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# **FOOD SECURITY AND PDS IN TRIPURA: A POLICY INTERVENTION**

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## **Abstracts**

Tripura is facing the problem of food insecurity for quite some long period of time and lagging behind the most other states of India with respect to the development of human capital, agriculture and industry. Food security is one of the basic criteria for the formation and improvement of human capital and also productivity of human being. The working of PDS and other government policies have not been successful in achieving food security at the desired level. However the recent offtake pattern of PDS supply shows a decelerating trend and hence raises the question of maintaining the PDS in the state. The paper tries to analyse the food security condition of the state during the last two decades and the working of PDS in Tripura with some macro measures.

## **FOOD SECURITY AND PDS IN TRIPURA: A POLICY INTERVENTION**

### **INTRODUCTION**

Tripura is one of the poorest states (in terms of per capita State Domestic Product (SDP)) in the Indian Union.<sup>1</sup> The state, belonging to the north-eastern part of the country has drawn attention for the last few years for its escalating insurgency problems. In spite of several measures undertaken, reduction in poverty especially rural poverty over time in the state has not been appreciable. Among others level and intensity of poverty appears as a major retarding factor behind human development and thus hostile to overall development. Intensification of militancy activities has also emerged as a potential threat to the developmental prospects. These are the common problems facing almost all the north-eastern states. According to the estimates of the Modified Expert Group proportion of people below poverty line in the north-eastern region including Tripura though decreased from around 60 per cent in 1977-78 to 39.35 per cent in 1987-88 it again increased to over 45 per cent in 1993-94<sup>2</sup>. Government of Tripura estimates however shows that present extent of poverty in Tripura is much more than that of other north-eastern states. The national figure of head count measures of poverty ratio however has been continuously declining over time.<sup>3</sup>

Per capita SDP, level and incidence of poverty (inequality of income distribution) are the important indicators of food security and level of living standard of the inhabitants of any particular region. World Bank policy study entitled *Poverty and Hunger* has shown that in 1980 a large portion of population of developing countries were suffering from severe nutritional deprivation (in terms of calorie intake) and under-nourishment (World Bank 1986)<sup>4</sup>. A large section of population in developing countries like India largely in backward states like that of Tripura has limited access to food in terms of their entitlement or supply of foodgrains in the food deficit areas. It thus requires a strong public policy to arrange for procurement and proper distribution of essential items to meet the necessities of general public at their affordable price and fulfil their nutritional requirements.

In spite of a food deficit state and having a low level of per capita SDP Kerala has been successful in achieving a notable growth of human development indicators (Dreze and Sen, 1995). The government of Kerala through the statewide coverage of public distribution system for providing access to essential commodities has benefited the under-

privileged sections of society and has reduced the impact of poverty (Government of Kerala, 1994). Whereas one of the richest state; Maharashtra (in terms of per capita SDP) has not been successful in reducing rural poverty. A majority of population is still suffering from shortfall of calorie intake in both rural and urban areas (Suryanarayana, 1999).

It is one of the duty of any government to make some prospective policies to take necessary steps to provide basic minimum needs of the people so that no one die of starvation. Supply of food-crops may be in short due to low capacity of production than the requirement of the masses or any sudden crop failure in the country owing to any kind of natural calamities. In that case the deficiency is fulfilled by importing from outside or releasing the past stock through different channels<sup>5</sup>. Due to any disturbances, essential items may not reach to the proper place (where there is acute shortage of food) and hence leading to a sharp rise in prices and a section of population may loose their entitlement to afford to buy their basic minimum needs. In spite of surplus production in one region and deficit in other region with restricted trade it may not be possible to make available food to the people of the deficit zone<sup>6</sup>. Properly maintained public distribution system (PDS) in that case is of immense importance to them especially to underprivileged classes.

The Public distribution system (PDS) in India has been maintained to reach the essential commodities mainly the food items to all sections of population especially the poorest of the poor to give them, security of foodgrains and also to fulfil their basic minimum needs at some reasonable cost. The primary objective is to provide partial support to the daily basic requirements of the people at some reasonable rate. But the galloping change in agrarian scenario in India over past few decades and time to time changes in policies regarding prices and allocation of items may raise question: whether PDS should be the maintained properly or extended further to bring more equitable distribution or abolished and market be given a free hand to decide on the demand-supply mechanism.

In Tripura where a major part of population (84.7 per cent) live in rural areas earn their livelihood mainly from agricultural activities (61.47 per cent according to 1991 Census Report). Though a major part of population continue to struggle with poverty (absolute and relative) recent past off-take pattern of main cereals supplied through PDS shows a declining trend. On the other hand Tripura is a food deficit state (Government of Tripura, 1999). According to the Government Report there was food deficit in the state since the dawn of independence. The gap between requirement and production was

increasing from 10.38 thousand tonnes in 1950-51 to 119.26 thousand tonnes in 1968-69 (Table-1). It then reduces to 68.01 thousand tonnes in 1977-78 and then started climbing continuously. In spite of the arrival of green revolution in the country the state gradually approaching towards acute food shortage. According to the estimates of expert group the deficit was 178.28 thousand tonnes in 1996-97.

Table-1  
Gap between Requirement and Production of Foodgrains in Tripura (in thousand tonnes)

Year	Total Requirement	Total Production	Net Gap
1950-51	145.38	135.00	- 10.38
1960-61	257.40	159.12	- 98.28
1968-69	339.67	220.41	-119.26
1977-78	443.36	375.35	- 68.01
1989-90	603.40	473.27	- 130.13
1996-97	723.53	545.25	- 178.28

Source: Government of Tripura (undated), *Freedom at 50: Challenges to meet*, published by ICAT in association with Statistics Department.

Moreover according to some estimates the requirement of foodgrain in the year 1999-2000 would be 8.11 lakh metric ton (M.T.). It is estimated by considering 35.92 lakh projected population and taking into account 500 gm per capita per day average requirement as standard norms (though the Indian Council of Medical Research (ICMR) recommended norm of cereal consumption for subsistence is 370 gm per capita per day) and including 12.5 per cent as seed, feed and wastage as well as 10 per cent for pipe line (Government of Tripura, 1999). Where as the expected production of the same are 5.93 lakh M.T. and thus a shortfall of 2.18 lakh M.T. than requirement. The deficit is partly met out of import mainly from other states of the Country through open market and PDS maintained by the Government. The government of Tripura has taken some stringent steps to almost double the present production of foodgrains by 2009-2010 and become self-sufficient. The present paper tries to analyse *the food security problems and recent trend of public distribution conditions and also to unearth the relevance of PDS in Tripura*.

The next section deals with the discussion of the basic problem of food security. The problem is analysed in the context of Tripura vis-à-vis, India as a whole. It is analysed in terms of different conventional measures based on some macro economic evidences at the state level. Then the role of PDS in Tripura in satisfying public needs is discussed. The nature and causes of changes in importance of PDS during last few years is examined. A sum up of whole discussion and policy conclusion is incorporated in the last section. The whole analysis is based on the data collected from various issues of *Some Basic Statistics of Tripura, Statistical Abstracts*, Published by the Directorate of Statistics, Government of

Tripura; and *Monthly Bulletins* of Directorate of Food and Civil Supply, Government of Tripura.

### **THE PROBLEM OF FOOD SECURITY IN TRIPURA: SOME BASIC MEASURES**

Sometimes disparities or inequality of income distribution has been considered to explain the nature of food security on the presumption that the high-income groups have greater access to food crops. While the people with very low income or lying below poverty line has less scope of deriving food from different sources. Per capita availability of foodgrains (production plus net import) also gives an idea of food security in a region. Tyagi (1990) has considered economic and physical access to food while explaining food security in India. By economic criterion if there is a decline in the proportion of per capita income required to buy a unit of food or if there is a relative increase in per capita income at current prices over prices of items in the food basket then we can say that economic access to food has improved. By this criterion there has been an improvement in economic access to food in India 1970 (Suryanarayana, 1997). On the other hand if (i) there is a reduction in import of food as a proportion of domestic production and (ii) per capita availability of foodgrains increase then we can say that physical access to food has increased. By this criterion also physical access to food in India during last few decades has increased (Government of India, 1996: S-24).

If prices of food basket with respect to other commodities (wage or industrial goods) decline as happened due to green revolution in India the low income groups will be benefited more than the high income groups. This is because the low-income families spend a larger proportion of their income on foodgrains than the upper income group. Rao (1994) has evaluated this and concluded that indirect contribution of green revolution to equity, through food security and the decline in the relative prices of foodgrains are much more than its direct impact through absorption of labour in agriculture. However if the petty farmer produces some crops (suppose superior cereals, whose prices have declined more) and wants to sell those to buy some other desired crops (say inferior cereals, whose prices decreased relatively less) find it more costly and thus entitlement to food security may fall.

Production of food-crops in Tripura has recorded decelerating trend during the last two decades (Table-2). Per capita annual production of food-grains was 196.4 kg during 1980-81 and decreased to 187.1 kg and 137.2 kg during 1990-91 and 1998-99. Annual production of the principal food crop, rice was 190.0 kg per person during 1980-81 and

continuously reduced to 135.6 kg per head during 1998-99. On the other hand per capita annual production of total foodgrains in India was respectively 190.0 kg in 1980-81 and continuously increased to 211.3 kg in 1996-97. Per capita production of rice was 78.5, 88.03 and 86.2 kg respectively in 1980-81, 1990-91 and 1996-97.

Table-2

**Per-capita foodgrains production in Tripura and India per annum (Kg)**

	Tripura		India	
	Rice	Total Foodgrain	Rice	Total Foodgrain
1980-81	190.0	196.4	78.50	189.6
1990-91	181.8	187.1	88.03	208.4
1996-97	162.1	137.2	86.20	211.3
1998-99	135.6	165.4	--	--

Source: (i) Government of India, *Economic Survey (Various Issues)*

(ii) Government of Tripura, Directorate of Statistics, *Statistical Abstract*, 1988.

From Table-2 it is revealed that in 1980-81 production of foodgrains in Tripura per capita was much higher than the national average. While the value decreased over time and become much lower in 1996-97 than the national average. The changes in per capita production in Tripura went in opposite direction to that of the country as a whole. As the country has become self sufficient in foodgrain's production after green revolution and now even exporting a significant amount of food crops the state gradually acquired the status of member of food deficit zone. In spite of increase in absolute production reduction in per capita food production especially rice was due to rapid population growth, which was more than the rate of growth of total production. Annual exponential rate of growth of population was 2.95 per cent during 1981 to 1991 while the trend rate of growth of foodgrains production was 1.89 per cent per annum during 1980-81 to 1998-99. Earlier following table-1 it has already been said that the state has already been running under deficit. Taking the amount of commodities that is required to be kept for using as seed, wastage and the stock in the pipeline at present availability of foodgrains from the domestic production in the state is much lower than the daily requirement of the existing population of the state<sup>7</sup>. The deficit was increasing during the last two decades and met by importing from other states and distributed through PDS and through open market though a part of states production also goes out to neighbouring Bangladesh when prices on that side remains notably high.

Like per capita foodgrain production; changes in per capita foodgrain availability or production and availability of cereal, per capita distribution through PDS and per capita net SDP, changes in real wage rate of agricultural labourer etc are some of the important

indicators of food security position or access to food. However production of food crop always may not be the proper guide to food security. If any region has comparative advantage in the cultivation of other crop/crops then cultivators will allocate land resources to produce that crop/crops and exchange through market to obtain necessities from other region. By doing so they can earn more and have more entitlement and access to food. Hence changes in cropping pattern can also be used as another indicator of level of food security.

Table-3  
**Some Indicators of Food Security in Tripura**

Variable	1980-81	1990-91	1996-97	1998-99
Per capita annual Net SDP at current prices (Rs)	1307	3370	5432	-
Per capita annual Net SDP at 1980-81 prices (Rs)	1307	1664.33	1557.93	-
Per capita foodgrain production (kg)	196.40	187.10	165.40	137.20
Per capita foodgrain availability (kg)	227.85	235.99	199.84	179.84
Per capita production of cereal (kg)	195.30	184.86	163.90	136.70
Per capita availability of cereal (kg)	226.89	234.03	198.53	179.40

*Source:* Author's estimates based on data from *Statistical Abstract of Tripura*, Department of Food and Civil Supply and *Census Reports (1981, 1991)* and projected population of 1998 made by the office of the Registrar General of India. For estimating net availability of food and cereal 12.5 per cent of production is kept for seeds, feed requirements and waste and allotment through PDS is added.

Note: -- indicates that the data was not available.

Table-3 reveals that per capita net SDP (at current prices) in Tripura increased from 1980-81 to 1996-97 from Rs 1307 to Rs 5432. However the value at constant prices (at 1980-81 prices) has decreased after 1990-91. Though there was an improvement in terms of per capita net SDP at constant prices during eighties that shows an improvement of food security in terms of economic access during nineties the change went in reverse direction. During that second period per capita SDP growth was much lower than the growth of general price index. During 1990-91 to 1996-97 per capita net SDP has increased by 61.19 per cent while general index of prices recorded an increase of 72.16 per cent during the same period. Index of prices of food articles has increased during the same period (1990-91 to 1996-97) by 86.57 per cent, which is also much greater than per capita net SDP growth and also of the general price index growth.

The physical access to food crop though can be examined by calorie intake, which is not possible here due to lack of availability of data it can be done from the availability of crops. The table exhibits that per capita availability of foodgrain especially cereals (net production plus supply through PDS if we assume that net import through other channels is nil) was sufficient to feed the people during the decade of eighties<sup>8</sup>. But the quantity available for the access of the people has been decreasing thereafter. Thus food security of

an average person especially the poor masses have decreased both in terms of physical and economic access.

### CHANGING CROPPING PATTERN

The cropping pattern change has also an important implication for food security in terms of economic and physical access. Though Tripura's agricultural performance has not been impressive like many other states of India over the past two decades we notice an uneven change in cropping pattern. The pattern like the other agriculturally developed states has changed in favour of high value and more commercial crops (*Statistical Abstracts of Tripura*, 1988 and various issues of *Some Basic Statistics of Tripura*). Potato and oilseeds particularly mustard are the most promising has been taking increasing proportion of gross cropped area over time. However rice, which is the staple food of the major inhabitants of the State, continues to occupy a major portion of gross cultivated area and also of major food production that is shown in Table-4. The agro-climatic conditions of low-lying areas are also conducive for the cultivation of paddy that may also be an important commercial crop for individual farms. The conventional idea of treating non-food crops as commercial crops no longer hold. Now any crop even the food crop can be a profit making crop enterprise and the farmers (small or large) can obtain other requirements or other food crops (like cheap food) in exchange of one crop (high priced food crop) cultivated in his own plot if the same has a competitive advantage and raise his entitlement.

Table-4

#### Proportion of Production of Major Food Crops to Total Foodgrain (in Percentage)

Year\Crop	Rice	Wheat	Maize	Gram	Other pulses	Pulses	Total Foodgrain
1980-81	96.72	2.56	0.159	0.04	0.52	0.56	100
1990-91	97.16	1.34	0.30	0.074	1.12	1.199	100
1998-99	98.46	0.81	0.364	0.028	0.34	0.37	100

Source: Directorate of Statistics, Government of Tripura *Some Basic Statistics of Tripura (various Issues)*.

From the above table it is noticed that rice occupies 97-98 per cent of total food crop production throughout the period of discussion. Proportion of pulses, which occupies an insignificant portion of total production of food crop, had increased during eighties it is declined thereafter rapidly. Maize also recorded an increasing trend in terms of its proportion to total food crop production though it is still a marginal crop like that of pulses. Proportion of production of wheat also registered a continuous declining trend. Production of other low value food crops has not increased because people prefer more the superior cereals than those inferior cereals in spite of the fact that the so-called inferior/coarse

cereals are as good as the superior cereals in terms of nutritional contents<sup>9</sup>. The small peasants mainly consume those coarse cereals though they produce superior cereals as the former is less costly than the latter and hence considered to be more commercial item (also see Nadkarni, 1980). The preference of superior cereals over the coarse cereals not only due to the competitive price advantage but also due to more net expected return from a single plot during the whole crop year as is happened in case of West Bengal (De, 2000; Nadkarni, 1986).

It is also noted that though total cereal and food crop production increased during the last two decades per capita production has decreased because the population growth was much rapid. An idea of changes in food security in terms of economic access can also be obtained from the changes in real wage of rural labour force. But the data relating to those were not available in this case and hence we cannot examine the problem by this criterion. Index of prices of agricultural labourer or middle class people with respect to that of industrial worker also shows the potential economic access of rural poor.

Comparing the price index of middle class people with that of the industrial workers we noticed that the ratio of two price indices was 1.038 in 1981 and increased to 1.092 and 1.133 during 1988 and 1994 respectively. Similarly ratio of index of agricultural labourer to industrial worker was 0.973 in 1986 and increased to 1.057 in 1994 (Government of Tripura, 1995). The result implies that cost of living of agricultural labourer or of low-income group (who spends more on consumption article) has increased over time. Thus there is less improvement of economic status of poor people compared to the upper income group and hence consequent inequality. This is because the relative price rise of consumption basket of poorer has to some extent neutralised the augmented money wage income. This can also be explained better if one considers the changes in consumption expenditure of basic items as percentage of total expenditure and real income changes of different groups that reflect the changes in inequality.

The idea of changes in inequality and food security can also be known from the changes in work participation rate and composition of working population. From the Census data it is observed that work participation rate has increased very slowly from 29.69 per cent in 1981 to 31.13 per cent in 1991. During 1991, 26.49 percent of total main worker in the rural areas was agricultural labourer. The figure in 1981 was 26.58 per cent and virtually no change in rural agricultural labourer as percentage of total main worker. For the state as a whole agricultural labourer as percentage of total main worker were 23.38 in 1991 and the figure was 24.00 per cent in 1981. The reduction took place for both male and

female. During 1981, 22.62 and 32.06 per cent of male and female main workers were agricultural labourer. Both the figures decreased to 21.92 and 30.53 per cent according to 1991 Census Report. From this it is apparent that there is a general improvement of the situation in term of changing composition of working class that moved towards non-agricultural sector in proportional distribution. However though percentage of agricultural labourer decreased in absolute sense total number has increased. But it is not possible to say clearly whether the number of land-less labourer has increased due to deprivation and thus increasing inequality and loss of economics access or real income has increased with out considering the changing real wage or expenditure pattern of lower income group. But from the adverse changes in relative price index of agricultural labourer one can guess about the worsening economic access of that class. We can also indirectly judge the physical access to food from the changing operation of PDS.

#### **PDS IN TRIPURA: CURRENT TRENDS**

PDS is one of the major instruments through which government of Tripura tries to ensure physical access to foodgrains. This section examines the role of PDS in ensuring food security in the phase of declining food production in Tripura. Items supplied through government fair price shops are rice, wheat & atta, sugar, kerosene oil, plum oil, salt etc. Here we shall concentrate only on the major cereal items, rice and wheat<sup>10</sup>. In 1990, Tripura lifted 138.6 thousand M.T. of rice for the public distribution system from the central pool<sup>11</sup>. Where as total yearly allotment was 169.2 thousand M.T. that was still below the yearly requirement, 174 thousand M.T. This indicates, average monthly lifting of rice was 11.55 thousand M.T. i.e. 81.56 per cent of average monthly allotment (Table-5). In 2000 (up to the month of July) average monthly lifting of rice was 7.46 thousand M.T. that was only 49.27 per cent of monthly allotment. Thus percentage of allotment lifted has decreased. Out of total yearly allotment of 30 thousand M. T. of wheat in 1990 Tripura lifted only 15.895 thousand M.T. (52.98 per cent). Average monthly lifting during 2000 decreased to 0.276 thousand M.T. that is 21.56 per cent of monthly allocation. In total percentage of average monthly allocation of major cereal decreased from 77.56 in 1990 to 47.1 in 2000.

Table-5  
**Average Monthly Allotment and Lifting of Rice and Wheat in Tripura during 1990 and 2000 (up to July) (in Thousand M. T.)**

Item ►	Rice		Wheat		Total	
Year ▼	Allotment	Lifting	Allotment	Lifting	Allotment	Lifting
1990	14.10	11.55	2.5	1.325	16.6	12.875
1997*	13.94	13.55	1.50	1.31	15.44	14.86
2000	15.146	7.46	1.28	0.276	16.426	7.736

Source: Office of the Directorate of Food and Civil Supply, Government of Tripura.

Note: \* Average, monthly lifting is calculated from last 11 and 8 months figure available for rice and wheat respectively.

Per capita allotment and offtake of cereals are presented in table-6. The table reveals that per capita annual allotment of rice declined from 61.37 kg in 1990 to 54.4 kg in 1999. But the offtake of rice has increased slightly from 1990 to 1998. From the middle of 1999 it has been declining and this year Tripura has demanded less from the central pool following the decreasing demand. If the average monthly per capita allotment remains more or less same in 2000 (considering the first seven months' figures) it would be less than 50 kg and offtake of rice will be below 30 kg. Per capita annual allotment and offtake of wheat has declined continuously. In total we notice a significant decline in per capita allotment and offtake during the last decade.

Table-6  
**Per Capita Allotment and Off-take of Major Cereals in Tripura (1997-2000) (Kg)**

Item →	Rice		Wheat		Total	
Year ▼	Allotment	Offtake	Allotment	Offtake	Allotment	Offtake
1990	61.37	46.64	10.88	6.18	72.25	52.82
1997	47.98	46.58	5.15	3.80	53.13	50.38
1998	53.80	49.86	5.98	4.86	59.78	54.72
1999	54.40	47.25	4.67	2.66	59.07	49.91
2000, up to July	27.80	14.63	4.01	0.51	31.81	15.14

Source: Author's estimate from the data collected from Directorate of Food and Civil Supply, Government of Tripura and using projected population

The introduction of separate provision for the people below poverty line (BPL) and above poverty line (APL) in 1997 in order to provide some special facilities to the weaker section has led to rise in offtake of rice but it declined time and again. Table-7 shows how offtake of rice especially of APL and that of wheat declined after 1998. Prices and quantities offered for BPL category are different from that of APL (Directorate of Food & Civil Supplies, Govt. of Tripura)<sup>12</sup>. But the BPL quota also is always not fully utilised as is reflected from the figures of offtake. The offtake of rice and wheat of BPL is sometimes equal to the allotment and sometimes lower than their quota. However during the earlier period (1997, 1998) offtake of APL was much higher but decreased later. The increased

BPL quota is sometimes fully utilised because low issue-price of coarse and common rice than market prices (comparing Table-8 & endnote 12). The case was similar even in case of APL. But the offtake of wheat declined continuously because of time-to-time upward revision of control price and hence reducing the gap between ration shop price and market price. Not only that people prefer to consume rice more than wheat as the former is the primary food crop of the common people of the state. The offtake of wheat is thus decreased continuously, which is also due to time-to-time increase in issue price.

Table-7  
Monthly Offtake Pattern of Rice and wheat in Tripura during 1997-2000 (M.T.)

	1997			1998			1999			2000		
	Rice		Wheat	Rice		Wheat	Rice		Wheat	Rice		Wheat
	APL	BPL		APL	BPL		APL	BPL		APL	BPL	
January	---	---	1452	10408	2310	1524	11447	2310	1118	7747	2175	524
Feb	---	---	1078	10576	2310	1277	11788	2310	1356	8401	2237	349
Mar	---	---	845	11342	2310	1305	12332	2310	518	9813	2191	1011
Apr			1842	12177	2310	1143	12661	2310	480	2875	3294	16
May	9699	1788	497	11844	2310	1438	12512	2310	400	1533	3755	29
June	9171	1846	1190	12244	2310	1323	12331	2310	1210	1217	4161	5
July	10700	2006	787	13079	2310	1204	12986	2310	699	2002	4606	0
Aug	10602	2126	999	12956	2310	1549	12118	2310	751			
Sept	9767	2210	1513	13031	2310	2206	11365	2310	996			
Oct	9570	2210	980	9517	1311	1858	10176	2152	1140			
Nov	9541	2210	918	13653	2147	1120	---	---	759			
Dec	9144	2210	1153	11531	2310	1631	---	---	498			

Source: Directorate of Food and Civil Supply, Govt. of Tripura

Table-8  
Average Market Price of Rice and Wheat in Tripura (Rs)

	1997	1998	1999	2000 (up to July)
Medium	9.94	11.52	13.25	14.09
Coarse	9.13	10.63	11.96	11.56
Atta	9.67	10.04	11.42	11.82

Source: Directorate of Food and Civil Supply, Govt. of Tripura

Moreover because of the decreasing difference between market price and issue price the APL category people do not find any incentive as they can also support the market price without wasting time in collection from fair price shop. In addition, this year due to high level production and hence smooth supply of good quality rice at a reasonable price in the market from other states kept APL category people of the fair price shop<sup>13</sup>. The least square regression of APL offtake on difference between monthly average market price and issue price for common rice and of coarse rice gives:  $\ln Y = 9.18 + .0695 X^*$  and  $\ln Y = 8.355 + .146 X^*$ ; where Y and X represent the quantity of offtake and price

difference respectively. Here \* indicates that the t-value is significant at 5% and 1% level of significance by two tailed test. Moreover the quality of PDS supply is mainly of poor standard and hence people (especially those who can afford) do not prefer unless there is severe crisis. This raises the question of maintaining PDS supply for upper income group. Actually earlier the BPL people used to collect by using APL cards and lost their economic access after the upward revision of APL issue price. At present though subsidy per unit of quantity has been decreased total allocation per BPL family has been increased (doubled), which means an increase in total subsidy. Still the quota is not fully used by BPL families. The case is also similar if look at the allotment and offtake pattern of sugar. Earlier BPL families used resale some of the commodities collected from fair price shops to earn some money, which is reduced due to increase in control price. Similarly offtake of pulmolin oil, salt was never significant because people do not prefer to consume those unless there is severe crisis (Source: same as Table-7 and 8).

### **SUMMARY AND POLICY IMPLICATION**

The whole study reveals that Tripura has not been successful in achieving food security by some aggregate measures of physical and economic access to food. Though the country is approaching towards more food security, the state proceeding towards more insecurity in terms of physical access because of decreasing per capita food production and availability of the same. The worsening condition of the more vulnerable section of population is revealed from rising price index of middle class people or agricultural labourer relative to others. Along with that decreasing real SDP reveals reduction in economic access to food. But the summary measures do not reveal much of the dynamics of food security indices as may be revealed by institutional changes, production condition etc. and their implication at the micro level. Changes in real wage, consumption or expenditure pattern, and daily calorie intake may be examined to know the situation better. However in terms of decreasing per capita production in the sense of increasing work participation rate, decreasing percentage of agricultural labourer food security has increased. Still the occurrence of famine at large scale is very rare which means average calorie intake has increased.

Moreover quantity of PDS supply has not been fully utilised which indirectly means excess supply and hence more security as people are also collecting from open market. The recent fall in off-take of rice, wheat may be due to the lack of economic access especially of the poorest of the poor; low quality of PDS supplied items. However

more market dependence always may not mean more deprivation of weaker sections and loss of economic access. It is however the disturbing reality that high population growth in the past has resulted in more pressure on land and hence natural degradation and changes in the set of endowment. The fall in off-take does not undermine the distributive role of PDS. It may play the crucial role during crisis period by allocating necessities from the past stock procured from the surplus zone. Government of Tripura however recently has planned to take some strong measures to double food crop production by 2010 in the state and reduce dependence on others. But during this phase of rapid commercialisation and globalisation there is no such compulsion. Production of crops that are best suited to the particular agro-climatic condition and give best possible return should be encouraged. In that case the deficit of food crop may be met by importing from the surplus zone if it is less costly than that if produced on homeland and export the own products. For encouraging trade, infrastructure development should be given top-most priority. Analysis and policies should be directed towards proper cropping pattern choice and utilisation of land and other resources. Target should be shifted from present emphasis on only food production to improvement in resource allocation. Public investment in human capital is always welcome so that people can choose the right way and do better for sustained development.

#### Notes:

<sup>1</sup> In terms of per capita net state domestic product Tripura ranked 20<sup>th</sup> during 1980-81. Its position worsened thereafter to 23<sup>rd</sup> and 24<sup>th</sup> among the 25 states during 1990-91 and 1996-97 respectively (*Economic Survey*, 1990-91 and 1998-99).

<sup>2</sup> R P Singh (1999), "Strategies for Rural Prosperity: Some Policy Interventions", *Yojana*, June, pp. 12-17.

<sup>3</sup> R P Singh (1999) *op.cit.*

<sup>4</sup> See Reutlinger (1985), "Food Security and Poverty in LDC's" *Finance and Development*, Vol. 22.

<sup>5</sup> Tyagi D. S. (1990) "Increasing Access to Food through Interaction of Price and Technology Policies – The Indian Experience", in D. S. Tyagi and V. S. Vyas (eds) *Increasing Access to Food, The Asian Experience*, pp. 55-98. New Delhi: Sage Publication.

<sup>6</sup> See Chapter 2 of Poverty, Unemployment and Development Policy, United Nations, March 1975.

<sup>7</sup> National Commission on Agriculture, (1976), *A Report*.

<sup>8</sup> Assuming that per capita average requirement of an average person is 500 gm per day to meet the necessary calorie requirement.

<sup>9</sup> The NSS Report No. 238 (1976) shows the calorie and protein content of per kg of various cereals as follows: rice 3400 cal, 75 gm protein; wheat 3460 cal, 118 gm protein; jowar 3490 cal, 104 gm protein; bajra 3032 cal, 97.4 gm protein; maize 3420 cal, 111 gm protein; ragi 3280 cal, 73 gm protein; barley 3360 cal, 115 gm protein; small millet 2615 cal, 97.2 gm protein.

<sup>10</sup> Now from each fair price shop four kg. rice per adult per month and half the quantity per minor is allocated for both urban and rural areas uniformly. Similarly, wheat is allocated by 1 kg per adult and half the quantity per minor per month in both rural and urban areas uniformly.

<sup>11</sup> Information is taken from the official record of the Directorate of Food and Civil Supply, Government of Tripura.

<sup>12</sup> The issue price of coarse and common rice for BPL was Rs.4 since May 1997 and increased to Rs. 6.4 from April 2000. Price of BPL common and A-grade rice further revised to 6.15 from 1<sup>st</sup> Aug 2000. Price of common rice for APL increased from Rs.4 since May 1997 to Rs. 7.7 for APL from 15<sup>th</sup> Feb 1999 and

further increased to Rs. 12.05 from April 2000. The price of fine rice for APL also increased from Rs. 7.6 in Dec.1997 to Rs. 10 in Feb.99 and then to Rs. 12.25 from 1<sup>st</sup> Aug. 2000.

<sup>13</sup> The conclusion is reached after valuable discussion with the Director of Food and Civil Supply, Government of Tripura. But the error if any in the comment is solely of the author.

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