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“POVERTY UNDERESTIMATION IN RURAL INDIA- A CRITIQUE”

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I. INTRODUCTION

When ever the Planning Commission releases the poverty data, that data is being criticised by experts and economists. The main criticism is underestimation of poverty especially in rural India by the Planning Commission. This paper focuses on that criticism and compares the Indian Planning Commission’s 2004-05 rural poverty data with the India’s 2400 kcal poverty norms, World Bank’s US \$1.08 poverty concept and Asian Development Bank’s US \$1.35 poverty concept.

II.A. POVERTY LINE

To eradicate poverty measuring poverty is important. Identifying the poor is very important to help policy makers to design programmes and policies to fight poverty. The best option to identify the poor from non-poor would be fixing the poverty line, that is, household which consume less than a fixed bundle of goods. “A key building block in developing income and consumption measures of poverty is the poverty line, the critical cut-off in income or consumption below which an individual or household is determined to be poor” (WDR 2000/2001).

The poverty line is conceptualized as a minimum standard required by an individual to fulfill his or her basic food and non-food needs. It has

come to serve as a reference income or expenditure level. To quantify the extent of poverty and measure the number of 'poor' in the country, the concept 'poverty line' is being used. Poverty line is used to identify the poor as a group so that they can be focused on in greater detail.

Poverty line is the cut-off point separating the poor from non-poor. It is defined in terms of either income or consumption expenditure as an indicator of welfare. The poverty line refers to a minimum level of living necessary for physical and social development of a person. A minimum level of living defined in monetary terms comprises both food and non-food components of consumption.

Poverty line may be defined as "an income level that is just sufficient to meet the defined calorie norm. However households having a per capita income less than the poverty line are identified as poor. It is expressed in terms of an income level which is deemed to be necessary for enabling a person to sustain a minimum level of consumption" "Poverty line" is the lowest amount of money sufficient to purchase the amount of food necessary for a minimally adequate diet (with enough left over to buy other essentials) (Dwatkin D.R. 2000).

People are said to be living in poverty if their income and resources are so inadequate to live a decent standard of living. For poor families, meeting their daily basic needs for food, water, shelter is a life struggle;

this becomes very severe when there is unemployment and underemployment or lack of land or other income-earning assets. Poor are defined as those who lack command over basic consumption needs, including food and non-food components. They are hungry, hungry all the time, because they are too poor to buy the food the body needs. Chronic hunger, insufficient meal, nutritionally inadequate food and spending most of the income for food are the routine day to day living condition of the poor.

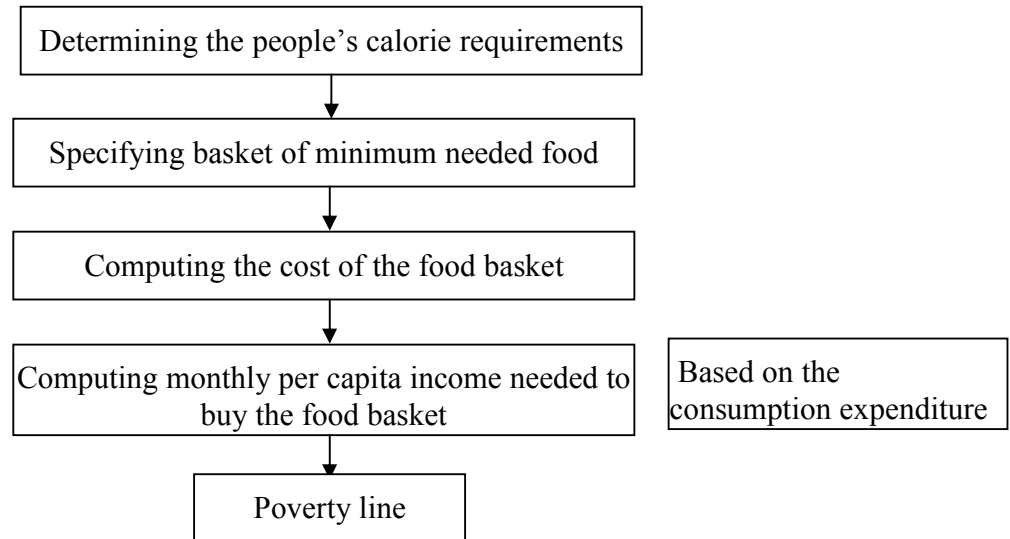
II.B. CONSTRUCTION OF POVERTY LINE

The first step in the construction of poverty line in general, is to determine the calorie requirements of people of different age and sex. The next step is to drawing a basket of goods which are satisfying minimum needs i.e., food and non-food for an individual on an objective basis.

After that the next step is to compute the cost of the minimum food needs basket at prices prevailing in the market. The computed cost represents the amount of money needed to buy the food basket by the people and then is to compute per capita monthly income needed to buy the minimum needed food. The computed monthly per capita income is the poverty line. It is observed that the poverty line is derived from the expenditure required for food.

Figure No: 1

Construction of Poverty Line



Conventionally at international level, poverty has been defined by the levels of income. Those living on less than \$ 1 US per day are considered as poor. “The most common international definition of people in ‘extreme poverty’ – those who live on less than \$ 1 a day and ‘generous poverty’ – those who live on less than \$ 2 a days” (ADB 2004). Actually \$ 1–a-day poverty line is the threshold stands as an internationally accepted level of private consumption at \$ 1.08 US per person per day consumption level in 1993 purchasing power parity prices.

II.C. MEASURING POVERTY – HEAD COUNT INDEX

Once the poverty line is determined, the poor can be aggregated into a summary measure or index in order to estimate the seriousness of poverty. “The most straight forward way to measure poverty is to calculate the percentage of the population with income or consumption levels below the poverty line. This “head count” measure is by far the most commonly calculated measure of poverty” (WDR 2000/2001).

Head count index which is based on the poverty line and most widely utilized income poverty indicator. It is the share of population whose income or consumption is below the poverty line that is the share of population that cannot afford to buy a basic basket of goods.

The most common measure of poverty is to count the number of persons below the poverty line and it as a percentage of total population in the country or region. This is known as the head count measure of poverty. “One of the simplest and most commonly used measures of the extent of monetary poverty is the proportion of poor in a given population. Poverty incidence is the proportion of individuals whose income or expenditure falls below the poverty threshold, among the total population. Poverty incidence is also often referred as the head count ratio or even the poverty ratio or poverty rate” (ADB 2004).

Head Count Index

$$Po = \frac{Np}{N}$$

Whereas Po is head count index

Np is the total number of the poor

N is the total population

Simple percentage of Po is used as “the percentage of population below the poverty line”.

II.D. POVERTY ESTIMATION IN INDIA

The Task Force on Projection of Minimum Needs and Effective Consumption Demand constituted by the Planning Commission in 1979 defined the poverty line as per capita consumption expenditure level, which meets the average per capita daily calorie requirements of 2400 kcal per capita per day in rural areas and 2100 kcal per capita per day in urban areas. Based on the 28th Round (1973-74) National Sample Survey household consumption data, the Task Force estimated that the consumer expenditure of Rs 49.09 per capita per month meets the calorie requirements of 2400 kcal per capita per month in rural areas and Rs. 56.64 per capita per month with an intake of 2100 kcal in urban areas.

According to the latest data on consumption expenditure made available by the National Sample Survey Organisation from its 61st round survey, covering the period July 2004 to June 2005, the poverty ratio is estimated (based URP – consumption) at 28.3 percent in rural areas, 25.7 percent in urban areas and 27.5 percent for All India. Based on URP – Consumption, All India poverty consumption expenditure is Rs. 356.30 for rural areas and Rs. 538.60 for urban areas. (i.e. Rs. Per capita per month). So with this, it can be calculated daily per capita consumption expenditure poverty line is Rs. 11.88 for rural areas and Rs. 17.95 for

urban areas. From this findings, we can say that those who had Rs. 12 and more as their daily income in 2004.05, are living above the poverty line in rural India, that in urban those who earned Rs. 18 and above considered not as poor.

This poverty estimation is based on 1800 kcal norms for All India and not on the 2400 kcal norms. The 2400 kcal norms were adopted for the estimation of poverty line in 1973-74 by the Planning Commission, India and later then, 2400 kcal norms was not followed by the Planning Commission. The reasons said for this nutritional deviation are, 1800 kcal norms is being adopted by the United Nations Food and Agricultural Organisation and according to the NSSO findings that there were an over all decline in the intake of nutrition by Indians over the last three decade. Any how, now the nutritional deviation from 2400 kcal to 1800 kcal is officially accepted by the Planning Commission, India for the construction of poverty line. This deviation helps Planning Commission to lower the poverty ratio very much without seeking the help of the poverty reduction programmes.

Since India is also the country with largest number of poor in the world in 2005 representing one third of the total poor in the world, the estimates for India matter a great deal for what happens to world poverty

and also for the trend in reduction of poverty. The Planning Commission estimates of poverty in India is 27 per cent for 2004-05, based on poverty lines of Rs.11.88 per day for rural areas and Rs.17.95 per day for urban areas. As may be seen, the official poverty estimates are close to those obtained by World Bank with a poverty line of \$ 1 at 2005 PPP prices, which is much less than the international line chosen either by the ADB or the World Bank (Himanshu 2008).

III.ANALYSIS AND DISCUSSIONS

III.A.2004-05 RURAL POVERTY LINE and 2400 kcal NORMS

State – wise poverty line consumption expenditure for 2004-05 were determined on the basis of kcal value which were mentioned in the NSS Report No. 513. According to that, India’s rural poverty consumption expenditure Rs. 356.3 was computed on the basis of 1800 kcal. Like that, all the State’s poverty consumption expenditure was determined according to their poverty line kcal value.

Tab No: 1. 2004-05 Rural Poverty Line Consumption Expenditure								
Sl. NO	States	Poverty Line Kcal	2004-05 Rural Poverty Consumption Expenditure/ Month in Rs	2004-05 Rural Poverty Consumption Expenditure/ Day in Rs	Deflation in Kcal from 2400 Kcal	Deflation in Per cent	Estimated Poverty Line Consumption Expenditure on 2400 Kcal	Rupees Needed to meet 2400 kcal Norms
1	Andra Pradesh	1608	292.95	9.77	-792	-33.00	437.24	144.29
2	Assam	1805	387.64	12.92	-595	-24.79	515.42	127.78
3	Bihar	1912	354.36	11.81	-488	-20.33	444.80	90.44
4	Gujrat	1624	353.93	11.8	-776	-32.33	523.05	169.12
5	Haryana	1750	414.76	13.83	-650	-27.08	568.81	154.05
6	Karnataka	1654	324.17	10.81	-746	-31.08	470.38	146.21
7	Kerala	1496	430.12	14.34	-904	-37.67	690.03	259.91
8	Madhya Pradesh	1830	327.78	10.93	-570	-23.75	429.88	102.10
9	Maharastra	1634	362.25	12.08	-766	-31.92	532.07	169.82
10	Orissa	2059	325.79	10.86	-341	-14.21	379.75	53.96
11	Punjab	1772	410.38	13.68	-628	-26.17	555.82	145.44
12	Rajasthan	1871	374.57	12.49	-529	-22.04	480.47	105.90
13	Tamil Nadu	1532	351.86	11.73	-868	-36.17	551.22	199.36
14	Uttar Pradesh	2009	365.84	12.19	-391	-16.29	437.04	71.20
15	West Bengal	1881	382.82	12.76	-519	-21.63	488.45	105.63
	INDIA	1800	356.3	11.88	-600	-25.00	475.07	118.77

Source: Computed by the author based on Planning Commission Data

Table No.1 depicts State wise poverty consumption expenditure and their deviation from 2400 kcal in rupees. We can observed from the above table that the most deprived States poverty consumption expenditure were determined on high kcal value. Orissa's kcal value was 2059, Uttar Pradesh's was 2009 and Bihar's poverty kcal value was 1912. On the other hand, high developing States like Kerala, Tamilnadu, Gujrat and Maharastra's poverty consumption expenditure calculated on the basis of comparatively low kcal value i.e. 1496, 1532, 1624 and 1634 respectively.

While calculating the State wise deflated kcal value from 2400 kcal we can found the above same result i.e. the high developing State's kcal value deflated more than least developed State's kcal value. In percent, the least developed State's deflation of kcal least and for the high developing State's kcal deflation were high.

The estimated poverty line consumption expenditure on the basis of 2400 kcal for the India's major State's were Kerala –Rs. 690.03, Haryana – Rs. 568.81, Punjab – Rs. 555.85, Tamil Nadu Rs. 551.22, Maharastra – Rs. 532.07, Gujrat – 523.05, Assam – Rs. 515.42, West Bengal – Rs. 488.45, Rajasthan – Rs. 480.47, Karnataka – Rs. 470.38, Bihar –Rs. 444.80, AP – Rs. 437.24, Uttar Pradesh – Rs. 437.04, Madhya

Pradesh – Rs. 15, Orrisa – Rs.379.75 and for all India – Rs. 475.07. This estimation reveals that the higher poverty line consumption expenditure for the high developing States and lower poverty line consumption expenditure for the least developed States.

The additional consumption expenditure needed to meet the 2400 kcal for high developing States like Kerala, Tamil Nadu, Maharashtra and Gujrat were Rs. 259.91, Rs. 199.36, Rs. 169.82 and Rs. 169.12 respectively and the least developed States like Orissa needed Rs. 53.96, Uttar Pradesh needed Rs. 71.20 and Bihar needed Rs. 90.44.

Martin Ravallion observed that the India's Official Poverty Line (IOPL) is almost equal to the International Poverty Line (IPL) i.e. dollar-a-day concept. But the above table gives a different result. According to 2005 PPP, one US \$ was equivalent to Indian rupees 15.60 in the consumption expenditure. But not single State's poverty line consumption expenditure was Rs. 15.60 for a day. All the Indian States poverty line consumption expenditure was below Rs. 15.60. Only Kerala had a near poverty consumption expenditure Rs. 14.34, Andhra Pradesh's poverty consumption expenditure were Rs. 9.77, well short from dollar-a-day concept. All India's poverty consumption expenditure was Rs. 11.88.

III.B. Dollar-a-day – INTERNATIONAL POVERTY LINE

To compare the poverty across the country the World Bank in its World Development Report 1990 proposed the dollar – a – day poverty norms for measuring the poverty across the countries. Till 2005, the World Bank and most of the international organisations followed the dollar – a – day concept to measure the poverty world wide. Even it is called as dollar – a – day; the exact value was US \$1.08. Those who lived below that were considered as poor. That was considered as the benchmark for measuring the poverty line. The 1990 World Development Report presented the first –ever global estimates of poverty which was on the basis of the \$ 1-a –day poverty line based on the country – specific national poverty lines for a sample 33 countries. The World Bank attempted to derive the international poverty line by fitting a cross – country semi-log function, relating a country’s poverty line with its mean per capita private consumption, both in 1985 PPP dollars. Since econometric analysis failed to yield a reasonable international poverty line, the World Bank then decided to determine the poverty line by eyeballing the scatter plot of this equation. This eyeballing method gave rise to the poverty line \$31 per month which became well-known as the \$-a-day poverty line (Nanak Kakwani 2007).

Recently the World Bank released poverty estimates and the new poverty line fixed at US \$ 1.25 which were incorporating price data from the 2005 round of the International Comparison Program. The main reason said for this revision is the inflation in the United States.

But this paper takes dollar – a-day (US \$ 1.08) concept for the analysis because of Martin Ravallion advocated that \$1.00 per day at 2005 PPP, which is very close to India’s official poverty line when converted to PPP \$. (Martin Ravallion 2008) and the Millennium Development Goals are measured poverty reduction on the basis of dollar-a-day norms.

III.C. PURCHASING POWER PARITY

Purchasing power parity is the number of currency units required to purchase an amount of goods and services equivalent to what can be bought with one unit of currency of a base country. Here the monetary unit consider as a base country’s is US dollar. “The construction of the \$1 – a- day poverty line is not based on market exchange rates, but on purchasing power parities (PPPs). PPPs are conversion factors that ensure a common purchasing power over a given set of goods and services. For example, in 2005 it took on average Rs. 44.10 to obtain \$1 in currency markets. But this does not mean that \$1

had the same purchasing power in the United States as Rs. 44.10 did in India that year. In fact, the results of the 2005 round of the International Comparison Program (ICP) – a global statistical project that has been producing PPPs since 1970s-found that US\$1 had the same purchasing power as Rs. 15-60 for the goods and services that make up household consumption in India” (ADB 2008). The PPP of US\$1 is equivalent to Rs. 15.60 according to household final consumption expenditure and equivalent to Rs. 14.67 according to GDP, since the poverty estimation is one the basis of consumption expenditure, Rs. 15.60 PPP value is being taken for poverty studies by all the organisations.

III.D.2004-05 INDIA’S RURAL POVERTY LINE and INTERNATIONAL POVERTY LINE

When we convert the US \$ 1.08 into India rupees according to PPP we can get Rs. 505.44 for a month. $(1.08 \times 15.60 \times 30)$. Hence those who lived below with the monthly consumption expenditure of Rs.505.44 in India may be considered as poor according to the international poverty line.

2004-05 India's Poverty Line and International Poverty Line					
Sl.NO	States	Rural	International Poverty Line PPP Household Final Consumption Expenditure in Indian Rupees	Indian Poverty Line in Percentage comparing with the International Poverty Line	Deflation from International Poverty Line in Rupees
			1.08*15.60*30		
1	Andra Pradesh	292.95	505.44	57.96	-212.49
2	Assam	387.64	505.44	76.69	-117.8
3	Bihar	354.36	505.44	70.11	-151.08
4	Gujrat	353.93	505.44	70.02	-151.51
5	Haryana	414.76	505.44	82.06	-90.68
6	Karnataka	324.17	505.44	64.14	-181.27
7	Kerala	430.12	505.44	85.10	-75.32
8	Madhya Pradesh	327.78	505.44	64.85	-177.66
9	Maharashtra	362.25	505.44	71.67	-143.19
10	Orissa	325.79	505.44	64.46	-179.65
11	Punjab	410.38	505.44	81.19	-95.06
12	Rajasthan	374.57	505.44	74.11	-130.87
13	Tamil Nadu	351.86	505.44	69.61	-153.58
14	Uttar Pradesh	365.84	505.44	72.38	-139.6
15	West Bengal	382.82	505.44	75.74	-122.62
	INDIA	356.3	505.44	70.49	-149.14

Source: Computed by the author based on Planning Commission Data

When comparing the India's official poverty line with the international poverty line (US \$ 1.08) we can found that all the States were well below the international poverty line. In percentage, Andra Pradesh India's official poverty line was only 57.96 percent of international poverty line, even Kerala's poverty line was 85.10 percent of international poverty line. The All India poverty line represented only 70.49 percent of international poverty line, well below the 3/4th mark.

In rupees terms, the deflation were at all India level Rs. 149.14, Andra Pradesh's Indian poverty line deflated Rs. 212.49, Karantaka's Indian poverty line was deflated Rs.181.27, Orissa's Indian poverty line

were short of Rs.179.65 and Madhya Pradesh Indian poverty line were short of Rs. 177.66. The promising developing States Kerala (Rs.75.32), Gujrat (Rs.90.68) and Punjab (95.06) were deflated with least amount in rupee terms. Hence it is obvious that India's official Poverty line was well short of international Poverty line.

III.D. INDIA'S RURAL POVERTY LINE and ASIAN POVERTY LINE

Asian Development Bank (ADB) on its part introduced Asian poverty line, which was fixed at US \$ 1.35 especially for Asian countries. That was determined based on the median of the national poverty lines of the 15 Asian countries they are, Bangladesh, Bhutan, Cambodia, India, Indonesia, Lao PDR, Malaysia, Mongolia, Nepal, Pakistan, Philippines Srilanka, Thailand and Vietnam. However for the sake of expositional convenience, we also consider a single monetary value for our Asian poverty line regardless of which set of PPPs is used. The average of the medium values leased on the three sets of PPPs-\$ 1.35-presents itself as the common value. In what follows, we use \$ 1.35 per day as the Asian poverty line" (ADB-2008).

2004-05 India's Poverty Line and Asian Poverty Line					
Sl.NO	States	Rural	Asian Poverty Line PPP Household Final Consumption Expenditure in Indian Rupees	Indian Poverty Line in Percentage comparing with the Asian Poverty Line	Deflation from International Poverty Line in Rupees
			1.35*15.6*30		
1	Andra Pradesh	292.95	631.8	46.37	-338.85
2	Assam	387.64	631.8	61.35	-244.16
3	Bihar	354.36	631.8	56.09	-277.44
4	Gujrat	353.93	631.8	56.02	-277.87
5	Haryana	414.76	631.8	65.65	-217.04
6	Karnataka	324.17	631.8	51.31	-307.63
7	Kerala	430.12	631.8	68.08	-201.68
8	Madhya Pradesh	327.78	631.8	51.88	-304.02
9	Maharastra	362.25	631.8	57.34	-269.55
10	Orissa	325.79	631.8	51.57	-306.01
11	Punjab	410.38	631.8	64.95	-221.42
12	Rajasthan	374.57	631.8	59.29	-257.23
13	Tamil Nadu	351.86	631.8	55.69	-279.94
14	Uttar Pradesh	365.84	631.8	57.90	-265.96
15	West Bengal	382.82	631.8	60.59	-248.98
	INDIA	356.3	631.8	56.39	-275.5

Source: Computed by the author based on Planning Commission Data

When comparing with the Asian Poverty Line all the States were well below the 70 percentage mark. Andhra Pradesh's Indian poverty line was represented only 46.37 percent of the Asian poverty line. All other States lied between 51.31 percent and 68.08 percent. Kerala, which had the most near poverty line to the Asian Poverty line, represented only 64.95 per cent of Asian poverty line. All India Poverty line was 56.39 percent of APL. This represents that the All India Poverty Line were representing only nearly half of the Asian Poverty Line.

In Rupees, the poverty consumption expenditures were well below the Asian Poverty Line consumption expenditure. That varies from Rs. 201.68 (Kerala) to Rs. 338.85 (Andhra Pradesh). At All India level the deflation was Rs. 275.5, that means the person whose consumption expenditures between Rs. 356.4 and Rs. 631.8 were not poor according to Indian official poverty line, whereas, those were considered as poor according to Asian poverty line.

III.E.STATISTICAL ANALYSIS

To test the significance of these poverty data a hypothesis is formed and it is being tested with two analyses with the help of ANOVA statistical tool.

The hypothesis is

H_0 = the poverty means are almost same

H_a = at least one data mean differs quite significantly from the other

For the first analysis, 2004-05 poverty data of the Planning Commission, India, World Bank's dollar-a-day data and Asian Development Bank's US \$1.35 data are used.

The results are

ANOVA Results

Mean 1	363.47	Variance 1	132591
Mean 2	505.44	Variance 2	0
Mean 3	63180	Variance 3	0
Between Variance	288328.851	Variance Within	442.97
F' Statistics	650.89	P' Value	0.0005

Results: Very strong evidence against the null hypothesis

For the second analysis, amount of rupees to meet 2400 kcal norms poverty line in 2004-05, amount of rupees needed to meet the dollar-a-day norms and the amount of rupees needed to meet the Asian poverty line data are used.

The results are

ANOVA Results

Mean 1	135.248	Variance 1	2569
Mean 2	141.97	Variance 2	1328.91
Mean 3	268.33	Variance 3	132891
Between Variance	899927.05	Variance Within	1742.28
F' Statistics	51.614	P' Value	0.0005

Results: Very strong evidence against the null hypothesis

From the above two results, it is clear that the Planning Commission Indian poverty line is not on par either with the international poverty line or the Asian poverty line.

IV. CONCLUSION

India's data are always under severe criticism because of its underestimation. One of the examples for that is the raise of prices of food articles are now at a shuttle speed on the other hand the general inflation index shows an ironical figure. Last year it was even in negative figure while the consumer price was on rising at a fast pace. Like that when analyzing poverty data, as it is being always criticized, shows an underestimated figure especially for rural areas.

This study reveals that India's official poverty consumption expenditure per day was US \$ 0.7049, which denotes that those who live the income of US\$ 0.71 to US\$1.08 are not considered as poor according to Indian poverty estimation. This means that nearly 29% of the poor who consider as poor as per the international poverty line are not poor according to Indian poverty line. Like that Indian poverty line is well below of Asian poverty line also. The 2400 Kcal poverty norms analysis also shows that all the Indian States rural poverty lines are well short in consumption expenditure that required meeting the 2400 Kcal.

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