

Chapter 3

Dependency of Market and Non Market sources of Tribal People of Backward Districts of West Bengal

Tribes are mainly forest dependent (non-marketed) and their subsistence predominantly comes from their consumption for themselves and for generating income. That means they have been consuming what they can collect and/or produce. For tribal livelihood the prime aspect between market and non-marketed consumption gives a pattern of shift in consumption in their economic framework. Non-marketed consumption refers the significant environmental role on tribal subsistence. If we analyze consumption as a phenomenon of merging market and non-market components with the objective to study the changing pattern of these items, we have create a boundary between market and non-market sources of the consumption process and to examine the interrelations between the marketed and non-marketed consumption of the tribes which can be derived from the consumption process. The institutional and social framework in which consumption has been inserted significantly which determines the role of human activities on the nature and that environmental degradation has been closely related with a misappropriation in the consumption process towards domination of market connections and an excess of labour in the secondary community (Cogoy, M., 1995). So far as the present study on the sources of consumption expenditure is concerned, we have used the unit level data of National Sample Survey Organization over the rounds of 50, 61, 66 & 68. The main objective of this chapter is to analyse the changing variation the source of non-market and market consumption of tribes in the backward districts of West Bengal..

The plan of this chapter is as follows. Dependency of Non Marketed and Marketed Sources of Consumption of the Tribals has been analysed in Section 3.1. Section 3.2 deals with Trend of Net Marketed Percapita Consumption of Tribes. Section 3.3 tested the Econometric Analysis of Dependency on Marketed Consumption. Section 3.4 makes the summing up of the chapter.

3.1 Dependency of Non Marketed and Marketed Sources of Consumption of the Tribals

From the unit level data of National Sample Survey Organization (NSSO) we can compute the consumption sources that have been consumed by the tribal households. The sources of consumption items that have been available in the NSSO data are cash purchase, home stock, and free collection, exchange of goods, gifts and other. So, marketed consumption items are those consumption items that have been purchased by cash only. Whereas, home production, free collection, gifts, exchange goods and others are the cash free consuming items that either free collected from forest and or else and or home production and or from home production.

The four time frames that have been used to analyse the changing variation of the distribution of the sources of marketed and non-marketed consumption are 1993-94, 2004-05, 2009-2010 and 2011-12. As NSSO distributed the food and non-food items for their estimation, we can also take the same items as food and non-food. But if we study the sources of these items, it is quite natural that non-food items (clothing footwear, education, medicine etc.) have cent-percent marketed sources throughout the years except fuel and light. So it is not necessary to study the trend of sources for non-food items as mentioned in NSSO. For these reasons we have only take food items for our analyses and again we have distributed the food items into two

categories, basic food items and addicted food items along with fuel and light which termed as non food items for this objective.

The trend of the sources of marketed and non marketed consumption has been analyzed in the table below.

Table 3.1.1: Trends of Food and Non Food Consumption across Marketed and Non Marketed sources of the study area:

Year	Sources	Food	Non Food
1993-94	Marketed	53.02	49.92
	Non Marketed	46.98	50.08
2004-05	Marketed	73.59	56.59
	Non Marketed	26.41	43.41
2009-10	Marketed	81.60	65.65
	Non Marketed	18.40	34.35
2011-12	Marketed	87.30	65.17
	Non Marketed	12.70	34.83

Source: Authors' calculation based on the unit level data of NSSO (50th, 61st, 66th and 68th round)

Data states that in 1993-94 the percentage share of marketed sources of food consumption is 53.02; although the percentage share of marketed sources is 49.92 for non food consumption. In case of 2004-05 the percentage share in case of marketed sources of food items has been increased to 73.59, which has been increasing

continuously in 2009-10 and 2011-12, the percentage share becomes 81.60 and 87.30 respectively. That means over time the percentage share of non-marketed sources of food has been declining, it becomes 18.40 in 2009-10 and 12.70 in 2011-12. So, it can be easily analyzed that the dependency of forest on tribal livelihood has been declining over time. And it is not so far that the dependency of forest has been totally eliminated. Now let us analyse the trend of sources of non-food consumption across years. Data reveals that in 1993-94 the percentage share of marketed sources of non food consumption is 49.92, whereas the percentage share of non marketed sources of non food consumption is 50.08. In 2004-05 the percentage of marketed non food items has been expanding to 56.59 and alike food items the percentage share of non food items has been expanding in 2009-10 and 2011-12 also. On the other hand the percentage share of non food non marketing items has been decreasing over time; it becomes 34.83 percent in 2011-12. So, again we can conclude the dependency of non marketed sources has been decreasing. But the notable point is that though the percentage share of non food non marketable items is decreasing over time but it is greater than the food non marketed items that means tribes are still dependent on forest for non food items. For better analyzing the fact, let us discuss the item wise trends of food and non food consumption of tribes across marketed and non marketed sources of consumption.

Table 3.1.2: Trend of Food Consumption Item wise across Marketed and Non marketed Consumption Sources of the Backward Region:

Item wise Percentage of Food Consumption
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Items	1993-94		2004-05		2009-10		2011-12	
	Mark eted	Non Markete d	Mark eted	Non Markete d	Mark eted	Non Markete d	Mark eted	Non Markete d
Cereals	44.96	55.1	64.69	35.31	66.42	32.85	76.87	23.13
Pulses	72.68	27.32	92.68	7.32	93.38	6.62	94.41	5.59
Milk & Milk Products	26.47	73.53	66.76	33.24	72.74	27.26	71.88	28.12
Edible Oil	93.30	6.70	100	0.00	100	0.00	100.	0.00
Egg, fish, Meat	41.28	58.72	67.89	32.11	100	0.00	100.	0.00
Vegetables	51.06	48.94	85.13	14.87	85.22	14.78	90.76	9.24
Fruits (Fresh)	50.41	49.59	63.32	36.68	96.49	3.50	91.32	8.68
Fruits (Dry)	62.80	37.20	78.65	21.35	80.86	19.14	94.22	5.78
Salt & Sugar	81.23	18.77	88.50	11.50	99.42	0.58	100.	0.00
Spices	97.73	2.27	96.34	3.66	100	0.00	100	0.00
Beverages	83.61	16.39	88.04	11.96	95.32	4.68	99.92	0.08

Total	53.02	46.98	73.59	26.41	81.60	18.40	87.30	12.70
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Source: Authors' calculation based on the unit level data of NSSO (50th, 61st, 66th and 68th round)

The table 3.1.2 reveals the trend of percentage share of food consumption items across marketed and non marketed consumption of the tribes in backward region. Data reveals that across time all the food items have been tending towards the marketed sources. As we know tribes are mainly dependent on forest so their home production is also limited and again due to diminishing dependency on forest in the modern era marketed source of production become predominant. In 1993-94 the marketed percentage of cereals are 44.96, whereas the non marketed part is 55.1 percent. In the next year this dependency of non market source has been diminishing and becomes 32.85 in 2009-10, 23.13 in 2011-12. On the other hand, marketed source of cereal consumption has been increased to 64.69 in 2004-05, 66.42 in 2009-10 and 76.87 in the year 2011-12.

In case of pulses since 1993-94 to 2011-12 majority of the consumption comes from the marketed source. In 1993-94 more than 72 percent comes from marketed source and it has been increasing to 92.68 percent in 2004-05, 94.41 percent in 2011-12, on the opposite side of the coin the non marketed source of pulse consumption is 27.32 in 1993-94, 7.32 in 2004-05, 6.62 in 2009-10 and 5.59 in 2011-12. For milk and milk products, 26.47 percent comes from marketed sources and remaining 73 percent comes from non marketed source in 1993-94. But beyond that the marketed source of consumption for milk has been overlapping the non marketed sources. In 2004-05 marketed source gives 66.8 percent, in 2009-10 it becomes 72.74 and which remains more or less same in 2011-12 also. That means in case of milk and milk product the non marketed sources of consumption has been diminishing over time.

Edible oil gives a tending trend towards marketed source along the study period. In 1993-94 marketed source gives 93.3 percent. And non marketed source gives 6.7 percent only. Whereas, on the next year's 100 percent of edible oil comes from the marketed source. So, it is quite notable from here that tribes not produces or cultivates edible seeds now days. In case of egg, fish, meat we get the similar picture alike edible oil 41.28 percent comes from marketed sources and 58.72 percent comes from non marketed sources in 1993-94. In 2004-05 marketed sources has been increased to near about 68 percent in 2004-05 and finally becomes 100 percent in 2009-10 and 2011-12. So, forests cannot give meats and fish as like earlier days for tribes. That's why tribes became dependable to marketed goods.

As we know tribes are forest dwellers their cultivation is also based in the forest lands, though this percentage is also diminishing. The above scenario can be depicted from the above data. In 1993-94 non marketed gives near about 49 percent but from 2004-05 we saw a diminishing trend and it becomes less than 15 percent for 2004-05 and 2009-10 and finally becomes 9.24 percent in 2011-12. For marketed source in 1993-94 it is 51 percent and in 2011-12 it becomes 90.76 percent. In case of fresh and dry fruits, initially marketed and non marketed sources gives nearly same percentage of data. But beyond 2004-05 marketed sources overlaps the non marketed sources slowly but steadily. For fresh fruits marketed gives 96.49 percent in 2009-10, whereas dry fruits give 80.86 percent the same scenario can be found in 2011-12 also.

Salt, sugar and spice also follows the same trend line as like edible oil from 1993-94 to 2011-12 marketed source of consumption always suppress the non marketed consumption. For salt and sugar in 1993-94, 81.23 percent comes from marketed source and after that it becomes 88.5 in 2004-05, 99.4 in 2009-10 and finally 100

percent in 2011-12. For spices 97.73 comes from marketed sources in 1993-94 and after that becomes 100 percent in 2009-10 and also 2011-12.

Finally, as we know tribes are fond of beverages, so beverages can give an interesting trend. Data reveals that more than 83 percent of beverages come from marketed sources 2009-10; it becomes 88.04 percent in 2004-05, 95.32 percent 2009-10 and finally near about 100 percent in 2011-12. So, it is clear from the above table that all the food consuming items are fully or partly tending towards the marketed sources.

Table 3.1.3: Trends of Non Food Consumption Item wise across Marketed and Non marketed Consumption

Item wise Percentage of Non Food Consumption								
	1993-94		2004-05		2009-10		2011-12	
	Marketed	Non Marketed	Marketed	Non Marketed	Marketed	Non Marketed	Marketed	Non Marketed
Pan	67.67	32.33	96.07	3.93	96.87	3.13	96.63	3.37
Tobacco	97.79	2.21	96.34	3.66	96.93	3.07	99.40	0.60
Intoxicants	92.84	7.16	78.52	21.48	88.87	11.13	99.13	0.87
Fuel and Light	23.61	76.39	47.65	52.35	51.81	48.19	56.06	43.94
Total	49.92	50.08	56.59	43.41	65.65	34.35	65.17	34.83

Source: Authors' calculation based on the unit level data of NSSO (50th, 61st, 66th and 68th round)

The table 3.1.3 report the trend of non food consumption items over marketed and non marketed sources in the backward district of West-Bengal. In case of pan marketed sources gives near about 68 percent in 1993-94, beyond that near about 96 percent comes from marketed sources and the remaining 3 percent they can generate from their home cultivation that means non-marketed sources.

In case of tobacco more than 96 percent comes from marketed sources in 1993-94 and 2004-05 and 2009-10. But in 2011-12, 99.4 percent comes from the marketed source that means majority of tobacco generates from marketed sources. The same scenario has also seen for intoxicants also. Near about 93 percent comes from marketed sources in 1993-94 and it becomes 99.13 percent in 2011-12. As we know forest is a mine of woods. As the tribes are the forest gatherers they collect fuel woods from the forest that means in case of fuel and lights non marketed consumption for fuel plays an important part. In 1993-94, 76.39 percent of fuel and light comes from forest where as 52.35 percent in 2004-05, 48.19 percent in 2009-10 and 43.94 percent in 2011-12. So, it is quite clear that forest gives a majority of fuel wood till today, though the percent is diminishing. Before 2011-12 as NSSO does not publish any unit level data on consumption, after that primary data will help to evaluate the current situation of marketed and non marketed sources.

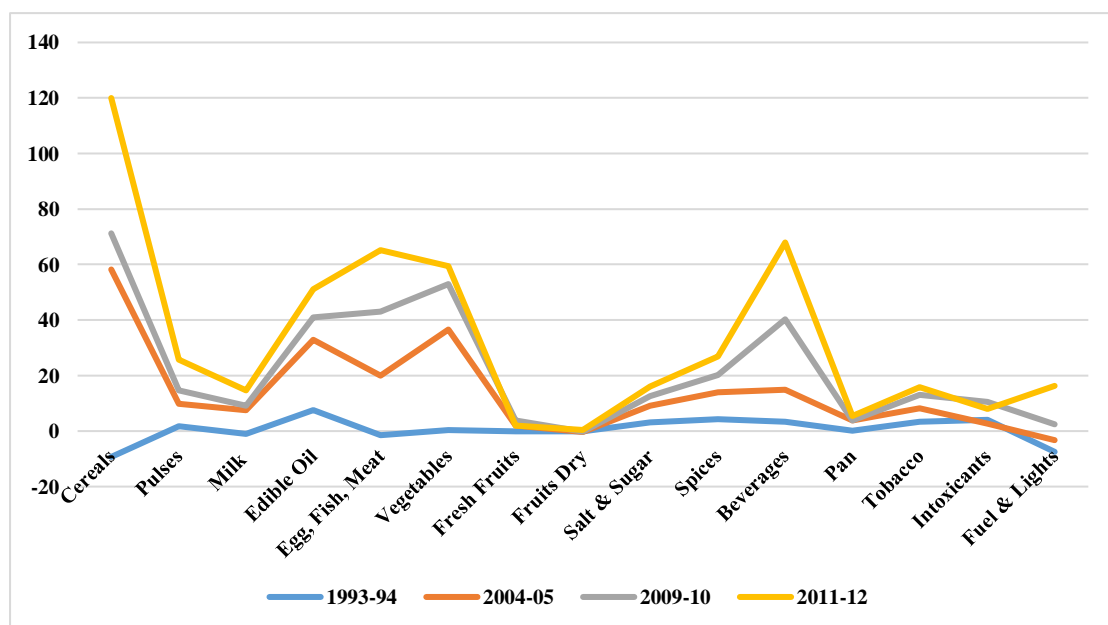
Now as we have already discussed about the percentage share of marketed and non marketed consumption let us check the trend of net marketed per capita consumption of tribes of different items across years.

3.2 Trend of Net Marketed Percapita Consumption of Tribes

From NSSO unit level data we can get the Monthly Percapita Consumption Expenditure (MPCE) of marketed and non marketed sources. If the marketed

percapita consumption has been denoted by ‘**m**’ and non-marketed percapita consumption has been denoted by ‘**nm**’ then the differences between marketed and non-marketed consumption has been denoted by (**m – nm**) which have been named as net marketed percapita consumption.

Figure: 3.2.1 Trend of Net Marketed Percapita Consumption (in Current Price) of Tribes of Different Items across Years:



Source: Authors’ calculation from the unit level data of NSSO (50th, 61st, 66th and 68th round)

The figure 3.2.1 depicts the trend of differences of marketed and non-marketed percapita consumption of tribes across years. In the year 1993-94, almost all consumption items has been equally distributed in marketed and non-marketed source of consumption, that is why the values of net marketed percapita consumption of all the items are tending towards the zero (0) value.

The trends of all the consumption items have been revealed the same over the years. Now from the table A5 given in the appendix we can say that as the tribes are mainly

dependent on forest resources but over time it has been observed that percapita difference of marketed and non-marketed of all the items have been increasing. In case of cereals initially the difference between marketed and non marketed percapita consumption expenditure is Rs. (-) 9.31 that means non marketed consumption suppresses the marketed consumption. But after that the net marketed percapita consumption has been increasing, it becomes Rs. 58.21 in 2004-05, Rs. 71.22 in 2009-10 and Rs. 119.97 in 2011-12. That means marketed consumption overlaps the non marketed consumption year after year. The same scenario has been found in case of Milk & Milk products and Egg, Fish and Meat also. In 1993-94 non marketed percapita consumption is slightly greater than the marketed percapita consumption, but after that marketed percapita consumption becomes greater and greater. Whereas in case of Pulses, Salt and Sugar, Fresh fruits, Dry fruits, Pan, Tobacco and Intoxicants reveals a more or less same trends slightly tending towards marketed percapita consumption over time.

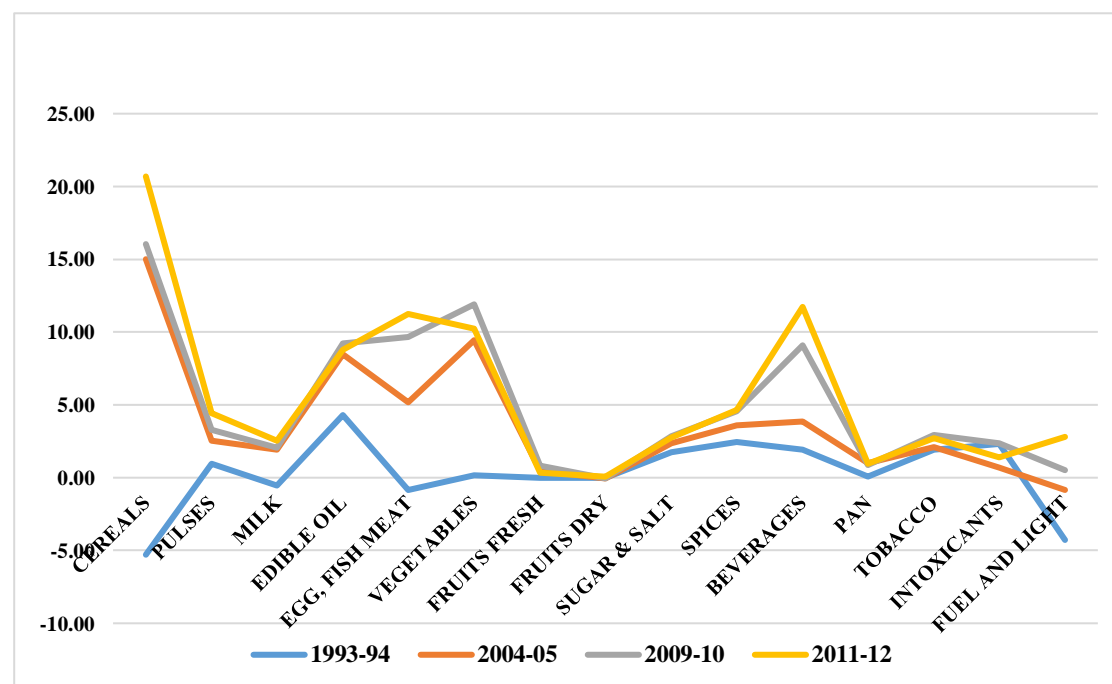
Now in case of Edible Oil, Vegetables, Spices and Beverages give a galloping marketed percapita surplus overtime. In 1993-94 net marketed percapita consumption of Beverages is Rs. 3.42, it becomes Rs. 13.88 in 2004-05, Rs 40.28 in 2009-10 and finally, Rs. 68.0 in 2011-12. Lastly, as discussed above Fuel and Light gives a different trend from other items. In case of 1993-94 the net marketed percapita consumption of fuel and light is Rs. (-) 7.56, Rs (-) 3.27 in 2004-05, Rs 2.36 in 2009-10 and Rs 16.26 in 2011-12.

So, finally we can say that the dependency of forest on tribes has been decreasing slowly but steadily over time; as a result tribes are tending towards marketed consumption.

It is quite clear from the NSSO unit level data of the year 1993-94, 2005-06, 2009-10 and 2011-12 it is quite clear that dependency on the marketed sources of consumption has been predominant on non marketed sources of consumption of tribes over time.

As the above scenario is discussed on the basis of current price, so we have adjusted the price by inflation. That means let us analyse the trend of net marketed percapita consumption in constant price of tribes across different items from 1993-94 to 2011-12. For converting current to constant price we have used the price deflators of NSSO over different rounds.

Figure: 3.2.2 Trend of Net Marketed Percapita Consumption (Constant Price) of Tribes of Different Items across Years from 1993-94 to 2011-12:



Source: Authors' calculation based on the unit level data of NSSO (50th, 61st, 66th and 68th round)

The figure 3.2.2 depicts the trend of differences of marketed and non-marketed percapita consumption of tribes across years in constant price. In constant price, the

trend line also denotes that tribes became dependent to marketed sources of consumption over non marketed sources of consumption. Table A6 given in the appendix reveals that in case of cereals Rs.(-) 5.29 is the net marketed value in 1993-94 that means at that point of time tribes are more dependent on non marketed sources. But beyond that over time tribes become market oriented, Rs.15 in 2004-05 and it becomes Rs.22.25 in 2015-16. This type of trends can also be seen in case of milk and egg, fish and meat also. That means after 1993-94 the net marketed percapita value becomes increasingly over time. Now in case if pulses, edible oil, vegetables, fresh fruits, pan, tobacco the value of net marketed percapita consumption becomes increasing since from 1993-94 to 2011-12. In case of dry fruits and intoxicants the trend values have given more or less same values over time. That means the fluctuation between marketed and non marketed sources is negligible. For beverages there has been an increasing trends over year though from 2009-10 to 2011-12 the values are given more or less same values ranging between Rs.9 to Rs.11. Finally in case of fuel and light in 1993-94 non marketed sources overlaps the marketed sources, that is Rs.(-) 4.29, the net marketed value of 2004-2005 is Rs.(-) 0.84 and Rs.2.80 in 2011-12 So we can conclude that in case of fuel and light also tribes are tending on marketed sources over time though the rate of dependency is less comparing to other items.

Now let us check statistically these changes are significant or not.

Table 3.2.1: Test of significance between Food and Non Food at Current and Constant prices in 1993-94 and 2004-05

	Current	Constant

	Food	Non-Food	Food	Non-Food
Mean				
2004-05	319.29	49.46	82.29	12.75
Mean				
1993-94	75.44	11.42	42.86	6.49
Mean				
Difference	243.85	38.05	39.43	6.26
t Value	6.049***	6.531***	3.660***	3.934***
p Value	0.000	0.000	0.000	0.000

Source: Authors' calculation from the unit level data of NSSO (50th and 61st round)

The table 3.2.1 represents the test of significance between food and non food items at constant and current prices in 1993-94 and 2004-05. In both the cases of current and constant prices testing gives a highly significant at 1 percent level of significance mean difference between 1993-94 and 2004-05 for food and non food items.

Table 3.2.2: Test of significance between Food and Non Food at Current and Constant prices in 2004-05 and 2011-12

	Current		Constant	
	Food	Non-Food	Food	Non-Food
Mean				
2011-12	526.14	104.89	87.69	17.48

Mean 2004-05	319.29	49.46	82.29	12.74
Mean Difference	206.84	55.43	5.39	4.73
t Value	4.067***	4.221***	0.467*	1.923**
p Value	0.000	0.000	0.071	0.035

Source: Authors' calculation from the unit level data of NSSO (61st and 66th round)

The table 3.2.2 represents the test of significance between food and non food items at constant and current prices in 2004-05 and 2011-12. Test reveals that in case of current prices the mean difference between the two years is highly significant at 1 percent level of significance. Though in case of consent price the mean difference between the two years in case of food and non food are significantly different at 10 percent and 5 percent level of significance respectively.

3.3 Econometric Analysis of Dependency on Marketed Consumption:

The present section analyses the dependency on Marketed Consumption at the tribal household level in the study region across the years by using pooled regression analysis. Here the Dependent variable is the Monthly Percapita Consumption of the tribes, whereas Household sizes of the tribes, their occupation, religion, educational level, female head house, total land owned, total land processed, PDS share out of total consumption and Marketed Source Share out of total source are acting as independent variables. The variables identified to capture these processes and their specifications and their descriptive statistics are presented in Table 3.3.1.

Table 3.3.1: Notation, Specification, Mean, and SD of the Variables used in Pooled Regression Model to estimate the dependency on Marketed Consumption of the tribal Sample Households

Variable	Mean	Standard Deviation	Min Value	Max Value
Dependent Variable				
MPCE	565.189	525.602	128.275	3833.471
Independent Variable				
HH Size	4.803	2.3	1	17
Occupation	3.251	1.923	1	9
Religion	2.102	2.726	1	9
Educational Level	2.355	1.31	0	6.2
Female Head Households	1.156	0.363	0	1
Land Owned	60.915	195.965	0	1216
Land Processed	62.076	195.78	0	1216
PDS Share	36.161	40.582	0	438
Share of Marketed Source over Total Sources	280.30	295.95	17.8	1927

Source: Authors' calculation from the unit level data of NSSO (61st and 66th round)

The empirical results relating to the dependency on marketed consumption is estimated by pooled regression model and presented in the next table.

Table 3.3.2: Pooled Regression Estimation to estimate the dependency on Marketed Consumption of the tribal Sample Households:

MPCE	Coefficient	Standard Error	T Statistics	P> t	
HH Size	-6.786	8.112	-0.84	0.404	
Occupation	34.911	9.311	3.75	0.000	
Religion	-2.966	6.511	-0.46	0.649	
Educational Level	11.440	15.464	0.74	0.460	
Female Head Households	-23.384	48.577	-0.48	0.631	Number of obs = 315
Land Owned	1.688	1.709	0.99	0.324	Prob > F = 0.0000
Land Processed	-1.374	1.710	-0.80	0.422	R-squared = 0.6537
PDS Share	0.963	0.479	2.010	0.045	
Share of Marketed Source over Total Sources	1.309	0.077	17.09	0.000	Adj R-squared = 0.6433

Constant	114.35	59.409	1.920	0.055	
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Source: Authors' calculation from the unit level data of NSSO (61st and 66th round)

Estimation reveals that over times the tribes are tending towards marketed sources of consumption, again which have a significant positive impact over the MPCE of the households. Similarly the regression also shows that occupation has a significant positive impact over MPCE of the sample tribal households. Again Public Distribution Share has a positive significant impact over MPCE. That means over time tribal households are consuming more and more marketed items due to the improvement in the occupation scenario of the tribals as well as for getting more benefits from the Public Distribution System. Since, other variables do not have any significant impact over MPCE, it is not necessary to consider those items.

3.4 Summing Up:

The main focus for this chapter is to analyze the dependency of market and non-market sources of tribal consumption of the backward region of West Bengal. Data reveals that over time the tribal households become dependent on marketed consumption over non-marketed consumption across different items for both food and non food. The difference between the marketed sources and non-marketed sources of consumption have been increasing over time. In case of food items the marketed share has been increased from 53.02 percent to 82.3 percent in between the years 1993-94 and 2011-12. Again in case of non food items the marketed share has been decreased from 46.98 percent to 12.7 percent in between the years 1993-94 and 2011-12. The alternative scenario has been found in non marketed sources for both food and non food items. The above scenario has been same both in case of current and constant price also. Pooled Regression estimates that over time tribal households are tending

towards marketed sources consumption due to improvement in the occupation scenario of the tribals as well as for securing more welfare from the Public Distribution System.