<td>13.40</td>
<td>24.73</td>
<td>36.92</td>
<td>35.48</td>
<td>29.86</td>
</tr>
<tr>
<td>Net Marketed Surplus (in quintal)</td>
<td>21.9</td>
<td>1047.6</td>
<td>2155.0</td>
<td>3480.6</td>
<td>6705.1</td>
</tr>
<tr>
<td>Net Marketed Surplus as p.c. of output</td>
<td>0.52</td>
<td>19.38</td>
<td>36.43</td>
<td>35.22</td>
<td>26.36</td>
</tr>
<tr>
<td>P.C. share of the class in total Mar. Sur. of all the classes</td>
<td>0.33</td>
<td>15.62</td>
<td>32.14</td>
<td>51.91</td>
<td>100</td>
</tr>
<tr>
<td>Mar. Sur. per hectare (in quintal)</td>
<td>0.25</td>
<td>7.46</td>
<td>15.62</td>
<td>12.59</td>
<td>10.44</td>
</tr>
<tr>
<td>Mar. Sur. per capita (in quintal)</td>
<td>0.03</td>
<td>1.27</td>
<td>4.13</td>
<td>6.11</td>
<td>2.57</td>
</tr>
<tr>
<td>Mar. Sur. per household (in quintal)</td>
<td>0.25</td>
<td>11.39</td>
<td>35.33</td>
<td>58.01</td>
<td>22.35</td>
</tr>
</tbody>
</table>

Source: Field Survey

The study accepts the definition of Net Marketed Surplus (NMS) as Gross Marketed Surplus (GMS) minus the quantity repurchased by the farmers for family consumption needs. This is in order to bring more accurate
picture about the behavioural pattern of marketed surplus among the farmers in the study area. The pattern of net marketed surplus as revealed in table-1 shows the same behavioural relationship as it is in case of gross marketed surplus, implying that both GMS as well as NMS vary directly with the size class, with marginal exception of the largest class. The first two groups show their NMS as 0.52 per cent and 19.38 per cent of output, while GMS as per cent of output for the same two groups are 13.40 and 24.73 respectively. This reflects a wide gap between GMS and NMS for the first two size classes. The gap is the widest in case of size class 0-1 hectare. However, in case of higher two classes there is no such difference, showing GMS and NMS as 36.92 per cent and 36.43 per cent respectively for Size-class 2.01-3.0 hectare. The GMS and NMS for size class 3.01 hectare & above are 35.48 per cent and 35.22 per cent respectively. Thus it is evident that for higher two classes GMS and NMS both in terms of actual quantity as well as percentage figures are almost the same. There exist only a decimal difference between GMS and NMS for the third and the largest group. It is due to this reason the behavioural relationship between both the GMS and NMS and the size-class follows the same direction, confirming linear positive relationship. Furthermore, both GMS and NMS relate positively with size class, showing a steady rise in marketed surplus along with increase in size group. Our present findings therefore are not in conformity with U-pattern behavioural aspect of marketed surplus as theorized by Narain (Narain, 1961), rather proves the validity of linear association between size holding and marketed surplus as maintained by Prasad, Upender and Sengupta in their studies (Prasad, 1989, Upender, 1990, and Sengupta, 1998).

The implication of being considerable differences between GMS and NMS for size groups 0-1 hectare and 1.01-2.0 hectare is that farmers belonging to these two groups are involved in distress sales. As these
farmers have immediate cash requirement owing to serious grip of poverty, they have to sell their produce right after the harvest. It is inferred that smaller the size class more acute is the level of poverty and thereby higher is the volume of distress sales. The status of distress sales is more pathetic in case of the smallest group due to which the gap between its GMS and NMS is the widest. Due to distress sales these farmers are bound to purchase rice or paddy for their family consumption at a very high price termed as repurchases, which should be deducted from the amount of GMS to get NMS. Contrary to this, higher two groups show almost absence of any such distress selling and repurchasing behaviour, witnessing only a little decimal differences between GMS and NMS. This reflects that economic condition of the farmers belonging to larger two groups are relatively much better than smaller ones, who need not immediate cash and therefore can wait for better prices.

Though larger two groups' exhibit better situation of marketed surplus than smaller groups, yet this is not sufficient to meet the local demand for rice in the valley. It is found that only an aggregate of 26.36 per cent of total output in the valley finds its way into the market. Further, marketed surplus contributed by larger two groups are not consistent with their large scale ownership of area available under cultivation and better economic condition, revealing their inefficiency. Hence, it may be due to inefficiency headed by the factors like impractical engagement in cultivation, disinterest to cultivate and lack of commercial attitude, the net levels of marketed surplus by the farmers belonging to larger groups are not that satisfactory. Contrary to this, small and marginal farmers with their practical engagement in cultivation take personal interest during the whole production process. The reason being that paddy cultivation is their only means of livelihood and the farmers cultivate mainly for their family consumption. These small and poor farmers
always borrow money basically for consumption needs with oral agreement of selling their produce right after the harvest to the moneylender at a price much below than the prevailing market price. Later they have to repurchase the same produce at a higher price for meeting their consumption requirement. Again in the absence of any non-agricultural sources of income during lean season they have to depend upon borrowed money to repurchase the produce for home consumption, which ultimately put them in a vicious circle of distress sales. Therefore, it is due to their extreme poverty and the consequent vicious circle of distress sales, the small and poor farmers of the first two groups shows negligible proportion of marketed surplus. Here one interesting conclusion can be drawn that despite the extremity of distress sales found among the farmers of the smallest group, their NMS is still positive which is an uncommon finding of other studies done in different parts of the country. Several other studies reveal a common feature of negative marketed surplus on the part of small farmers. It thus reinforces Sengupta’s finding that smaller groups show positive marketed surplus despite their involvement in distress sales (Sengupta, 1998).

Let us turn our analysis over the patterns of per hectare, per capita and per household marketed surplus for each of the size classes, and their association with respect to holding sizes. Table-1 depicts that per hectare marketed surplus is only 0.25 quintal for the smallest class while it is 7.46 quintal for size class between 1.01-2.0 hectare. Size group 2.01-3.0 hectare unveils its marketed surplus per hectare as 15.62 quintal, whereas the largest class shows the same to the extent of 12.59 quintal. Thus, it is found that size class 2.01-3.0 hectare achieves the highest rank in terms of per hectare marketed surplus, indicating its highest level of efficiency among all other groups. Thus, a non-linear relationship can be observed in case of per hectare marketed surplus with respect to size groups. The determination of the efficiency level in generating
marketed surplus can be relied upon per hectare marketed surplus which can better explain the causal relationship between lands devoted for cultivation and marketed surplus. Though marketed surplus per hectare of the largest class is less than the third group, still it is above the aggregate level of per hectare marketed surplus for the valley as a whole, being 10.44 quintal. The per hectare marketed surplus of smaller two groups are far below the average level, and it is the lowest group which shows almost zero level of marketed surplus. This finding supports Upender’s conclusion of positive association between marketed surplus per acre and the farm size up to size class-III (Upender, 1990). The basic factor responsible for such unworthy levels of per hectare marketed surplus shown by smaller two groups may be the population pressure on land per hectare.

Apart from this, per capita and per household marketed surplus as well as the per cent share of the class in total marketed surplus is also useful in analyzing the behavioural relationship between marketed surplus and size class. The per capita and the per household marketed surpluses are 0.03 quintal and 0.25 quintal respectively for size-class 0-1 hectare. Size class between 1.01-2.0 hectare, records 1.27 quintal and 11.39 quintal as per capita and per household marketed surplus respectively. For size group of 2.01-3.0 hectare the per capita marketed surplus is 4.13 quintal, whereas the group’s per household marketed surplus is revealed as 35.33 quintal. The largest group shows it’s per capita and per household marketed surpluses to the extent of 6.11 quintal and 58.01 quintal respectively. As per the per cent share of the class in total marketed surplus of all classes, the smallest group attains its share only up to 0.33 per cent, whereas the share of the second group is 15.62 per cent. The third and the largest groups record their share contributions as 32.14 per cent and 51.91 per cent respectively. Such revelation of the behavioural patterns of per capita and per household marketed surplus
establishes a linear positive relationship between marketed surplus and size class, confirming the Patnaik’s hypothesis that any increase in size-class is followed by an immediate increase in marketed surplus (Patnaik, 1975). However, the present finding does not satisfy the U-pattern behaviour of marketed surplus with respect to size-holdings as propounded by Dharam Narain (Narain, 1961).

Although high magnitude of distress sales is found to exist in the first two classes, yet there is no such negative net marketed surplus prevailing among the farmers belonging to the smallest class. This finding breaks the confirmation made by the studies conducted in other parts of the country where distress sales and negative marketed surplus are found common among the small and marginal farmers. Such a behaviour contemplates the fact that farmers even from smaller groups are better placed in comparison with their counterparts in other areas, which can help them to increase their level of marketed surplus. The contribution made by larger two groups is however not satisfactory for meeting the local demand for paddy. Because, the valley still has to import rice from other parts of the country in order to meet the local demands, which indicates insufficient rate of marketed surplus mobilization in the valley itself.
Section-IV.3: BEHAVIOURAL PATTERN OF MARKETABLE SURPLUS

In order to assess the potentiality of farmer's disposal in the market the concept of marketable surplus and its behavioral relationship with size holdings have been taken as a part of present analysis. Marketable surplus, by definition, represents the residual product available with the farmers for disposal after their genuine requirements of family consumption, payment of wages in kind, rent in kind, seed, wastage and other contractual obligations such as loan repayments in kind have been met. The school of thought led by Utsa Patnaik and others like Jagdish Prasad, M. Upender, M. Chattopadhyay & I. Sen, maintain that the proportion of marketable surplus increases with the increase in size class, representing a linear positive relationship (Patnaik, 1975, Prasad, 1989, Upender, 1990, Chattopadhyay-Sen, 1988). However, the study of Chattopadhyay-Sen also found a negative relationship between marketable surplus and size class related to different area. On the contrary, Asoke Hati advocates a non-linear relationship between marketable surplus and size class (Hati, 1976). According to him, marketable surplus is negative in case of the smallest size group, and rises sharply upto zero line, then increases at a diminishing rate, and thereafter rises at an increasing rate. Keeping these studies in view we make an attempt to examine the behavioural pattern of marketable surplus in the valley.

Table-2 delineates the behavioural pattern of marketable surplus in the Barak Valley with respect to size holdings. With respect to both quantity and percentage of output, marketable surplus shows a direct relationship with holding size. The smallest group of 0-1 hectare records
Table - 2
MARKETABLE SURPLUS OF PADDY ACCORDING TO HOLDING SIZES

<table>
<thead>
<tr>
<th>Size holding</th>
<th>I 0 - 1 hectare</th>
<th>II 1.01 - 2.0 hectare</th>
<th>III 2.01 - 3.0 hectare</th>
<th>IV 3.01 hectare &amp; above</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketed Surplus (in quintal)</td>
<td>647.0</td>
<td>1776.2</td>
<td>2985.4</td>
<td>5758.6</td>
<td>11167.2</td>
</tr>
<tr>
<td>Marketed Surplus as p.c. of output</td>
<td>15.29</td>
<td>32.86</td>
<td>50.47</td>
<td>58.27</td>
<td>43.91</td>
</tr>
<tr>
<td>P.C. share of the class in total Marketable Surplus of all the classes</td>
<td>5.79</td>
<td>15.91</td>
<td>26.73</td>
<td>51.57</td>
<td>100</td>
</tr>
<tr>
<td>Marketable Surplus per hectare (in quintal)</td>
<td>7.41</td>
<td>12.65</td>
<td>21.64</td>
<td>20.82</td>
<td>17.39</td>
</tr>
<tr>
<td>Marketable Surplus per capita (in quintal)</td>
<td>0.92</td>
<td>2.16</td>
<td>5.72</td>
<td>10.10</td>
<td>4.27</td>
</tr>
<tr>
<td>Marketable Surplus per household (in quintal)</td>
<td>7.44</td>
<td>19.31</td>
<td>48.94</td>
<td>95.98</td>
<td>37.22</td>
</tr>
</tbody>
</table>

Source: Field Survey

its quantity of marketable surplus as 647.0 quintal, which constitutes 15.29 per cent of output of the group. As against this the largest group of 3.01 hectare & above show its physical quantum of marketable surplus to the extent of 5758.6 quintal, constituting 58.27 per cent of its output. The volumes of marketable surplus of the second group between 1.01-2.0 hectare and that of the third group between 2.01-3.0 hectare are revealed to be 1776.2 quintal and 2985.4 quintal respectively. The marketable
surplus as a proportion of output for the second and the third group is 32.86 per cent and 50.47 per cent respectively. The total quantity of marketable surplus for the valley as a whole is found to be 11167.2 quintal showing that an aggregate amount of 43.91 per cent of output has the potentiality to be marketed in this valley. This confirms that the proportion of marketable surplus rises sharply in accordance with the increase in size class. Unlike the behavioural pattern of marketed surplus, there is no such sudden decline of marketable surplus in case of the largest group. Thus marketable surplus follows a positive linear relationship with the size group for all size classes. Here it is reflected that the largest group has more retention power (retention for future sale) than its immediate preceding group, since the group's marketable surplus both in actual figures as well as in percentage of output is much higher than its marketed surplus. This may be due to their better economic condition and thereby capacity to wait for better prices, which can lead them to earn more returns by selling their produce in lean season. Our present finding, therefore, do not validate the findings made by Hati regarding the non-linear relationship between marketable surplus and the farm size (Hati, 1976). Nor is it in conformity with the negative linear relationship as revealed in the study of Chattopadhyay and Sen, stating that marketable surplus declines with the increase in farm size without any incidence of negative marketable surplus for any size class in Tamilnadu (Chattopadhyay-Sen, 1988). Interestingly, it confirms linear positive relationship between the size class and marketable surplus, as maintained by Patnaik, Prasad and Upender that the proportion of marketable surplus to total production of respective size group increases sharply with the increase in size class of holdings (Patnaik,1975, Prasad,1989, Upender,1990).

The same positive linear relationship can also be observed in case of per cent share of the class in total marketable surplus of all classes, as well
as in per capita and per household marketable surpluses (table -2). The share contribution of the largest group is as high as 51.57 per cent, whereas, it is 26.73 per cent for the third group. The contributions made by the second and the smallest group to the total marketable surplus are 15.91 per cent and 5.79 per cent respectively. As per the pattern of per capita marketable surplus it is observed that the smallest group attains only a negligible quantum, i.e. 0.92 quintal and the position of the group next to the smallest one is to the extent of 2.16 quintal. The third group shows its per capita marketable surplus as 5.72 quintal, whereas it is the largest group which achieves the highest quantum of marketable surplus per head which is 10.10 quintal. The aggregate marketable surplus per capita for the valley as a whole constitute only 4.27 quintal, which is not a satisfactory contribution in relation to the market demand for rice. Thus it is revealed that the level of per capita marketable surplus increases sharply with the increase in size class of holding. The pattern of per capita marketable surplus in this valley is therefore partly in line with the finding of Chattopadhyay and Sen, as the per capita marketable surplus rises with the increase in size class, with an exception to the smallest group (Chattopadhyay-Sen, 1988). Interestingly, our present finding reveals that per capita marketable surplus even for the smallest group is not negative which is contradictory to the study of Chattopadhyay and Sen only in case of the smallest group.

With respect to marketable surplus per household the same positive relationship can be observed as in case of marketable surplus per capita (Table-2). The per household marketable surplus for the smallest group of 0-1 hectare and the second group of 1.01-2.0 hectare are 7.44 quintal and 19.31 quintal respectively. Whereas for larger two groups of 2.01-3.0 hectare and 3.01 hectare onwards the per household marketable surplus is revealed to be 48.94 quintal and 95.98 quintal respectively. Thus marketable surplus per household increases steadily with the rise in
farm size. The per household marketable surplus for the valley as a whole is 37.22 quintal. As per this revelation the largest group shows the highest level of per household marketable surplus which is also true in case of per capita marketable surplus. Both the levels of per capita as well as per household marketable surplus for the largest group are almost double of the levels shown by the third group. This indicates that the largest group has maximum potentiality to get market outlet of the produce followed by the third group. This large volume of marketable surplus pertaining to the largest group dictates higher retention capacity of its farmers to sell in future market at better prices. The disposal capacity of farmers of the third group is not unappreciable though it is much lower than their counterparts in the largest group. Regardless of this, the condition of smaller two groups is very pathetic either in per capita or per household marketable surplus, showing almost absence of any disposal capacity. Of course there is no such revelation of negative marketable surplus either in terms of per capita or per household marketable surplus in case of the smallest group. The basic explanatory factors for such distress condition of smaller two groups may be the small size of holding and financial scarcity, and the consequent distress sales. However, larger two groups are able to show a better disposal capacity due to the large size of holding and relatively better economic condition which is also reflected in their low volume of repurchase (Table-3). Efficiency through application of modern farming methods or commercial line of cultivation do not appear to be a plausible reason for the better performance of the farmers of large size holdings, because it is observed that there is almost the total absence of modern technology by any group of farmers.

On the other hand, the per hectare marketable surplus shows an increasing trend from 7.41 quintal for the first group to 12.65 quintal for the second group, and further to 21.64 quintal for the third group. This
reflects that marketable surplus per hectare rises with the increase in size class up to the third group, followed by a sudden fall to 20.82 quintal in case of the largest size group. The aggregate per hectare marketable surplus of all the size classes accounts for only 17.39 quintal, which is highly unsatisfactory in relation to large scale labour force engaged in cultivation. Anyway, the per hectare marketable surplus do not reveal a positive relationship with the size holdings for all classes, as in case of the per capita and per household marketable surplus. The per hectare marketable surplus is found highest in case of the third group of 2.01-3.0 hectare, whereas it is the lowest in case of the first group of 0-1 hectare. The largest group shows its per hectare marketable surplus slightly lower than the third group. Hence it is not the largest group, rather the third group which achieves maximum potentiality of market access of their produce. This is not because of their large size of holding relative to smaller two groups, but may be due to their keen interest in cultivation with more practical engagement than the largest class, though they are not able to adopt scientific methods of cultivation due to financial problems. Similar to the per capita as well as per household marketable surplus, the levels of per hectare marketable surplus for smaller two groups are much lower than larger groups. But since there is only a marginal deceleration of marketable surplus per hectare in case of the largest group it can be deduced that marketable surplus increases positively with the increase in size group. It does satisfy a similar positive relationship which is revealed in case of GMS, NMS, and per hectare marketed surplus with respect to size groups in preceding section. This finding partly corroborates with the observation made by Chattopadhyay-Sen as the per hectare marketable surplus rises with the increase in farm size, except smaller groups which show negative marketable surplus (Chattopadhyay-Sen, 1988). However, it substantiates the observation made by Sen and Banerjee as the per
hectare marketable surplus is positive even in case of smaller size groups (Sen-Banerjee, 1995).

Considering per capita and per household marketable surpluses as more reliable determinants of farmers' disposal, the power of farmers' disposal can be examined from the magnitude of the difference between per capita marketable surplus and per capita marketed surplus, as well from the difference between per household marketable surplus and per household marketed surplus. For the smallest group the per capita marketed surplus is 0.03 quintal and per household marketed surplus is 0.25 quintal (Table-1). Whereas for the same group the per capita and per household marketable surpluses are 0.92 quintal and 7.44 quintal respectively (table-2). The largest group shows 6.11 quintal per capita and 58.01 quintal per household marketed surpluses (Table-1). Regarding per capita and per household marketable surpluses the largest group attains 10.10 quintal and 95.98 quintal respectively (table-2). This reflects that small and marginal farmers belonging to the first two groups represent a somewhat positive difference between marketable surplus and marketed surplus both in terms of per capita as well as per household. Such a positive difference implies that small farmers have a negligible disposal power and they try their best to increase their returns despite having unsound economic condition and the consequent distress sales. Table-1 & 2 reveal that per capita and per household marketed surpluses for the second group are 1.27 quintal and 11.39 quintal respectively, while the group’s per capita and per household marketable surpluses are 2.16 quintal and 19.31 quintal respectively. The third group shows its per capita marketable surplus as 5.72 quintal and per capita marketed surplus as 4.13 quintal. The group’s per household marketable surplus and per household marketed surplus are revealed to be 48.94 quintal and 35.33 quintal respectively. Though the size-class 2.01-3.0 hectare contributes the highest proportion of marketed surplus,
the gap between its marketable and marketed surplus (per capita and per household) is smaller than the largest group. This indicates that disposal power of the third group is comparatively weaker than the largest group. Hence it is confirmed that the largest class of 3.01 hectare and above achieves the highest disposal capacity of its produce (the power of retention for future sales at better prices). Since agriculture is the only means of livelihood for the farmers belonging to smaller two groups, they could take more interest in cultivation compared with larger groups, which could be a possible factor for increasing the level of per capita and per household marketable surplus than at present. But the factors like small holdings with serious nature of absolute poverty hamper them to make best possible effort in cultivation. Perhaps it is the nature and the size of farm population which is an explanatory factor for having such poor volumes of per capita and per household marketable surpluses of smaller two groups. Though per capita and per household marketable surpluses are said to be the highest in case of the largest group, its inefficiency is reflected in the pattern of per hectare marketable surplus, which is less than the third group with lower extent of cultivated area. Thus, except per hectare marketable surplus, the whole pattern of marketable surplus behaviour (in terms of the proportion of output, per cent share, per capita and per household) in the Barak valley follows a positive relationship with size-holdings for all size holdings. The same positive relationship can also be observed between per hectare marketable surplus and the size group up to size class 2.01-3.0 hectare, and thereafter marketable surplus declines marginally. Our present finding therefore accords with the linear positive relationship between marketable surplus and size class of holding as maintained by Patnaik and others in this line (Patnaik, 1975), and does not endorse the non-linear relationship as recognized by Hati (Hati, 1976).
Section IV. 4: BEHAVIOURAL PATTERNS OF CONSUMPTION AND MARKETED SURPLUS

Analysis of the relationship between consumption and marketed surplus receives central focus in this chapter to examine the causal relationship between them. The study defines 'consumption' as the derivation of utility from using self-produced crop by the farmers themselves as their staple diet over a specified time frame. Since our present study is related to the system of subsistence farming for produce such as paddy in Barak valley, consumption is assumed to be an important factor determining marketed surplus. This is because the farmers in the valley generally carry on production process with the basic objective of satisfying their consumption needs and not guided by the profit motive attitude. As the study of Sengupta recognized that distress sales by the small farmers and lack of commercial interest of the large farmers could be the possible reasons for lower volume of marketed surplus (Sengupta, 1998). Bezbarua and Roy also advocated that farmers with relatively small size of holding in the valley cultivate mainly for home consumption (Bezbarua-Roy, 2002). Therefore, in subsistence farming both production as well as consumption involves the same crop. It is in this sense that consumption may play a negative role in determining marketed surplus implying that lower level of marketed surplus takes place at higher consumption and vice-versa. Thus, marketed surplus can better be explained by consumption at the farm level which acts as an independent variable treating marketed surplus as dependent variable. Sengupta maintains an inverse association between consumption and marketed surplus provided that production remains the same (Sengupta, 1998). M. Upendar also traced an inverse relationship between consumption and marketed surplus according to size class of holdings (Upender, 1990).
A perusal of table-3 describes that farm consumption as per cent of output declines sharply with the increase in size class. But the same does not hold good in terms of actual figures of consumption shown in the table. The actual figures of consumption are 1721.6 quintal for size class 0-1 hectare, 2052.9 quintal for size class 1.01-2.0 hectare, 1470.8 quintal for size class 2.01-3.0 hectare and 1616.8 quintal for group of 3.0 hectare onwards. This shows a fluctuating tendency of consumption with the enlargement of holding size. Though physical quantum of consumption can reveal the actual portion of production being consumed by each size group, this may be affected by number of households distributed to each group. More importantly, if the number of households varies from group to group, their actual volume of consumption may also vary which alone cannot make a causative relationship with either size group or marketed surplus without converting consumption into percentage figures of output. Moreover, since the analysis of marketed surplus has been done basically in terms of the percentage of output the actual figures of consumption cannot explain the net affect of consumption on marketed surplus. It is only the consumption as proportion of output which has a significant bearing to explain the level of marketed surplus as per cent of output. Nonetheless, in explaining the per capita and per household marketed surplus with respect to size class the actual figures of per capita and per household consumption would have relevant significance.

Let us first try to interpret consumption behaviour of farmers according to size class, in terms of consumption as per cent of production. The smallest class of 0-1 hectare consumes 40.69 per cent of output against 16.36 per cent of the largest class of 3.01 hectare and above. Size classes 1.01-2.0 hectare and 2.01-3.0 hectare consume 37.98 per cent and 24.86 per cent respectively of their respective output. This analysis
reveals that farm consumption as a proportion of production declines at a high rate with the rise in farm size, indicating an inverse relationship between size class and consumption. One of the basic factors causing such negative relationship between size-group and consumption may be the level of output pertaining to the respective group. The reason being that higher percentage consumption of smaller two groups may be due to their lower volumes of output, and lower percentage consumption of larger two groups are due to their higher outputs, assuming no significant variation in the family size with respect to size class. The output volume can be determined by land under cultivation, implying that larger groups can avail higher output than smaller groups by virtue of large-scale possession of land, even if their productivity is less. Apart from this, the number of family members per households or the average size of family of the group has a direct bearing on the pattern of consumption, as paddy being the staple diet of the farmers. Therefore, higher consumption by smaller groups may also be due to their relatively bigger size of family, and the opposite is true for larger groups, which will be investigated later.

The per cent share of consumption of the group to total consumption, however, shows that size class of 1.01-2.0 hectare records the highest share of 29.92 per cent, while the lowest share of 21.43 per cent is recorded by the size group of 2.01-3.0 hectare. The smallest and the largest size classes have their consumption shares of 25.09 per cent and 23.56 per cent respectively. It is thus revealed that though lowest land holding group consumes the highest quantum of production in absolute amount, in terms of consumption share it is the second group which exhibits the highest consumption level. The lowest share of consumption to total consumption of all the groups is recorded by the third group. The pattern of consumption share of the various size groups therefore shows a fluctuating trend with respect to size class. This may be possibly
because of the family size or the number of population per household in general, and the number of households distributed to each group in particular. Hence, the per cent share of group consumption to total consumption of all the groups may not have significant implication to explain marketed surplus.

It is pertinent here to undertake an analysis on per capita and per household consumption of the farmers according to size groups, based on the figures shown in table-3. This would help us to comprehend whether actual consumption of paddy by the farmers is above or below the average annual consumption of all the groups. This in turn may reveal the deficiency in consumption of a particular group from the minimum consumption requirement of such staple diet, which would have necessary bearing in explaining the output elasticity of marketed surplus. Since it is assumed that the farmers belonging to larger two groups consume paddy at their satisfactory level in relation to their output and economic condition, the per household and per capita consumption of larger groups is considered as the minimum level of consumption to explain deficiency in consumption.

An analysis of per household consumption pattern would give us the idea about actual consumption of individual farm family under the group. As Sengupta asserts that family size is directly related to consumption per household (Sengupta, 1998). This will have necessary implication to examine the output elasticity of marketed surplus. If a size group has less per household consumption than its minimum requirement, any expansion of its output may not cause an immediate increase in its level of marketed surplus. The analysis of the same will also show the nature of relationship between consumption per household and size class of holdings. Table-3 outlines that consumption per household of the first group is 19.79 quintal which is much lower than the per household
consumption of third and fourth groups revealing to be 24.11 quintal and 26.95 quintal respectively. Though per household consumption of the second group is higher than the first group being 22.31 quintal, still it is lower than the consumption levels of larger two groups. The annual aggregate consumption of all the groups constitute 22.87 quintal per household, which is also higher than the per household consumption of smaller two groups. Thus, it is inferred that farmers belonging to the first two groups are consuming below the necessary consumption level. As a result, any increase in their level of production will not have positive impact on marketed surplus rather it will cause an instantaneous increase in their consumption. In addition, the analysis confirms that consumption per household is related positively with the farm size, meaning that as farm size increases consumption also increases.

However, it is also true that per household consumption does not represent the actual consumption by each of the family member termed as per capita consumption. If per household consumption of a particular group is low due to its smaller size of family, the per household consumption may fail to explain the effectiveness of output expansion on marketed surplus of that particular group. Therefore, it is the per capita consumption which can be considered as more reliable determinant of output elasticity of marketed surplus. An enquiry into the pattern of per capita consumption of paddy by the farmers can significantly explain the net affect of the rise in output on marketed surplus. Besides, it will also examine the nature of relationship between consumption per capita and size class, implying whether the size group has positive impact on per capita consumption. Hence, it is important to undertake an analysis of the pattern of per capita consumption of the farmers with respect to size class.
Table - 3
PATTERN OF CONSUMPTION AND MARKETED SURPLUS OF PADDY IN BARAK VALLEY ACCORDING TO SIZE CLASS

<table>
<thead>
<tr>
<th>Size Class</th>
<th>I 0 - 1 hectare</th>
<th>II 1.01 - 2.0 hectare</th>
<th>III 2.01 - 3.0 hectare</th>
<th>IV 3.01 hectare &amp; above</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Marketed Surplus as per cent of Output</td>
<td>0.52</td>
<td>19.38</td>
<td>36.43</td>
<td>35.22</td>
<td>26.36</td>
</tr>
<tr>
<td>Consumption of Paddy (in quintal)</td>
<td>1721.6</td>
<td>2052.9</td>
<td>1470.8</td>
<td>1616.8</td>
<td>6862.1</td>
</tr>
<tr>
<td>Consumption as per cent of output</td>
<td>40.69</td>
<td>37.98</td>
<td>24.86</td>
<td>16.36</td>
<td>26.98</td>
</tr>
<tr>
<td>Per cent consumption of the group to total consumption</td>
<td>25.09%</td>
<td>29.92</td>
<td>21.43</td>
<td>23.56</td>
<td>100</td>
</tr>
<tr>
<td>Consumption per capita (in quintal)</td>
<td>2.46</td>
<td>2.49</td>
<td>2.82</td>
<td>2.84</td>
<td>2.63</td>
</tr>
<tr>
<td>Consumption per household (in quintal)</td>
<td>19.79</td>
<td>22.31</td>
<td>24.11</td>
<td>26.95</td>
<td>22.87</td>
</tr>
<tr>
<td>Amount of paddy repurchased by the farmers (in quintal)</td>
<td>545.1</td>
<td>289.0</td>
<td>29.0</td>
<td>26.0</td>
<td>889.1</td>
</tr>
<tr>
<td>Per cent of repurchase to total consumption of the group</td>
<td>24.05</td>
<td>12.34</td>
<td>1.93</td>
<td>1.58</td>
<td>11.47</td>
</tr>
</tbody>
</table>

Source: Field Survey
The per capita consumption of size class 0-1 hectare and 1.01-2.0 hectare are revealed as 2.46 and 2.49 quintals respectively. Whereas for size class 2.01-3.0 hectare and 3.01 hectare & above the per head consumptions are found as 2.82 and 2.84 quintals respectively. The average per capita consumption of all the size classes under study is estimated to be 2.63 quintal. Thus it is apparent that small and marginal farmers belonging to the first two groups are consuming less than the average level of per head consumption. The farmers belonging to larger two groups consume more than the average annual consumption of all the size groups. This points out that farm consumption of paddy by the small and marginal farmers is far below their satisfactory level of consumption. Thus it substantiates Sengupta’s recognition of much lower per capita consumption by the smaller groups than the annual per capita consumption of other size classes (Sengupta, 1998). It also satisfies the positive relationship between consumption and size class, showing an increase in per capita consumption with the increase in holding sizes. Therefore, the size of farm is a possible factor influencing the level of per capita consumption of the farmers.

The analysis reflects that higher proportions of output consumed by smaller two groups may due to larger number of family members in the farm. Because, it is found that both per capita and per household consumption of smaller two groups are not merely less than larger groups, but also lower than the average annual per capita as well as per family consumptions of all the size groups. Such finding goes to endorse that it may be because of larger family size of the small and marginal farmers, their consumption as a proportion of output touches the peak point. This definitely invites our attention to the relationship between farm consumption and farm population which will be examined in the next section. One more possible factor of such higher percentage
consumption of output and lower per capita as well as per household consumptions by smaller groups is the level of output. Due to lower production and larger family size of smaller two groups their percentage consumption is higher, but per capita as well as per household consumptions are lower. Conversely, due to higher production level the percentage consumption of output by larger two groups is smaller, but their per head and per household consumptions are maximum.

Thus the farmers belonging to larger and larger size classes enjoy more and more satisfactory level of consumption, whereas the smaller two groups cannot maintain even the minimum average level of annual consumption of their produce. It is the smallest group which stands in the worst situation regarding per capita and per household consumptions, consuming much lower than the average level. Here we can validate Hati's conclusion that farm households belonging to size group 0.66–1.98 hectares have a strong tendency of increasing their consumption rate with the increase in size class (Hati, 1976). Consumption below the satisfactory level of the first two groups implies that any increase in production of these groups concerned will not lead to an instantaneous escalation of their marketed surplus, but will result in raising their domestic consumption. This authenticates Sengupta's realization that any increase in the production of small farmers will fail to cause an immediate rise in marketed surplus rather may inflate self-consumption for meeting their suppressed demand (Sengupta, 1998).

Some unavoidable circumstances compel the poor farmers to sell their produce retained for self-consumption at lower prices during the post-harvest season, and subsequently they have to purchase the same at higher prices for meeting consumption requirement termed as repurchases. It is the farm consumption which can only determine gross marketed surplus (GMS). Gross marketed surplus may include forced
sale dictated by the farmers' cash needs. The amount of the produce disposed off in the form of forced sale should again be purchased by the farmers to adjust their minimum food requirements. Thus the extent of repurchases in total consumption at source works as a significant factor in determining the net level of marketed surplus. Furthermore, since net marketed surplus (NMS) has been defined as deduction of repurchases from the gross marketed surplus, the volume of repurchases actually determines the quantum of marketed surplus as well as distress sales. The small and marginal farmers are obliged to undertake more distress sales due to which their volume of repurchases reaches the highest level among all other size classes. The repurchase row of table 3 delineates that all the size classes under study more or less indulge in repurchases showing a total of 889.1 quintals of paddy purchased from the market. The per cent share of repurchase in total consumption of the group shows that size class 0-1 hectare achieves the highest share of 24.05 per cent, while it is 12.34 per cent for size class 1.01-2.0 hectare. Thus the level of repurchases by smaller two groups are much higher compared to larger two groups of 2.01-3.0 hectare and 3.01 hectare onwards showing their repurchases as 1.93 per cent and 1.58 per cent respectively. The total share of repurchase to total consumption for the valley as whole constitute 11.47 per cent, in which the first two classes have a considerable share with very negligible shares for larger groups. This reflects an inverse relationship between repurchase by the farmers and size class, confirming that as the holding size increases repurchase both in quantity as well as in percentage figures declines at a highly diminishing rate.

The extreme grip of poverty faced by small farmers in the area compels them to borrow money from the moneylenders with the commitment of selling their produce to those moneylenders just after the harvest, at a price much below the prevailing market price. It is well known that post
harvest prices are the lowest compared with other seasons of the year. Consequently farmers’ return from distress sales becomes lower than their cost of production. Besides, due to their small holdings of land the total quantity of production is also not enough to satisfy their total family consumption. As a result, they have to repurchase the same produce latter through borrowing in the absence of any non-agrarian source of income, which again lead them to commit distress sales in the next year. They have no option but to take loan from moneylenders or other non-institutional sources for the purpose of either production or consumption. On the other hand, due to the absence of incentives, awareness and other related facilities to the farmers in borrowing from banks and other institutional sources in the area, the small farmers continued to be relied upon moneylenders. Therefore, the high degree of poverty of the small and marginal farmers in the valley is responsible for such magnitude of distress sales and repurchases.

On the contrary, large farmers due to their higher quantum of production supported by large holding of lands with some non-agrarian sources of income can abstain themselves from distress sales. Moreover, they are aware about institutional loan facilities and have the capacity to borrow money from government, banks, etc. Due to these factors distress sales and repurchases are almost absent in case of size classes of 2.01-3.0 hectare and 3.01 hectare & above. Interestingly, small proportion of repurchases by larger two groups is not because of distress sales, rather for replacing the superior quality of paddy over inferior one. Some rich farmers belonging to these two groups produce some inferior quality of paddy due to land situation which they do not retain for self-consumption, rather dispose off it in order to purchase superior quality of paddy/rice for home consumption. Hence the repurchase pattern shown by larger classes is not due to their distress sales. Thus our present finding corroborates the observation made by
Upender and Gupta-Majid that the extent of repurchase declines with the increase in size class (Upender, 1990 & Gupta-Majid, 1965).

In the system of subsistence farming for produce, such as, the production of paddy as in Barak Valley consumption is an important determinant of marketed surplus, because both production as well as consumption involves the same crop. Sengupta maintains that there is an inverse relationship between consumption and marketed surplus on the condition that production remains the same (Sengupta, 1998). M. Upender also realized that there is an inverse relationship between proportion of retention for domestic consumption to total output and the quantum of marketed surplus, according to size holdings (Upender, 1990). Since farm consumption is considered as an important determinant of marketed surplus, and higher consumption implies lower volume of marketed surplus and vice-versa, an analysis of the consumption behaviour of the farmers with respect to marketed surplus of each size class is pertinent to explain the behavioural pattern of marketed surplus.

The figures in table-3 describes that size class of 0-1 hectare consumes as high as 40.69 percent of output and therefore makes a small contribution to net marketed surplus (hereinafter referred to as marketed surplus) as 0.52 per cent of output. The second group with 37.98 per cent consumption and the third group with 24.86 per cent consumption contribute as much as 19.38 per cent and 36.43 per cent respectively as net marketed surplus. The largest group of 3.01 hectare & above consumes the lowest level of 16.36 per cent showing 35.22 per cent as marketed surplus. Thus the presumption of inverse relationship between farm consumption and marketed surplus is found valid here. As marketed surplus of the largest group declines only at a marginal rate in relation to third group, the inverse relationship between consumption
and marketed surplus can be observed for each of the size classes. Moreover, the study finds that there is a throughout negative linear relationship between consumption as a proportion of production and the size-class. It also traces a positive linear association between marketed surplus as a proportion of output and size class of holdings. We can therefore reach to the conclusion that domestic consumption relates negatively with marketed surplus. Hence, our hypothesis of consumption being an important determinant of marketed surplus is confirmed here. This finding confirms Sengupta's realization of inverse relationship between consumption and marketed surplus in accordance of size groups (Sengupta, 1998). In other words the study concludes that consumption at farm level is a significant determinant of marketed surplus of paddy in the Barak Valley of South Assam.

The highest level of marketed surplus shown by the third group may possibly be due to keen interest drawn by the farmers belonging to that particular group in participating farming activities. Hence a comparatively higher level of consumption by this group than the largest group may not possibly bring down its marketed surplus. Interestingly, however, it is due to the apathetic attitude of the farmers belonging to the largest group with some incomes from non-agricultural sources, they are not actively engaged in cultivation. They usually let out their plots on 50-50 product-share basis to the small and poor farmers for carrying out the production activities. This may be a possible explanatory factor for which marketed surplus as a proportion of output for the largest class of 3.01 hectare & above is somewhat less than its immediate preceding class, despite recording the lowest level of consumption.

Our analysis on the behavioural pattern of per capita and per household consumption also reveals that there exists a direct relationship between consumption and size class. This indicates that as the size of holding
increases farmers achieve better and better position with respect to per capita and per household consumption. Similarly our analysis on the per capita and per household marketed surplus with respect to size group reveals that with the increase in size class marketed surplus both in per capita as well as per household rises at an increasing rate. The per capita marketed surplus (NMS per head) for the first, second, third and the largest group are revealed as 0.03, 1.27, 4.13, and 6.11 quintal respectively (table-1). Likewise, the marketed surplus per household (NMS per family) for the first and second group is found as 0.25 and 11.39 quintal respectively, whereas for the third and fourth group the same is 35.33 and 58.01 quintal respectively (table-1). The study, therefore, unveils the positive relationship between marketed surplus (per capita and per household) and the size class. It also shows a positive relationship between farm consumption (per capita and per household) and size groups (table-3). This implies that consumption per capita and per household relate positively with the marketed surplus per capita and per household, according to size class. However, such a pattern of farm consumption per capita and per household cannot explain its contradictory relationship with marketed surplus per capita and per household. Because, the per capita and per household marketed surplus may largely be influenced by the output factor, rather than by per capita and per household consumption. More elaborately, the consumption per capita and per household by smaller two groups is found lower because of their lower level of output only, and not because of higher amount of sales, keeping farm population as a constant factor. By virtue of their small holding coupled with serious nature of poverty they cultivate the land mainly for consumption purpose. Apart from their paddy consumption they badly need some cash money to meet other requirements in the family. Consequently, often at the cost of their consumption they dispose of certain quantity of paddy to receive the required cash amount. As a result, their per capita consumption comes
down below the minimum level. Since both of their per capita and per household consumption is not satisfactory, we cannot conclude that it is because of their higher consumption marketed surplus of smaller groups is negligent. Of course the smaller volume of output is responsible for that. Conversely, the farmers belonging to larger two groups attain satisfactory level of consumption due to higher level of output and sound economic condition. As mentioned earlier, with some non-agricultural sources of income they do not rely upon cash money to be received from paddy sales to maintain their other family expenditure. They generally dispose off their surplus produce over and above their sufficient consumption requirement, and not at the cost of their consumption. It is thus clear that a healthy rate of marketed surplus shown by larger groups is not because of their lower level of farm consumption. In this case possibly the output level of the farm size and farmer’s economic condition play important part in determining per capita and per household marketed surplus. Moreover, it may be the productivity per capita and per household which are more active in affecting marketed surplus per capita and per household, which will be analyzed later.

The study observes negative linear relationship between repurchases and marketed surplus according to holding sizes. It can be traced that the smallest class with 24.05 per cent as the highest share of repurchase offers only 0.52 per cent marketed surplus, which is the lowest among other size classes. The second group with 12.34 per cent of repurchase shows its marketed surplus to the extent of 19.38 per cent. Whereas the third and the largest groups with 1.93 per cent and 1.58 per cent respectively as repurchases contribute 36.43 per cent and 35.22 per cent respectively as their marketed surplus. It is, therefore, revealed that repurchase by the farmers relates positively with proportional consumption of output and negatively with marketed surplus, showing that higher the percentage of repurchase to total consumption of the
group lower is the net marketed surplus and vice-versa. So the proportion of repurchase in the volume of farm consumption is an important determinant of net marketed surplus. However, the percentage of repurchase by the largest group is very negligent and slightly lower than the third group, which is not effective in raising the net marketed surplus of the group. The largest group experiences a slight lower percentage of marketed surplus than the third group. Again the higher magnitudes of repurchase by smaller two groups indicate larger volume of distress sales, which is a causative factor for lower level of net marketed surplus postulated by these two groups. Hence, the strength of repurchase in determining the level of net marketed surplus for the first two groups is relatively much more than the larger groups. Besides, the large and economically rich farmers normally repurchase superior paddy in order to replace inferior one for their family consumption. This makes us confirm that repurchase is not so far an effective factor of the net marketed surplus contributed by larger two groups. The present nature of finding therefore reinforces Upender’s observation that the extent of repurchases declines as the farm size increases (Upender, 1990). The per capita as well as per household consumptions follow a direct relationship with the holding sizes. This finding however does not accord with the fluctuating behaviour of per capita and per household consumptions according to size class, as revealed in Sengupta’s study (Sengupta, 1998).
Section IV. 5: FARM POPULATION AND THE PATTERN OF CONSUMPTION

It has been maintained that farm population is a determinant factor of farm level consumption and both population and consumption vary directly with each other. Higher strength of farm population implies higher volume of domestic consumption and the opposite too, which indicates inverse relationship between consumption and marketed surplus. However, consumption is affected not only by farm size of population but also by dependency burden on the working population (ratio of dependent population to work force) as well as by the consumption habits of the farmers. A perusal of table-4 reveals how consumption at source is related with family size as well as dependency burden of the size groups. The dependency burden or dependency load is defined as the proportion of the minor, old and disabled to the working population of the group. The total number of population in a group includes the number of minors, old and disabled population in addition to the number of working members. The old and disabled persons and minors in the farm family constitute dependency load on working population. On the other hand, the mean size of family has been calculated by dividing the total number of population in a group by the number of households belonging to that group. Since dependent population consumes without making any net contribution to production the study assumes it as greater influential factor in determining the level of farm consumption as well as marketed surplus. So perhaps it is not the size of family but the dependency ratio in the farm family which works more as an important determinant of consumption of paddy or rice at source.
It is revealed that the largest class of 3.01 hectare and above occupies the highest rank in terms of farm size showing around 10 persons per family, whereas the same is around 8 persons per family for the smallest class. The second and the third group each records around 9 persons per family which is also the average farm size of all the size groups under consideration. This shows that there is not much difference between size groups in terms of family size. The smallest group with 8.05 farm size consumes 40.69 per cent of output which is the highest level of consumption among all size groups. The second group with 8.93 and the third group with 8.56 family sizes represent their consumption levels as 37.98 per cent and 24.86 per cent of output respectively. Whereas it is the largest group which attains the lowest level of consumption of 16.36 per cent with 9.50 size of family. This indicates that farm size of the group fluctuates with the increase in size class, while farm consumption varies inversely with size groups. This leads us to confirm that mean size of the farm family does not have much influence in determining the level of paddy consumption. This may be due to the nature and distribution of dependent population among the size classes which may have greater weightage in determining the level of farm consumption.

Taking the minors, the old and the disabled as decompositions of dependency burden, 38.29 per cent of total population of the size group 0-1 hectare has been found as minors and 7.43 per cent as the old and disabled persons. These together constitute 45.71 per cent dependency burden on working population for the first group. The second group with 34.55 per cent minors and 9.73 per cent as the old and disabled bears 44.28 per cent dependency load. Whereas the dependency load of the third group is to the extent of 42.91 per cent decomposing 36.59 per cent as minors and 6.32 per cent as the old and disabled. The largest class, with its combination of 33.68 per cent and 8.59 per cent as the minors and the old and disabled, represents 42.28 per cent dependency load.
Table 4

CONSUMPTION AND THE PATTERN OF FARM POPULATION

<table>
<thead>
<tr>
<th>Size Class</th>
<th>I 0 - 1 hectare</th>
<th>II 1.01 - 2.0 hectare</th>
<th>III 2.01 - 3.0 hectare</th>
<th>IV 3.01 hectare &amp; above</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumption as p.c. of production</td>
<td>40.69</td>
<td>37.98</td>
<td>24.86</td>
<td>16.36</td>
<td>26.98</td>
</tr>
<tr>
<td>Farm Population (in number)</td>
<td>700</td>
<td>822</td>
<td>522</td>
<td>570</td>
<td>2614</td>
</tr>
<tr>
<td>Mean Size of the family (in number of population)</td>
<td>8.05</td>
<td>8.93</td>
<td>8.56</td>
<td>9.50</td>
<td>8.71</td>
</tr>
<tr>
<td>Child Population (in number)</td>
<td>268</td>
<td>284</td>
<td>191</td>
<td>192</td>
<td>935</td>
</tr>
<tr>
<td>P.C. of minors to total population of the group</td>
<td>38.29</td>
<td>34.55</td>
<td>36.59</td>
<td>33.68</td>
<td>35.77</td>
</tr>
<tr>
<td>Old and Disabled Population (in number)</td>
<td>52</td>
<td>80</td>
<td>33</td>
<td>49</td>
<td>214</td>
</tr>
<tr>
<td>P.C. of old &amp; disabled population</td>
<td>7.43</td>
<td>9.73</td>
<td>6.32</td>
<td>8.59</td>
<td>8.19</td>
</tr>
<tr>
<td>Dependent Population (in number)</td>
<td>320</td>
<td>364</td>
<td>224</td>
<td>241</td>
<td>1149</td>
</tr>
<tr>
<td>P.C. of dependency burden on working population</td>
<td>45.71</td>
<td>44.28</td>
<td>42.91</td>
<td>42.28</td>
<td>43.96</td>
</tr>
</tbody>
</table>
The average dependency burden for the Barak Valley as a whole is as high as 43.96 per cent of total population, showing the composition of 35.77 per cent minors and 8.19 per cent old and disabled, on the working population of 24.14 per cent in aggregate. Thus it is observed that dependency ratio declines with the increase in size holdings establishing a negative relationship between dependency burden and size class, which is also true in case of consumption and size class. It is thus apparent that dependency ratio has the direct relationship with per cent consumption of output revealing that as dependency burden declines consumption also decreases with the increase in size holdings. Table-4 presents that the first group with 45.71 per cent dependency load records the highest level of consumption of 40.69 per cent, followed by the second group showing 37.98 per cent consumption with 44.28 per cent as dependency load.

The consumption level and dependency burden of the third group are 24.86 per cent and 42.91 per cent respectively, whereas the same are 16.36 per cent and 42.28 per cent respectively for the largest group. This indicates that higher and higher level of consumption is due to larger and larger ratio of dependency burden to working population of the group. The smallest class with the largest dependency ratio exhibits the highest level of consumption at source, while the largest class with the minimum load of dependency represents the lowest level of farm consumption. The dependency load and consumption level of the second
group are lower than the first group, and that of the third group lower than the second group. This confirms that it is not the number of population in the family or family size but the dependent population at farm, which works as a significant determinant of consumption. The reason being that even a small size of family with higher dependency ratio consumes higher proportion of output than a large family size with lower dependency. Because, the dependent population in the family consume paddy at source without making any net contribution to output. As a result a farm family with maximum dependency and minimum work force shows higher proportional consumption and vice-versa.

Out of the dependent population, however, it is the per cent share of minors at the farm family which affect the level of consumption than that of the percentage of old and disabled. It has been found that size class-I with the highest level of consumption records the share of minors to be 38.29 per cent which is also the highest among all other classes. On the other hand, the largest group with the lowest percentage of consumption shows 33.68 per cent of minors which is also the lowest compared to 34.55 per cent and 36.59 per cent for size class-II and size class-III respectively. Though the percent share of minors for the third group is higher than the second group, its consumption does not exceed the consumption level of the second group. This is due to the lowest share of its old and disabled persons to the total population showing as 6.32 per cent, for which its share of minors is still significant in affecting the volume of consumption. It is therefore confirmed that more children in the farm family imply larger volume of its paddy consumption. Table-4 further reveals that the highest level of consumption is shown by the smallest group which represents 7.43 per cent share of the old and disabled persons in the farm family. It is the second group which has the highest share of old and disabled to the extent of 9.73 per cent, whose
percent consumption is however lower than the first group. Again the
largest group with the lowest consumption level does not show the lowest
share of old and disabled persons showing 8.59 per cent, whereas it is
6.32 per cent in case of the third group which is the lowest. For the
valley as a whole the share combination of minors is as high as 35.77 per
cent against the share combination of old and disabled which is only to
the extent of 8.19 per cent. Hence, it is the ratio of minors to the
dependency burden than the old and disabled, which is a crucial
determinant of paddy consumption at the farm level in the Barak Valley
of South Assam.

The study also assumes consumption habit of the farm population as an
influential factor determining the volume of marketed surplus. Since rice
is a staple diet for the people in Barak Valley, farmers in general and
those who belong to smaller two groups in particular carry on
subsistence nature of cultivation only to satisfy their consumption needs.
Farmers of these two groups do not have access to any other alternative
nutritious food except rice. Though some kind of local fruits and fish are
produced by the farmers themselves, the poor farmers instead of
consuming these have to sell in the market for meeting their cash
requirements. This naturally leaves the farmers with very little nutritious
choice of consumption and so they have to rely upon the mere
consumption paddy. Thus paddy remains the only food component of
poor and small farmers for maintaining their minimum nutrition,
whereas for large farmers it is the staple diet which is consumed along
with other nutritious items. Besides, the work force engaged in
cultivation necessitates more consumption than the non-working
members in the family on account of their higher requirement of physical
energy to cultivate land. Therefore, it may be due to higher engagement
of population in cultivation belonging to smaller two groups their paddy
consumption is higher. A perusal of table-4 reveals that direct
engagement of population in cultivation for the first group is the highest showing as 26 per cent, and the group consumes the highest level among all other size classes. Contrary to this, the largest group with the lowest per cent consumption of output witnesses only 21.05 per cent of population engaged in cultivation directly, which is being the lowest among all other groups. Following the first group, the second group with second highest consumption level shows to the extent of 24.57 per cent of working population, whereas it is 24.33 per cent for the third group which has the second lowest level of consumption. This establishes the fact that work force on land as per cent of population of the group is directly related to the level of farm consumption and inversely related with the size holdings. As the proportion of engagement of population in cultivation decreases the level of farm consumption also decreases, with the increase of size class. Therefore traditional consumption habit of the working population on land can be considered as a significant indicator of paddy consumption at source in Barak Valley.

Section –IV. 6: FARM POPULATION AND THE PATTERN OF MARKETED SURPLUS

Since the number of people in the farm is assumed to have direct influence on the volume of consumption which in turn determines marketed surplus of paddy, it is maintained that farm population or family size is an indirect determinant of marketed surplus. Moreover, the component of dependent population in family size bears significant impact on the quantum of marketed surplus indirectly through consumption, since they do not contribute in any way in generating marketed surplus.
Table-5 presents that size class-I with the lowest family size, that is, 8.05 persons per family accounts for only 0.52 per cent of output as marketed surplus which is also the lowest compared with other classes. As against this, size class-III witnesses the highest level of marketed surplus to the extent of 36.43 per cent, with the family size of 8.56 persons per family. The largest class with the highest size of family (9.50 persons per family) exhibits 35.22 per cent as marketed surplus which is slightly lower than its immediate preceding class. Interestingly, it is found that although size class-II is having almost the same size of family (8.93 persons per family) with the size class-III (8.56 persons per family), it’s marketed surplus is revealed as 19.38 per cent which is approximately half of the marketed surplus of the third group. It is thus seen that lower family size does not indicate higher proportion of marketed surplus as it is the case of the smallest group, while higher family size is not the cause of lowering down the level of marketed surplus which as is the case of higher classes. Further, the average number of population per family does not vary significantly and looks almost same for all the size groups. The size of family therefore is not much effective in determining marketed surplus and there is no linearity in the relationship between family size and marketed surplus as per cent of output. The percent share of population of the group to total population of all the groups reveals that the third group has the lowest share of population of 19.97 per cent. As against this, the highest share of 31.45 per cent is attained by the second group. The smallest and the largest group show their population shares as 26.78 per cent and 21.80 per cent respectively. All these delineate that both the size of farm family as well as the population share of the group have a fluctuating trend with respect to size class of holdings. Interestingly, it is found that though the population share of size class-II reaches the highest level, yet its marketed surplus is far better than the first group. Hence, it can be concluded that farm population does not
have negative impact on marketed surplus through consumption and therefore population does not act as an indirect determinant of marketed surplus.

Table – 5
MARKETED SURPLUS AND FARM POPULATION

<table>
<thead>
<tr>
<th>Holding Size</th>
<th>I 0 - 1 hectare</th>
<th>II 1.01 - 2.0 hectare</th>
<th>III 2.01 - 3.0 hectare</th>
<th>IV 3.01 hectare &amp; above</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Marketed Surplus as per cent of output</td>
<td>0.52</td>
<td>19.38</td>
<td>36.43</td>
<td>35.22</td>
<td>26.36</td>
</tr>
<tr>
<td>Mean size of family (in number)</td>
<td>8.05</td>
<td>8.93</td>
<td>8.56</td>
<td>9.50</td>
<td>8.71</td>
</tr>
<tr>
<td>Population share of the group as percent of total population</td>
<td>26.78</td>
<td>31.45</td>
<td>19.97</td>
<td>21.80</td>
<td>100</td>
</tr>
<tr>
<td>Percent of dependency burden on working population</td>
<td>45.71</td>
<td>44.28</td>
<td>42.91</td>
<td>42.28</td>
<td>43.96</td>
</tr>
<tr>
<td>P.C. of population engaged in cultivation</td>
<td>26.00</td>
<td>24.57</td>
<td>24.33</td>
<td>21.05</td>
<td>24.14</td>
</tr>
</tbody>
</table>

Source: Field Survey

Notwithstanding, it is the dependency load on working population in the farm family which has definite strength in determining the level of marketed surplus indirectly. It has been observed that dependency
burden is inversely related to marketed surplus as well as to the holding sizes. No other size class is there which has dependency load as high as the smallest group with 45.71 per cent, which contributes only 0.52 per cent of output as marketed surplus. As the extent of dependency decreases from 44.28 per cent of the second group to 42.91 per cent for the third group, the level of marketed surplus increases steeply from 19.38 per cent to 36.43 per cent of the groups respectively. It is only the largest group in which case though the dependency rate decreased to 42.28 per cent its marketed surplus does not increase and remains even lower than the third group. However, since the difference between dependency levels of the third group and the largest group is very negligent, and since marketed surplus of the largest group has a marginal deceleration with the third group we can accept that dependency rate varies directly with consumption and inversely with marketed surplus according to size groups. Hence, we can reach to the conclusion that it is not simply the population in the farm or family size, but the proportion of dependency load to working population of the group which is an important indicator of farm consumption and thereby marketed surplus of paddy.

Table-5 also invites our attention to the fact that direct engagement of farm people in cultivation is indirectly related to the size class. As the holding size increases the proportion of work force directly engaged in cultivation is get declined. It is found that higher engagement in cultivation does not indicate higher marketed surplus. Size class-I with the highest per cent engagement of population of 26 per cent accounts for only 0.52 per cent marketed surplus which is the lowest. Conversely, the highest level of marketed surplus is attained by size class-III with its direct engagement of 24.33 per cent which is higher than the population engagement of the largest size. Size class-II, with 24.57 per cent of population engaged in cultivation which is approximate to size class-III
(i.e. 24.33 per cent), is far behind the size class-III with respect to its contribution towards marketed surplus. Thus there exists an inverse association between direct engagement of farm population and marketed surplus with respect to size class. Further, the table reflects a very slight variation in respect of the proportion of directly engaged population among the size groups. Therefore, the strength of direct engagement of population of the group is not so far an important factor in determining the level of marketed surplus according to our study. Factors like knowledge, skill, efficiency and productivity of the labourers which may have greater role than numerical engagement of population in cultivation while determining marketed surplus.

References:


Field Survey (2005-06): Conducted by the researcher through personal interview method in the Barak Valley of South Assam.


Sengupta, Keya (1998): Behavioural Pattern of Marketed Surplus in the Barak Valley of South Assam, Agricultural Situation in India, October.
