Hunger and its Underlying Causes: A Broad Indian View

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Hunger is the deprivation of the fundamental 'right to food' that human beings have sought to achieve ever since the origin of mankind. The means and ways of attaining food security has undergone vast changes since the days of hunting and gathering to expansionary food production and welfare measures of distribution as civilization has traversed through different epochs with varying modes of production. The persistence of a scourge like hunger even today among large sections of the world population in spite of astronomical distances covered by science and technology, especially over the last century, perhaps remains the greatest contradiction and challenge within the contemporary world system.

In this light, the recent release of *The Challenge of Hunger 2008* and *The Indian State Hunger Index 2008* by the IFPRI brings forth some crisp facts regarding the situation of hunger across the developing world and in the different states in India. Constructing a Global Hunger Index (GHI) has been one useful initiative in the recent years in tracking the comparative levels of hunger in different parts of the world and across individual nations. The estimation of the Indian State Hunger Index (ISHI) this year comes as a new endeavour to throw light on the prevalence of hunger in our country at a more disaggregated level. From this point of view, the two reports hold immense significance for policymakers of our country although there is some methodological hitch involved with the ISHI comparison of the Indian states with different countries. The purpose of this essay is to appraise the situation of hunger in India from a more inclusive point of view and also to delve into some of the underlying causes of hunger and required policy interventions.

Before undertaking these tasks, it is necessary to look into some of the findings of the recently published reports. The hunger index has been constructed using a fairly simple methodology. It uses three variables namely, the proportion of undernourished as a percentage of the population, the prevalence of underweight in children below five years and the mortality rate of children below five years. The index is a simple average of these three somewhat inter-related variables. The GHI classifies the countries into five categories of hunger situation based on their hunger index score (see Table 1).

Range of Hunger Index Score	Situation of Hunger	
< 4.9	Low	
5.0-9.9	Moderate	
10-19.9	Serious	
20.0-29.9	Alarming	
>30.0	Extremely Alarming	

Table 1: Categories of Hunger Situation

Source: The Challenge of Hunger 2008 available at http://www.ifpri.org/pubs/cp/ghi08.asp

The Challenge of Hunger 2008 report finds 33 countries with 'alarming' and 'extremely alarming' levels of hunger. Another 32 countries come in the bracket of a 'serious' hunger situation. Also, the study covers data only till 2006, which implies that food deprivation further exacerbated by the phenomenal food and fuel price inflation witnessed in the last couple of years is not captured in the analysis. The notable fact is that the 120 countries for which the study was undertaken excludes the western developed nations and some of the East-European nations where the problem of hunger has been largely overcome. The GHI studies have been generally using the norm of a dietary energy intake equal to and above 2900 Kcal per day per person and an under-five mortality rate below 15 per 1000 live births as sufficient criteria for identifying countries with no hunger (The Challenge of Hunger 2008, Part I, Endnote 4, Page 20). In that sense, the GHI study actually represents the comparative hunger situation within the developing world. Comparisons including the advanced North-Atlantic countries using similar measures will obviously reveal the great hiatus that has historically come into existence between the North and the South with regard to consumption, hunger and wellbeing. This implicitly also points to the fact that the phenomenon of hunger is more exclusive to the developing countries of the South in the contemporary world.

Notwithstanding this great divide, the situation is quite diverse even within the developing world with Sub-Saharan Africa and South Asia faring the worst with hunger indices at an 'alarming' level (23.3 and 23.0 respectively). The majority of the individual nations that have a more vulnerable hunger index are also from these two regions. In

contrast, South-east Asia recorded a score of less than 10 while the Near-East and North Africa and Latin America both had the index at just over 5. Intriguingly, the fast-growing economy of India, with a score of 23.3, figures among the countries with an alarming situation of hunger. The more worrisome fact, revealed upon comparison with last year's situation, is that India actually marginally slipped in its ranking from 94 among 118 nations in 2007 to 98 among 120 nations in 2008. The Indian case emphatically underscores the non-inclusive nature of the recent phase of high economic growth in the country, which has had little positive impact for her vast majority of poor population.

A broader view of Hunger: The Indian Story

The dichotomy of high growth rates and persisting hunger among the Indian population has been a reasonably strong motivation for the IFPRI to carry out an assessment of hunger incidence in India at a more disaggregated level of the states. The ISHI report published this year constructs the hunger index for 17 major Indian states. The study compares the various Indian states with the GHI country rankings to find that most of the states rank somewhere in between the poor Sub-Saharan countries. While Punjab, Kerala, Andhra Pradesh and Assam has a 'serious' level of hunger; Madhya Pradesh fares worst in the 'extremely alarming' bracket of hunger with an index of 30.9. This conforms to the recent reports of a large number of deaths occurring amongst children due to malnutrition in Madhya Pradesh. All the other remaining states record an 'alarming' level of hunger, which is also the general situation for the country.

While the results of the ISHI study depict disturbing levels of hunger across the states, the study runs into some methodological dilemma in its attempt to compare the Indian states with the countries ranked by the GHI. The problem is confined to the realm of estimating the proportion of undernourished population and arises due to the use of different datasets for this purpose by the GHI study and the India-specific one. The GHI bases its estimates on the Food and Agricultural Organization (FAO) calculations of the proportion of under-nourished. The FAO results are derived using the food availability data from the national food balance sheets of each country, its country-specific benchmarks of Minimum Dietary Energy Requirement (kcal/person/day) (MDER) and by adjusting for the distribution of population by income and calorie requirements. The FAO

benchmark for India in the period 2002-04 is per capita per diem 1820 Kcal. The proportion of undernourished population using this cut-off point comes to 20 percent, which has been used in the GHI calculations.

The trouble arises when the ISHI attempts similar calculations for the different states by applying the same minimum dietary criterion to the NSS data on distribution of the population by different consumption classes with varying actual energy intake. The proportion of population with an energy intake of less than 1820 Kcal per person per day comes to 34 percent from the NSS data, which is nearly 1.75 times the FAO estimate. The mismatch arises due to the difference in the FAO methodology followed for making yearly estimates and that followed by the ISHI in their study. While the FAO uses macro data on food production, food export-import and changes in food stocks and adjusts for seed, feed, wastage etc. to arrive at per capita per day energy intake¹, the NSS collects cereal consumption data directly from the households and converts them to calorie, proteins and fat intakes using relevant energy conversion coefficients. The NSS data are therefore more reliable as far as actual energy intakes of the population is concerned as the indirect method of estimating per household or per capita energy intake from the macroeconomic data leaves room for underestimation of the energy leakages, no matter how careful one is, that occur from the food en route the farm to the plates of the population.

Notwithstanding this fact of greater dependability of the estimates made from the NSS data, the ISHI report however adopts some arbitrary adjustments in order to maintain compatibility of the state hunger index with the GHI. It follows the reverse path of first fixing the proportion of undernourished population at 20 percent at par with the GHI figure. It then accordingly lowers the MDER to 1632 Kcal per day per person, a full 188 Kcal below the FAO norm, at which the under-nourished population is 20 percent as per the NSS data and applies this new, lowered norm to the individual states. Driven by the urge to somehow render their estimates comparable with the GHI, the ISHI espouses a correction that amounts to a serious methodological slip. The reduction in the calorienorm is unacceptable as the MDER specified by the FAO is by definition the *minimum* dietary intake required by the population 'for maintaining a healthy life and carrying out light physical activity' (FAO definition of MDER, available а at

http://www.fao.org/faostat/foodsecurity/index_en.htm) and clearly there is no further scope for freely sliding the norm down the calorie scale. Also, this is eerily moving close to the minimum calorie requirement for a child between the age of 0 to 3 or a terminally ill person (i.e. those who are taken care of by others), which is 1200 Kcal per person per day. The relaxing of the norm also appears unrealistic in the face of the fact that the MDER held as the yardstick for declaring a country with 'no hunger' is as high as 2900 Kcal!

Moreover, this alteration of the MDER only multiplies the dilemma many times as the under-nourishment variable is based on a minimum dietary norm itself. Surely, if the population with an energy intake of lower than 1820 Kcal is 'undernourished' (according to FAO), then the portion of population below 1632 Kcal cannot also be characterized as undernourished but must be something worse than that. By modifying the MDER norm, the ISHI study changes the character of the variable itself. Certainly, this does not help in the least bit to reconcile the comparability issue as this leads to the comparison of different variables! What happens in the process is a significant underestimation of the real levels of under-nourishment and hunger existing in the country.

Keeping aside the comparability issue, a prudential way out of this quagmire is to use an objective India-specific benchmark to assess the real levels of hunger prevailing in the country. Such an independent and broader view of hunger can be based on the recommendations of the *Report of The Task Force on Projections of Minimum needs and Effective consumption demand, 1979* of the Planning Commission. Taking into account that per capita per day calorie requirement is age, sex and occupation specific, the 1979 Task Force divided the population into 16 groups and estimated the average calorie requirement. This was 2435 Kcal for rural areas and 2095 Kcal for urban areas, which was rounded off to 2400 Kcal and 2100 Kcal respectively for convenience. These norms are not in conflict with the FAO recommended MDER, as the latter is only the *minimum* calorie requirement for carrying out a light physical activity as mentioned earlier. While the MDER constitutes a narrow definition of hunger and measures the absolute calorie deficiency in the population, the FAO also conceptualizes an average dietary requirement taking into account the requirements of men and women carrying out hard physical labour. This is around 2100 Kcal on the average for developing countries.

As the GHI 2007 report rightly noted, 'FAO's measure of the proportion of the population with calorie deficiency is, however, based on the minimum and not the average dietary energy requirements, and therefore it cannot capture the proportion of people whose calorie supply lies between these two thresholds' (The Challenge of Hunger 2008, Part I, Endnote 13, Page 20). The report also notes that the average norm is particularly crucial for the South Asia, and specifically India, where a significantly large proportion of the population lies between these two thresholds (*ibid*, Page 10). The Task Force norms measure hunger in a more inclusive manner considering not just for the population with an absolute calorie deprivation but also capturing those who experience a shortfall in calorie intake relative to the requirements arising out of their occupations involving strenuous manual labour.

Norms	Prevalence of Calorie Under- nourishment	Proportion of Underweight among children <5 years	Under-five mortality rate reported as death per 100	Broad Hunger Index
	[A]	[B]	[C]	
Rural				
2400 Kcal	87	45.6	8.2	46.9
2200 Kcal	69.5	45.6	8.2	41.1
Urban				
2100 Kcal	64.0	32.7	5.2	34.0

Table 2: The Broad Hunger Index: Rural and Urban India

Source: The rural figures of variable A are taken from Patnaik, 2007. The urban figure is estimated by the author using NSS data on Consumption Expenditure and Nutrition, 2004-05. Variables B and C are taken from the NFHS-III, 2005-06.

Taking into account that the Planning Commission Task Force of 1979 had recommended distinct norms for rural and urban areas, we will reassess the level of hunger in the country from a broader point of view separately for the rural and urban areas. We calculate a Broad Hunger Index using the rural and urban-specific norms prescribed by the Task Force. Additionally, for the rural areas, we have also used a norm of 2200 Kcal per capita per day, as this was the norm initially used to estimate poverty from the 1973-74 NSS data². Patnaik (2007) has made estimates of the proportion of the

population with energy intake less than 2400 Kcal and 2200 Kcal per capita per day for rural India, which we can readily use for our calculations (see Table 2). The prevalence of calorie under-nourishment by the objective and inclusive norms of 2400 Kcal and 2200 kcal is 87 and 69.5 percent respectively.

For urban India, we use Patnaik's methodology to directly estimate the percentage of urban population with energy intake less than 2100 kcal per capita per day. Plotting the average calorie intake against the average Monthly Per Capita Expenditure (MPCE) for each consumption class reveals Rs 994 as the MPCE required to attain 2100 Kcal. Further plotting the cumulative distribution of population by the MPCE classes, we estimate that roughly 64 percent of the population have an energy intake below the norm. Both for the rural (by whichever norm) and urban areas, the proportion of the population with a relative shortfall in energy requirements are much higher than the percentage having an absolute calorie-deprivation measured by the ISHI. The incidence of hunger in terms of shortfall in energy intake is substantially higher in the rural areas compared to the urban areas. These estimates of hunger also reinforce the earlier noted observation of the GHI 2007 report that the proportion of population unable to fulfil average calorie requirements was particularly high and critical for South Asia and India.

Based on these estimates, the Broad Hunger Index (simple average of the three variables) is a high 46.9 and 41.1 by the 2400 Kcal and 2200 Kcal norms respectively in rural India while in urban India the same is 34. While the GHI and ISHI estimates based on absolute calorie deprivation itself revealed a quite disturbing situation of hunger in the country, a more inclusive estimate using the average norms prescribed by the Planning Commission Task Force increases the dimensions of the problem manifold. Additionally, the revelation from the last two GHI studies that India's ranking in the hunger scale actually worsened marginally also calls for an enquiry into some of the causes of persisting hunger in this fast-growing nation.

More trade-openness: a recipe for salvation or catastrophe?

An interesting exercise that the GHI undertook is to classify the studied countries by their category of hunger and whether they are net cereal exporters or importers. A majority of the countries are cereal importers. In the category of 'serious', 'alarming' and 'extremely

alarming' countries, only four countries namely, Myanmar, Uzbekistan, India and Burkina Faso are found to be rare net cereal exporters while the rest are net importers. This immediately tempts one to conclude the necessity of more free trade across national boundaries entailing further lowering of tariffs on agricultural products. The advocates of free trade will argue that this is helpful in reducing the high food prices that are currently dominating the world markets and ensure a cheap supply of food to the poor countries reeling under hunger. On the contrary, a historical viewpoint from the perspective of the developing country primary producers leads us to infer quite differently from this dominant mainstream policy recommendation.

There are a couple of historical truths that often remains ignored in contemporary trade policy recommendations. Advocacy of freer trade regimes to enable cheaper food supply to poor countries is essentially a snapshot view which remains oblivious of the transformation that occurred in agricultural production in the majority of the poor Sub-Saharan and South Asian countries as they moved away from 'Food-First' to 'Export-First' regimes in the eighties and the nineties and adopted export-oriented agriculture under the guidance of the Bretton Woods Institutions. The goal of internal food security and augmenting food production was pushed to the backyard of policy-making in these developing economies to satisfy the growing Northern demand for primary products from the fertile and arable Southern lands. The fact that so many hunger-afflicted countries are also net importers of cereals is precisely due to the export-oriented non-food cultivation that was encouraged by these countries two or three decades back.

The other reality that existed in these developing economies and was largely ignored at the start of this transformation process is that majority of the cultivators and primary producers in these countries were net food buyers. A move away from 'Food-First' regime to an export-oriented one meant undertaking the risky affair of trying to attain food security for the population in these countries through trade in the world markets. With primary product prices falling and fluctuating erratically in the world market and food price trends relative to that of the primary products generally remaining adverse, cheaper food imports to feed one's population was a dream that never got cherished in most cases. With world prices affecting domestic prices under a tradeliberalized regime, the returns to agricultural production starts falling even within the domestic economies further compounding the problem for the large rural populace in these countries.

We make a modest attempt to trace these processes by looking at the domestic returns to agricultural activity in the Indian economy. Although India is still a netexporter of cereals, there has been a significant shift of focus to cultivation of commercial crops for the export market since the mid-nineties. The last decade has also witnessed the precipitation of an agrarian crisis, particularly severe in dryland regions with commercial agriculture, leading to mass farmer suicides. The opening up of the Indian food and other crop markets was a disaster at the very beginning as the world prices of primary products declined heavily since the mid-nineties till around the end of the millennium as a result of an excess supply in the world market. The falling prices adversely affected the farmers in India, and across the developing countries, especially those who had shifted to the cultivation of commercial crops, entailing large investments. The rationale of producing and exporting commercial crops and importing food at cheaper prices did not work due to the price trends in the world market during this period. Food prices also declined towards the end of the nineties but at a far lower rate than the primary product prices.

On the other hand, the prices started rising since the turn of the century but along with that food prices have also increased. The prices of food in the world market increased in the new century at least at a similar rate, if not faster. An implication of this phenomenon for the small-scale commercial crop producers in the developing countries like India was that the 'real' returns that that they faced stagnated or declined over more than a decade. With non-increasing or declining returns in agricultural productions, the consumption levels of the rural population undergo deflation over time and hence the prevalence or aggravation of hunger incidence occurs. This, in turn, also causes distresspushed migration of large numbers from rural to urban areas. The latter, though in a better economic situation, mostly do not have the capacity to entirely absorb the huge influx of job-seeking migrants from the rural countryside which is why urban areas also witness significant presence of hunger and deprivation.

The movements in the 'real' returns in Indian agriculture are portrayed by Figure 1, where we have plotted the *real* Wholesale Price Indices for different crops and product-groups for the period between 1991-92 and 2005-06. The nominal price indices

have been deflated to 1991-92 prices using the Consumer price Index for Agricultural labourers (CPI-AL). We have used the Wholesale Price Indices for Rice, Wheat, Maize and Raw Cotton and product groups like pulses and oilseeds available in the various reports of the Commission for Agricultural Costs and Prices (CACP). The trends in the wholesale price indices deflated by the CPI-AL represents the changes in the capacity of the producers to purchase a particular commodity basket over time, assuming that the costs of cultivation as a share of output and the output share appropriated by middlemen and commission agents have remained more or less unchanged with time. The first assumption is particularly a strong one given that with deregulation of input markets under the neo-liberal economic regime, prices of inputs like seeds and chemical fertilizers have undergone significant upward revisions. The individual crops and product groups for which we have carried out this exercise covers around 80 percent of the area under cultivation and hence our findings are relevant for a majority of the cultivators in the country.

The real producer prices for rice remained stable throughout the nineties and experienced a surge in the late nineties but this gain quickly tapered off and the real returns reached the early nineties level due to stagnated nominal prices and higher inflation in the new century. In contrast, the real value of wheat prices sharply increased initially when the economy was opened up in the mid-nineties and again towards the end of the decade. However, like rice, the real prices for wheat also faced stagnation between 1999-00 and 2001-02 and a downturn in the period thereafter. Similar trends are visible for pulses where the real prices fast declined post 2001-02 to the early nineties levels after a brief escalation at the turn of the century. On the other hand, the trend for maize have been more volatile, declining significantly in the early nineties followed by occasional upturns, but importantly, the real value of maize prices have consistently remained below the 1994-95 level throughout the period.

The trends for the real prices for the non-food products are significantly different from what we observe for the food crops. The real producer prices for oilseeds have secularly declined in the nineties to low levels. The subsequent rise for oilseeds after 2000-01 was more due to inadequate supply, owing to the drought conditions in the early years of the new century. This implies that no real benefits were accrued by producers due to this increase which also got partially reversed in the last three years of the period of analysis as the production started improving. Raw Cotton, which has been at the centre of the agrarian crisis in the country, exhibits an unambiguous declining trend in real prices ever since the markets were liberalized in the mid-nineties. From a high in 1994-95, the real prices have fast dwindled and even slipped under the low value that existed in 1992-93.

(Figure on next Page)

These real price trends for the major crops explicitly reveal a more systemic income deflationary process under trade-liberalization for non-food crops rather than mere intermittent shocks, while for food crops, there has been a clear erosion of real value of prices in the current decade. In the event of rising cultivation costs in agriculture unlike what we have assumed, the decline in the purchasing power of the producers is even greater than what we observe from the graphs. Falling returns in cultivation also leads to declining or non-increasing real wages of the large number of agricultural labourers in rural areas. The fact that calorie deprivation has increased in the rural India between 1993-94 and 2004-05 by whichever norm we follow (see Table 3) is largely explained by this shrinking of purchasing power of the rural population.

Calorie Intake Norm	Percentage of Population below Prescribed norm		
(Kcal/person/day)	1993-94	2004-05	
2400	74.5	87.0	
2200	58.5	69.5	
1800	20.0	25.0	

 Table 3: Rural Calorie Deprivation by various norms: 1993-94 and 2004-05

Source: Estimates taken from Patnaik, 2007

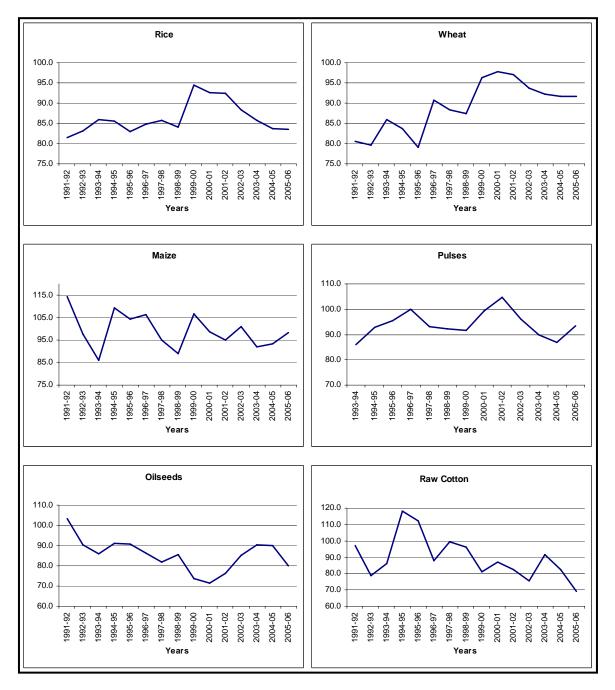


Figure 1: Trends in real Wholesale Price Indices for different commodities (at 1991 prices)

Source: Based on Wholesale Price Index data published in various reports of the CACP. Note: The period of analysis for pulses is 1993-94 to 2005-06 as the price indices for Pulses as a group are not available for the years 1991-92 and 1992-93 A basic implication of these trends is the necessity to stabilize both food and nonfood prices. This calls for increased interventions in both food and non-food commodities' markets in the form of enhanced procurement and food distribution operations such that there is an improvement in the economic returns in real terms for primary sector producers. An unidirectional policy seeking to further open up the economy and focus on export-oriented agriculture will be contrary to achieving this objective, especially with the shrink in world demand due to the current recession that is gradually setting into the North Atlantic markets. Such a policy will lead to further decline in the returns to exports crops in the world markets and within the domestic economy with disastrous consequences for the millions of primary sector producers in India as well as other poor developing economies. A more judicious way of tackling the problem of hunger within such economies will be to revisit and implement the goal of national food security that constituted the erstwhile 'Food-First' doctrine.

The Public distribution System (PDS) also has a crucial role to play in this fight against persisting and increasing hunger. Simultaneously with the deterioration of economic returns in the rural areas over the last decade, there has also been a progressive downsizing of the PDS in India. The Targeted PDS introduced in 1998 linked food distribution at subsidized rates to the poverty line. Targeting the food subsidy to the Below Poverty Line (BPL) population went awry as the official poverty line used for this purpose had long ceased to represent any of the objective or standard norms of calories deprivation that were prescribed by the 1979 Task Force.

A large section of the rural population, which has a calorie intake between the *minimum* and *average* calorie requirement is officially classified as non-poor and hence excluded from the benefits of the TPDS. Interestingly, after diverting further away from the Task Force norms successively for several years, the official rural poverty line in 2004-05 measured the population with an energy intake below 1820 Kcal per capita per day (Patnaik, 2007), which is also the minimum norm used by the FAO to estimate the proportion of the population with absolute calorie deprivation. In the process, nearly 50 percent of the rural population with an energy intake shortfall from their average requirements are not classified under the BPL population. The official classification is particularly important as the Central government while allocating food under the PDS to

the states holds the lower of the official estimates and the states' own estimates of BPL population as the benchmark proportion of poor in the respective states. This necessitates either a correction in the official poverty estimates re-linking them to standard consumption norms or de-linking of public distribution of food from the erroneous poverty lines which are underestimating the poor.

The revamping of the PDS to the pre-TPDS level is required on a priority basis to address the worsening well-being of the masses. Greater public procurement operations complemented by a universal PDS will serve a dual role in the economy. This will simultaneously increase and stabilize the prices received by the primary producers for their crops as well as achieve the provisioning of food to these sections at subsidized and cheaper prices, thereby leading to an improvement in their real production returns and purchasing power. Similarly, more public intervention is also crucial to stabilize the returns in non-food cultivation, which has been rendered more vulnerable by adverse price movements. In a nutshell, it is time for the government to move beyond the stereotype free market-free trade theories and build and strengthen a structure of public social welfare policies in order to reduce hunger and poverty in the country in any meaningful manner and also to bridge the great social divide between the rich and the poor that is fast widening under the current regime of economic policies.

References:

¹ For a detailed version of the FAO methodology followed for their yearly estimations of the proportion of under-nourished population, see FAO METHODOLOGY FOR THE MEASUREMENT OF FOOD DEPRIVATION, FAO Statistics Division, October 2003 available at http://www.fao.org/faostat/foodsecurity/Files/undernourishment_methodology.pdf

² see Patnaik (2007) for a detailed discussion on this

FAO (2003) FAO Methodology for the Measurement of Food Deprivation, FAO Statistics Division, October.

GOI, Reports of the Commission for Agricultural Costs and Prices for the years 1997, 2002 and 2008.

Government of India, 1979. "Report of the Task Force on Projections of Minimum Needs and Effective Consumption Demand", Planning Commission, New Delhi, mimeo (available at <u>http://planningcommission.nic.in/aboutus/taskforce/tsk_mneff.pdf</u>).

IIPS (2007).'*National Family Health Survey 2005-06 (NFHS-3). National Report*'. International Institute of Population Sciences, Mumbai

Menon, Purnima, Anil Deolalikar and Anjor Bhaskar (2008) *The India State Hunger Index: Comparisons of Hunger across States*, International Food Policy Research Institute available at <u>http://www.ifpri.org/pubs/cp/ishi08.asp</u>).

NSSO, Report No. 508, Level and Pattern of Consumer Expenditure, 2004-05.

_____ Report No. 513, *Nutritional Intake in India*, 2004-2005.

Patnaik, Utsa (2007), 'Neoliberalism and Rural Poverty in India', *Economic and Political Weekly*, Vol. 42(30): 3132-3150.

Von Grebmer K, Fritschel H, Nestorova B, Olofinbiyi T, Pandya - Lorch R, Yohannes Y. (2008). '*Global Hunger Index Report 2008*'. Welt hunger hilfe, International Food Policy Research Institute, Concern.

Weismann D, Sost AK, Schoeninger I, Dalzell H, Kiess L, Arnold T, Collins S. (2007) *The Challenge of Hunger 2007: Global Hunger Index: Facts, determinants, and trends. Measures being taken to reduce acute undernourishment and chronic hunger*', Welt hunger hilfe, International Food Policy Research Institute, Concern.