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Hunger, Under-Nutrition and Food Security in India

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Executive Summary

This paper examines the hunger and nutrition situation prevailing in India and suggests policy measures for ensuring adequate food security at the household level, particularly for marginalised groups, destitute people, women and children.

Despite rapid economic growth in the past two decades, India is unlikely to meet the first Millennium Development Goal (MDG) of cutting the proportion of hungry people by half. Per capita availability, as well as consumption of food grains, in India has declined since 1996; the percentage of underweight children has remained stagnant between 1998 and 2006; and the calorie consumption of the bottom half of the population has been consistently declining since 1987. In short, all indicators point to the hard fact that endemic hunger continues to afflict a large proportion of the Indian population.

Hunger in simple terms is the desire to consume food. However, as a result of an inadequate diet over time the human body gets used to having less food than is necessary for healthy development, and after a while the body does not even demand more food. In such cases hunger is not expressed, although a lower intake of essential calories, proteins, fats, and micronutrients would result in under-development of the human mind and body. Thus objective indicators such as calorie consumption, body mass index (BMI), the proportion of malnourished children, and child mortality capture hunger more scientifically than the subjective articulation by individuals.

Surveys on self-reported hunger depend on the responses of the head of the household, often a man, who may not admit that he cannot provide even two square meals to his dependants. Pride, self-image and dignity are issues here, which lead to a deep sense of shame and reluctance on the part of heads of households to publicly admit their incapacity to provide for their families. This may result in under-reporting on the number of meals family members are able to afford. Despite this limitation, a recent United Nations Development Programme (UNDP) survey (2008) of 16 districts in the seven poorest states of India showed that for 7.5 percent of respondents access to food is highly inadequate, and for another 29 percent of the households it is somewhat inadequate. A West Bengal government survey also reported that 15 percent of families were facing difficulties in arranging two square meals a day year round. These figures are gloomier than those in the National Sample Survey Organisation (NSSO) survey of the Ministry of Statistics and Programme Implementation, which claim a drastic decline in self-reported hunger in India from 16.1 to 1.9 percent in the past 20 years.

However, NSSO's calorie intake data show that at any given point in time the calorie intake of the poorest quartile continues to be 30 to 50 percent less than the calorie intake of the top quartile of the population, despite the poor needing more calories because of harder manual work. The data also show higher reliance of the poor on cereal-based calories because of a lack of access to fruits, vegetables and meat products. Second, daily calorie consumption of the bottom 25 percent of the population has decreased from 1,683 kcalories in 1987–88 to 1,624 kcalories in 2004–05. These figures should be judged against a national norm of 2,400 and 2,100 kcalories/day for rural and urban areas fixed by the Government of India (GOI) in 1979. Similar downward trend is observed for cereal consumption too. As the relative price of food items has remained stable over the past 20 years, declining consumption can be attributed to the lack of purchasing power and contraction of effective demand by poor people, who are forced to spend a greater part of their limited incomes on

non-food items like transport, fuel and light, health and education, which have become as essential as food.

Calorie intake refers to the most proximate aspect of hunger, but it neglects other effects of hunger, such as being underweight, and mortality. These are captured by the Global Hunger Index (GHI) which was designed by the International Food Policy Research Institute (IFPRI) based on three dimensions of hunger: lack of economic access to food, shortfalls in the nutritional status of children, and child mortality, which is to a large extent attributable to malnutrition. IFPRI estimated the hunger index for India as 23 percent in 2008, which placed it in the category of nations where hunger was 'alarming', with Madhya Pradesh being categorised as 'extremely alarming'. Worse, India's score was poorer than that of many sub-Saharan African counties with a lower GDP than India's.

This is primarily because anthropometric indicators of the nutritional status of children in India are among the worst in the world. According to the National Family Health Survey, the proportion of underweight children remained virtually unchanged between 1998–99 and 2005–06 (from 47 to 46 percent for the age group of 0–3 years). These are appalling figures, which place India among the most 'undernourished' countries in the world.

The higher child malnutrition rate in India (and for that matter in the whole of South Asia) is caused by many factors. First, Indian women's nutrition, feeding and caring practices for young children are inadequate. This is related to their status in society, to early marriage, low weight at pregnancy and their lower level of education. The proportion of infants with a low birth weight in 2006 was as high as 30 percent. Underweight women produce low birth-weight babies which become further vulnerable to malnutrition because of low dietary intake, lack of appropriate care, poor hygiene, poor access to medical facilities, and inequitable distribution of food within the household.

Second, many unscientific traditional practices still continue, such as delaying breast feeding after birth, no exclusive breastfeeding for the first five months, irregular and insufficient complementary feeding in the period six months to two years of age, and lack of disposal of children's excreta because of the practice of open defecation in or close to the house itself. Clearly the government's efforts to change these age old practices are not working well.

Third, poor supply of government services, such as immunisation and access to medical care, and lack of priority to assigned primary health care in government programmes also contribute to morbidity. These factors, combined with poor food availability in the family, unsafe drinking water and lack of sanitation, lead to high child under-nutrition and mortality. About 2.1 million deaths occur annually in under-five-year-old children in India. Seven out of ten of these are caused by diarrhoea, pneumonia, measles, or malnutrition and often a combination of these conditions.

Policy recommendations

First, revamp small-holder agriculture. Because of stagnating growth in agriculture after the mid-1990s there has been employment decline, income decline and hence a fall in aggregate demand by the rural poor. The most important intervention that is needed is greater investment in irrigation, power and roads in poorer regions. It is essential to realise the potential for production surpluses in central and eastern India, where the concentration of poverty is increasing.

Second, launch watershed development programmes in the uplands, where most tribes live. In a successful watershed programme the poor benefit in three ways. First, as the net sown area and crop intensity increases, more opportunities for wage employment are created, which may also increase the wage rate besides the number of days of employment. Second, greater water availability and reduced soil erosion increase production on small and marginal farmers' lands. And, last, the higher productivity of common property resources (CPRs) improves access of the poor to more fodder, fuelwood, water and non-timber forest products (NTFPs).

Third, start a drive to plant fruit trees on degraded forest and homestead lands that belong to or have been allotted to the poor. This will not only make poor people's diet more nutritious, but will also diversify their livelihoods and reduce seasonal vulnerability.

Fourth, create more job opportunities by undertaking massive public works in districts with low agricultural productivity. The legal guarantee of 100 days wages available under the National Rural Employment Guarantee Act (NREGA), according to the Comptroller and Auditor General of India (Comptroller and Auditor General 2007), has been fulfilled in only 3 percent of cases. In addition to increased outlays, the scheme should have a food component, now that the GOI has a comfortable stock of food grains. Monitor the inclusion of old people, especially widows, among the wage workers, who are often illegally turned away from worksites. Their work guarantees should be extended to 150 days through an amendment in the Act.

Fifth, provide separate ration cards as well as NREGA job cards to all 'single' women, regardless of whether they live alone, with dependants, or in their natal or husband's home. Likewise for aged, infirm and disabled people who may or may not live with 'able-bodied' caregivers.

Sixth, improve the skills of the poor for market oriented jobs, so that they are absorbed in the sunrise industries such as hospitality, security, health and construction.

Seventh, improve the distribution of subsidised food grains to the poor through the Public Distribution System (PDS). This would require a correct listing of below-poverty-line (BPL) families, as errors mean many BPL families are excluded while above-poverty-line (APL) families are included. Launch a drive in collaboration with civil society to cover the poorest, as a large number of homeless and poor people living in unauthorised colonies in urban areas have been denied ration cards, and are thus not able to access the PDS, on the grounds that they do not have an address!

Eighth, restructure the Integrated Child Development Services (ICDS). Despite a three-fold increase in its budget by the GOI in the past five years and the contention of the Ministry of Women and Child Development that there are 1.5 early child-care centres (ICDS centres) per village now, ICDS is reaching only 12.5 percent children in the age group six months to six years. As each centre is likely to be located in the richer part of the village, it may not reach the vulnerable children of poorer households and lower castes and those living in remote areas. The programme targets children mostly after the age of three, when malnutrition has already set in. It does not focus on the critical age group of children under three years, the age window during which health and nutrition interventions can have the most effect.

The focus of ICDS should be health and nutrition education, encouraging women to breastfeed exclusively for six months and after that to add semi-solid family food four

to six times a day in appropriate quantities for the infant, which alone can improve the infant's nutrition levels. For nutrition to improve, we have to strengthen proper breastfeeding and complementary feeding, together with complete immunisation and prompt management of any illness.

Ninth, cover all adolescent girls under ICDS. They need to be graded according to age, such as 10–15 group, 16–19 group and pregnant girls. Then they should be weighed regularly, and given appropriate nutritious food containing all the desired micro-nutrients and iron. Similar initiatives are needed for all women.

Tenth, establish ICDS centres as a priority within one year in all primitive tribal group (PTG) settlements and the most marginalised scheduled caste (SC) – previously the untouchable people - settlements, without any ceiling on minimum children; do this for all other hamlets with more than 50 percent SC, ST, or minority populations within two years. In all these centres ICDS staff should be locals from the affected communities, two hot meals should be served instead of one to children aged three to six years; and weaning foods given at least twice daily to children below three years of age.

Eleventh, prepare a comprehensive list every two years of all destitutes needing free or subsidised cooked food. Open kitchens that serve mid day meals to the old, the destitute and the hungry in the village. This is already being done in Tamil Nadu, and its replication in other states should be funded by the GOI. Establish community kitchens across cities and urban settlements to provide inexpensive, subsidised, nutritious cooked meals near urban homeless and migrant labour settlements.

Last, India requires a significant increase in targeted investments in nutrition programmes, clinics, disease control, irrigation, rural electrification, rural roads, and other basic investments, especially in rural areas, where the current budgetary allocations are inadequate. Higher public investments in these areas need to be accompanied by systemic reforms that will overhaul the present system of service delivery, including issues of control and oversight (Bajpai *et al*., 2005). Outlays should not be considered an end in themselves. Delivery of food-based schemes requires increased financial resources, but more importantly the quality of public expenditures in these areas. This in turn requires improving the governance, productivity and accountability of the government machinery.

Keywords: India, hunger, under-nutrition, food security, women, child malnutrition

Contents

1. Introduction: Understanding Hunger

In the past decade and a half since India successfully embraced economic reforms, a curious problem has haunted the country and vexed its policy makers: India's high growth has had little impact on food security and the nutrition levels of its population.[1] Per capita availability as well as consumption of food grains has decreased; the cereal intake of the bottom 30 percent of the population continues to be much less than that of the top two deciles of the population, despite the latter group's better access to fruits, vegetables and meat products; the calorie consumption of the bottom half of the population has been consistently decreasing since 1987; unemployment among agricultural labour households has sharply increased, from 9.5 percent in 1993–94 to 15.3 percent in 2004–05 (Planning Commission, 2006); the percentage of underweight children has remained stagnant between 1998 and 2006; and more than half of India's women and three-quarters of its children are anaemic, with no decline in these estimates in the past eight years. In short, all indicators point to the hard fact that endemic hunger continues to afflict a large proportion of the Indian population. The International Food Policy Research Institute (IFPRI) (2008) shows India suffering from alarming hunger, ranking 66 out of the 88 developing countries studied. As part of the world community India has pledged to halve hunger by 2015, as stated in the Millennium Development Goal 1, but present trends show that this target is unlikely to be met.

This paper examines the hunger and nutrition situation prevailing in the country and reviews the obligations and initiatives taken by the Government of India (GOI) to ensure food security through various policies and schemes.

Section 2 of the paper looks at various forms of hunger and makes a distinction between explicit hunger and chronic or endemic hunger, which manifests itself in a lower intake of essential calories, proteins, fats, and micronutrients, resulting in the underdevelopment of the human mind and body. Section three examines data, both from government and other sources, on self-reported hunger. It also discusses India's record in improving its position on various indicators generally used to measure hunger, such as calorie consumption, body mass index (BMI), proportion of malnourished children, and child mortality.

The fourth section analyses various aspects of food security both at the micro and macro levels. The reasons for the decline in food consumption are analysed, followed by a brief discussion of the recent global trend of reduced food availability and increasing prices. The fifth section is devoted to suggesting changes in some of the major policies and programmes that affect food security, such as agricultural production, public wage works, the Public Distribution System, the Mid Day Meals Scheme, and the Integrated Child Development Services (ICDS) programme for improving child malnutrition. This is followed by a brief report on the Supreme Court intervention on hunger-related matters. The paper ends with a discussion of accountability, which is a cross-sectoral issue.

[1] The commonly accepted definition adopted at the 1996 World Food Summit is: food security is achieved when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

2. Types of Hunger

There are essentially two types of hunger (Gopaldas, 2006). The first is overt (or raw) hunger, or the need to fill the belly every few hours. Hunger in simple terms is the desire to consume food. It can also be termed as self-reported hunger, whereby people judge their own ability to fulfil the physiological urge to satisfy their hunger.

The second type of hunger occurs when the human body gets used to having less food than necessary for healthy development, and after a while does not even demand more food. If people have always eaten less than their needs, their bodies adjust to less food in what is known as biostasis (Krishnaraj, 2006). It is also possible to fill up the stomach with non-nutritious food, which does not provide the required calories or micronutrients[2] like vitamins, iron, iodine, zinc, and calcium that are required in tiny amounts. Another situation could be when the essential calories, proteins, fats and micronutrients are not absorbed in the body due to ill-health and poor hygiene. In all such cases hunger is not articulated.

This second kind of hunger may be termed chronic or endemic hunger, as it is not felt, recognised or voiced by children or adults. Chronic hunger does not translate into hunger pangs, but into subtle changes in the way the human body develops. For instance, an underfed child may be underweight or stunted for his or her age, if not consuming sufficient calories and fats. If the child is deficient in Vitamin A, he or she will not be able to see properly at dusk ('night blindness'), and respiratory ailments may also occur. In severe Vitamin A deficiency the child may go totally blind. In the case of iron-deficiency anaemia, the child will slow down both mentally and physically, perform poorly in school and experience chronic tiredness. In the case of iodine deficiency, there will be mental retardation. In its severe form, a goitrous lump may grow at the base of the neck. Thus prolonged hunger means that a predetermined 'physiological requirement' or 'human potential', defined in terms of norms for calorie and other essential nutrients and growth standards, is not reached.

Subjective hunger, or the first kind of hunger, is a matter of articulation – people or populations have to indicate in some fashion that they are going hungry. This means there must be a state of not being hungry, so that the state of being hungry can be recognised as such. What if, not having such a base level, people cannot recognise or articulate hunger? What if they have always had less food than they need? If the body gets used to having less food than needed, then hunger may never be articulated. Self-reported hunger is also difficult to measure, since perceptions of hunger differ from one person to another. Therefore objective indicators, such as calorie consumption, body mass index (BMI), stunting and lack of sufficient variety in food intake, offer a better measure for hunger, as it is perfectly possible to have a full belly and yet display every symptom of under-nutrition.

There is a link between nutritional status or health and human effort and productivity. Hunger affects the ability of individuals to work productively, to think clearly, and to resist disease. Hunger may lead to low output and hence poor wages. Hunger is thus both a cause and an effect of poverty. Hunger in India has gender and age dimensions too. Women, children and old people are less likely to get full nutritious meals needed for their development. Half of the country's women suffer from anaemia and maternal under-nourishment, resulting in maternal mortality and underweight babies. There are

[2] Deficiency in micronutrients is often referred to as hidden hunger. However, micronutrients do not work unless the person is consuming sufficient calories thanks to a proper quantity of fat, protein, etc.

important seasonal variations in nutritional and health status depending on the cycle of agricultural work. Hunger and starvation also have regional and geographical dimensions. Tribal regions in India have a higher incidence of food insecurity than the non-tribal regions in the same state. Agriculture has brought uneven development across regions and is characterised by low levels of productivity and the degradation of natural resources in tribal areas, leading to low crop output and reduced gathering from common property resources (CPRs).

Hunger can also be equated with chronic food insecurity, as both refer to a situation in which people consistently consume diets inadequate in calories and essential nutrients. This often happens as a result of the inability to 'access' food because of lack of purchasing power. Destitution, leading in extreme cases to starvation deaths but in any case to a life in misery, is more endemic among certain groups. These include persons with disabilities, persons with stigmatising illnesses such as leprosy or HIV/AIDS, the elderly and the young who lack family support, and single women. Social and employment factors causing destitution include being in a scheduled caste population, or tribal population, or being a manual scavenger, beggar, sex worker, landless labourer or artisan. Persons displaced by natural disasters or development projects are also often in this group. Because of prolonged deprivation of sufficient food and recurring uncertainty about its availability these people are forced to lose their dignity through foraging and begging, debt bondage and low-end, highly underpaid work; self denial; and sacrifice of other survival needs like medicine or children's education. Thus they transfer their misery to the next generation (Mander, 2008).

3. Dimensions of Hunger

3.1 Self-reported hunger

Various National Sample Survey Organisation (NSSO)[3] rounds in India from 1983 onwards have statistically measured[4] the first type of hunger, by asking people about the availability of two square meals a day. The results are shown in Table 1.

Table 1: Self-reported hunger in India (1983 to 2004–05)

Year	Percentage of population reporting hunger		
	Rural	**Urban**	**Total**
1983	18.54	6.33	16.1
1993–94	5.1	1.6	4.2
1999–2000	3.3	0.9	2.6
2004–05	2.4	0.5	1.9

Source: Kumaran (2008).

Explicit hunger is especially severe in rural Orissa, West Bengal, Kerala, Assam and Bihar. The non-availability of two square meals a day peaks in the summer months from June to September, with longer periods of suffering in West Bengal and Orissa (Mehta and Shah, 2001).

The data show a drastic decline in self-reported hunger in India from 16.1 to 1.9 percent, which can be interpreted as a decline in food insecurity in its severest form, while much has been left undone on other fronts like food and nutritional insecurity in its not so severe form. However, how does one reconcile the above data with significant reduction in cereal intake (see Table 16) over the years? Is that a result of declining demand or a sign of distress?

An Expert Group (GOI, 1993), while evaluating the suitability of using subjective hunger data for inferring the extent of poverty, arrived at two critiques which are useful for the present context. First, commenting on the limited reliability of the data as an objective measure, the Expert Group noted:

> It has to be kept in mind that the information regarding the adequacy or inadequacy of food for consumption, elicited through a single probing question, may not always be free from subjectivity and at the same time may not be adequately precise and objective. For instance the size of a 'square meal' would differ not only from person to person but also from place to place. (GOI, 1993: 53).

The second aspect, noted by the Expert Group, relates to the problem of relying on the male head of the household for information on hunger experienced by other family members.

[3] The NSSO of the Ministry of Programme Implementation and Statistics (GOI) conducts surveys on various socio-economic issues annually. The 61st round of the National Sample Survey (NSS) conducted between July 2004 and June 2005 collected data on household consumer expenditure on a large sample basis and was the seventh quinquennial survey on the subject. It covered a sample of 79,298 rural and 45,346 urban households in all the states and union territories of India.

[4] In 1999–2000 and 2004–05 the question asked was: 'Do all members of your household get enough food every day?' (NSSO, 2007). In earlier surveys the respondents were asked about the availability of two square meals a day for their family members.

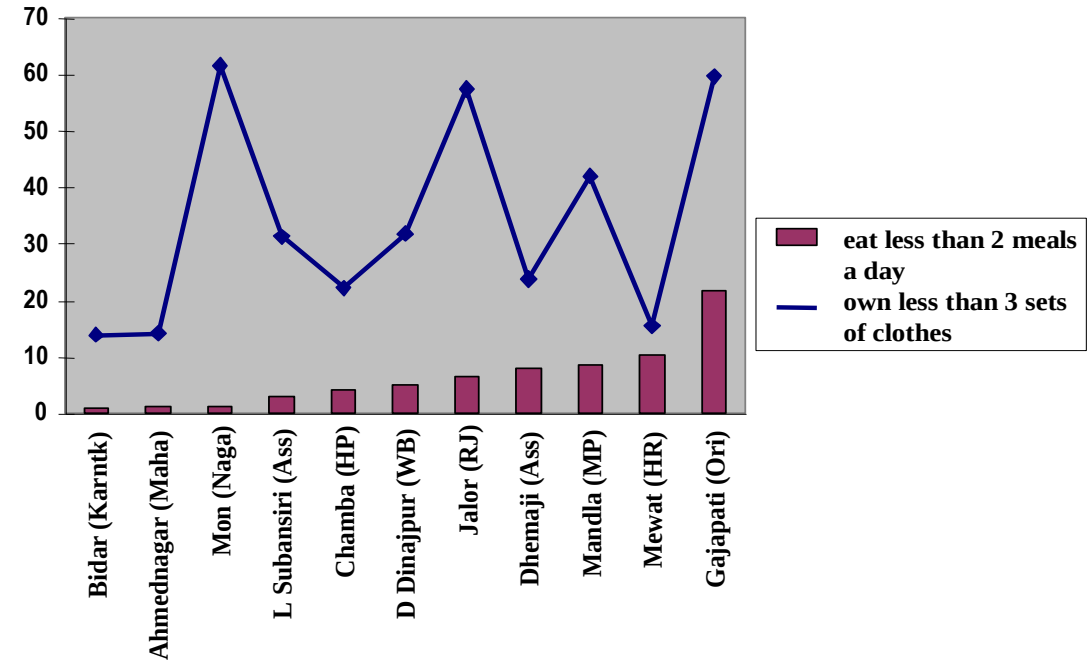
> Very often, particularly in rural India, the head of the family, usually a man, who is the main respondent in the survey, would not be sufficiently aware of the quantity and content of meal left for his wife and other female members of the house. Therefore, this data would probably give only a broad idea about the perceptions of the people on adequacy of food. (GOI, 1993: 54)

There is yet another problem in interpreting the data given in Table 1. As breadwinners men often hate to admit that they cannot provide even two square meals to their dependants (Kundu, 2006: 120). Issues of pride, self-image and dignity are involved here and lead to a deep sense of shame and reluctance on the part of heads of households to publicly admit their inability to provide for their respective families. This may result in over-reporting of the number of meals family members are able to afford. For these reasons the NSSO data on decline in hunger over the years cannot be relied upon.

In addition to the NSSO study, there have been other empirical studies on subjective hunger. The Government of West Bengal conducted a rural household survey (Roy, 2008) in 2006 through the *panchayats* and Rural Development Department in which 3.5 per cent of the population reported that they are not assured of even one meal a day. Another 16.5 percent face difficulties arranging two square meals a day for all months in a year. In all around 12 million rural people[5] (around 2.5 million rural families) do not get two square meals a day throughout the year.

In a survey (UNDP, 2007) in selected districts by Pratham, a voluntary organisation, rural residents were asked about the number of meals they consumed on most days in a year, and the number of clothes the young women in their families possessed. The results are shown in Figure 1.

Fig 1: Percentage of rural households who



Source: UNDP, 2007

[5] The total population of West Bengal in 2001 was 80 million.

The figure shows that the those consuming less than two meals a day varied from five to 23 percent in the rural areas of selected districts, while the number of women having just one or two set of clothes was as high as 60 percent in some districts.

A recent UNDP study (2008) selected 16 districts (nine 'backward' and 7 'non-backward') from the backward states and conducted a perception study of households selected at random. The findings on access to food are presented in Table 2.

Thus 7.5 percent of respondents state that their access to food grains is highly inadequate, and in about 29 percent of households it is somewhat inadequate. Only about nine per cent of households report that access to food grains is considered highly adequate. However, the district-based variations are stark. More than 76 percent of the households in Lalitpur have somewhat inadequate access. The situation in Muzaffarpur appears to be the most parlous, with nearly 31 percent of households reporting highly inadequate access. The need for governance and monitoring at the district level is therefore critical.

Table 2: District-based distribution of households according to adequacy of access to food

State	District	Highly adequate	Somewhat adequate	Average	Somewhat inadequate	Highly inadequate	Total
Rajasthan	Barmer	29.5	8.5	39.5	20.5	2	100
	Dungarpur*	2	4.5	65.5	25.5	2.5	100
Uttar Pradesh	Sitapur*	8	24	10	49	9	100
	Lalitpur*	3.5	5	5.5	76.5	9.5	100
	Azamgarh*	6	15.5	21.5	41	16	100
Madhya Pradesh	Mandla*	0.5	2	43.5	50.5	3.5	100
	Tikamgarh	14	45.5	23.5	10.5	6.5	100
Bihar	Gaya	4	16.5	23.5	46	10	100
	Muzzafarpur*	5.5	4	14	46	30.5	100
	Purnia*	4.5	3.5	16.5	49.5	26	100
Jharkhand	Palamu	17.5	35	40.5	7	0	100
	Dumka	12	41.5	37.5	9	0	100
Chhattisgarh	Kanker*	10	45	35.5	9.5	0	100
	BilasPur	14	69	16	1	0	100
Orissa	Ganjam	5.5	45	37.5	10	2	100
	Keonjhar*	2.5	36.5	40	18	3	100
Total (%)		**8.69**	**25.06**	**29.38**	**29.34**	**7.53**	**100**
Number		**278**	**802**	**940**	**939**	**241**	**3200**

Note: backward districts are marked with *

Source: UNDP 2008

3.2 Measuring hunger by calorie consumption

Hunger has many faces: loss of energy, apathy, increased susceptibility to disease, shortfalls in nutritional status, disability, and premature death. No single indicator can provide a complete picture, and a variety of different indicators should be used in analysing different aspects of the problem. Dietary diversity, rather than just the consumption of food staples, needs to be measured. Some aspects of hunger, such as

the stability of food consumption between seasons and between years are generally not captured by the existing data. In this paper we shall use several indicators – calorie consumption, BMI, low weight and height among children, and anaemia among women and children – to see how the situation has changed over the years in India.

In this section we focus on hunger-poverty, as measured by calorie deficiency – caused by not consuming the energy required by the body. The mean per capita consumption of calories, protein and fats as calculated by Deaton and Dreze (2008) for various NSS rounds is shown in Table 3.

Thus, in spite of India's rapid economic growth, there has been a sustained decline in per capita calorie and protein consumption during the past 25 years; fats are the only major nutrient group whose per capita consumption is unambiguously increasing. Patnaik (2007) points out that during the same period the calorie intake in below-poverty-line (BPL) households also declined. The calorie intake at poverty line was 2,170 kcal in 1977–78, 2,060 kcal in 1983, 1,980 kcal in 1993–94 and 1820 kcal in 2004–05.

Table 3: Mean per capita consumption of calories, protein and fats

		Calories (kc)		Protein (gm)		Fats (gm)	
Year	**Round**	**Rural**	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
1983	38	2,240	2,070	63.5	58.1	27.1	37.1
1987–78	43	2,233	2,095	63.2	58.6	28.3	39.3
1993–94	50	2,153	2,073	60.3	57.7	31.1	41.9
1999–2000	55	2,148	2,155	59.1	58.4	36.0	49.6
2000–01	56	2,083	2,027	56.8	55.3	34.6	46.1
2001–02	57	2,018	1,982	54.8	54.2	33.6	46.1
2002	58	2,025	2,014	55.4	54.9	34.7	47.0
2003	59	2,106	2,020	58.0	55.5	36.4	46.7
2004	60	2,087	2,036	56.9	55.9	35.5	46.8
2004–05	61	2,047	2,021	55.8	55.4	35.4	47.4

The decline in calorie consumption of the top quartile could be the result of a more sedentary lifestyle or of increasing diversity in food intake, but the decline for the bottom quartile since 1987, as shown in Table 4, cannot be interpreted as a sign of prosperity.

Several inferences can be drawn from Table 4. First, at any given point in time the calorie intake of the poorest quartile continues to be 30 to 50 percent less than the calorie intake of the top quartile of the population, despite the poor needing more calories to compensate for harder manual work. Second, the calorie consumption of the bottom 50 percent of the population has been consistently decreasing since 1987, which is a matter of concern. And last, whereas the top quartile derived only 58 percent of its calories from cereals in 2004–05, the bottom quartile still depended on cereals for 78 percent of its calorie consumption.

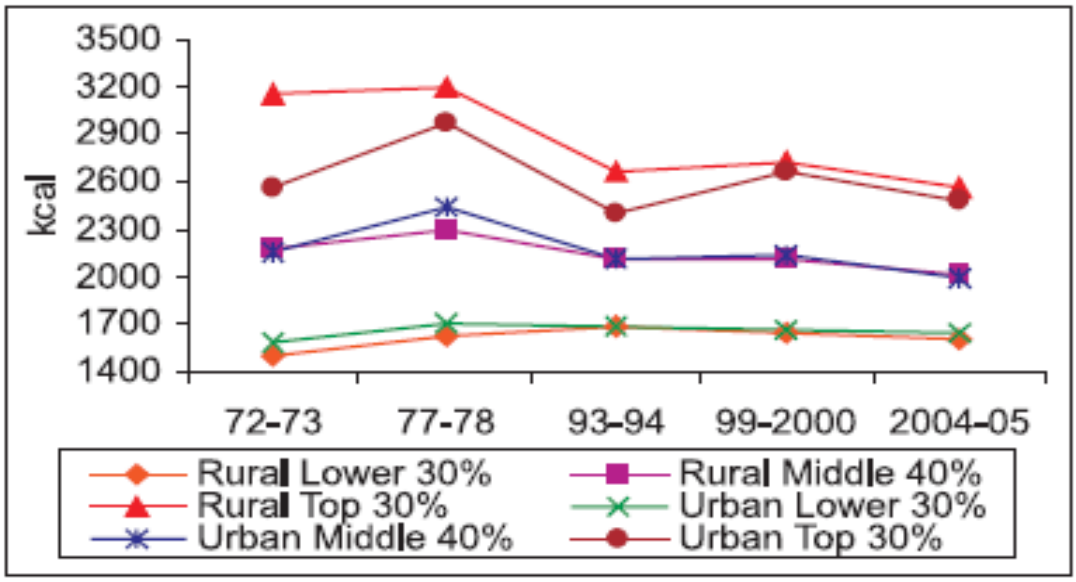
Table 4: Total and cereal calorie consumption by decile and quartile of per capita expenditure, rural India, 1983 to 2004–05 (in kcal)

	Bottom decile	Bottom quartile	Second quartile	Third quartile	Top quartile
Total calories					
1983	1,359	1,580	2,007	2,328	3,044
1987–88	1,488	1,683	2,056	2,334	2,863
1993–94	1,490	1,659	2,000	2,251	2,702
1999–2000	1,496	1,658	1,978	2,250	2,707
2004–05	1,485	1,624	1,900	2,143	2,521
Cereal calories					
1983	1,150	1,309	1,589	1,738	1,974
1987–88	1,221	1,359	1,598	1,715	1,894
1993–94	1,203	1,316	1,504	1,591	1,690
1999–2000	1,197	1,289	1,591	1,509	1,566
2004–05	1,189	1,259	1,690	1,430	1,471

Source: Deaton and Dreze (2008).

A similar picture of the wide gap between the consumption of the bottom 30 percent and top 30 percent, as well as of the falling calorie consumption over time of all groups including the lowest 30 percent, emerges when one looks at variations since 1972–73, as shown in Figure 2.

Figure 2: Time trends in average per capita energy intake by expenditure classes



Source: Ramachandran, P (2007).

Another study on hunger (Ahmed *et al.*, 2007) based on the same NSSO data, disaggregated those consuming fewer than 2,200 kcal in India into three groups:

- subjacent hungry: those consuming more than 1,800 but fewer than 2,200 kcal a day;
- medial hungry: those consuming more than 1,600 but fewer than 1,800 kcal a day;
- ultra-hungry: those consuming less than 1,600 kcal a day.

The study found that, in all, 58 percent of people in India suffered from hunger in 1999, of which 17.4 percent were classified as ultra-hungry (see Table 5).

Table 5: Incidence of hunger in India (1999)

	National	Rural	Urban
Subjacent hungry	28.6	28.9	27.9
Medial hungry	12.1	12.1	12.3
Ultra-hungry	17.4	17.1	18.0
Total	58.1	58.1	58.3

3.2.1 How many calories are needed for healthy living?

The calculation of calorie norms or requirements is complicated, as the daily calorie requirement for healthy life is a function of age, sex and nature of work. The required average for an entire society will decline if rising incomes lead to a shift from a manual to a sedentary lifestyle, but will go up if the proportion of the working age population increases, as indeed is happening in India thanks to demographic changes. In the absence of well accepted norms of calorie consumption for different time periods valid for India it is difficult to come to any definite conclusion about the percentage of the population that is not able to satisfy the minimum required calorie needs for healthy living in a particular year.

The Planning Commission constituted a 'Task Force on Projection of Minimum Needs and Effective Consumption Demand' which, on the basis of a systematic study of nutritional requirements (GOI, 1979), recommended a national norm of 2,400 kilo calories/day and 2,100 kilo calories/day for rural and urban areas (the difference being attributed to the lower rates of physical activity in the urban areas), respectively.[6] These figures were derived from age- sex- and occupation-specific nutritional norms by using the all-India demographic data from the 1971 Census. However, these have not been revised, hence the confusion in interpreting subsequent data based on old norms of calorie consumption.

There is yet another problem in interpreting calorie data, when these are disaggregated to the Indian states. The diet of people in poorer states, such as Assam, Orissa and Bihar, is not diversified and they eat more cereals compared with Kerala and Tamil Nadu, where diets include more vegetables, fats and fish. The result is that per capita calorie consumption is higher in Orissa and Bihar but, in the absence of proteins and essential fats these states report higher malnutrition than Kerala and Tamil Nadu, as shown in column 3 of Table 9. Therefore calorie consumption cannot be the sole determinant of hunger. Because of these problems Deaton and Dreze (2008) concluded that:

> there is no tight link between the number of calories consumed and nutritional or health status. Although the number of calories is important, so are other factors, such as a balanced diet containing a reasonable proportion of fruits, vegetables, and fats, not just calories from cereals, as are factors that affect the need for and

[6] The average calorie norm of 2,110 kcal per capita per day prescribed by the Food and Agriculture Organisation (FAO) for South Asia (Bajpai *et al*., 2005) in the 1980s is much lower than the 2,400 kcal norm that has been typically used by the GOI. The latest calorie norm used by the FAO for India is 1820 kcal (IFPRI, 2008).

retention of calories, such as activity levels, clean water, sanitation, good hygiene practices, and vaccinations.

The Millennium Development Goals (MDGs) call for the halving of hunger-poverty between 1990 and 2015. Assuming constant norms of 2400/2100 kcalories for India, this would mean bringing down the headcount ratio of calorie deficiency from 62.2 percent in 1990 to 31.1 percent in 2015.

Table 6: Fractions of the population living in households with per capita calorie consumption below 2,100 kcal in urban and 2,400 kcal in rural areas

Year	Round	Rural	Urban	All India
1983	38	66.1	60.5	64.8
1987–88	43	65.9	57.1	63.9
1993–94	50	71.1	58.1	67.8
1999–2000	55	74.2	58.2	70.1
2004–05	61	79.8	63.9	75.8

Source: Deaton and Dreze (2008).

However, the number of people below the norm has consistently increased over the years, and more than three quarters of the population live in households whose per capita calorie consumption is less than the norm, as shown in Table 6.

The mere consumption of an adequate number of calories may not ensure sufficient intake of other nutrients, such as proteins, fats and micronutrients, which are just as essential for human health. It can further be argued that there is a distinction between gross calorie intake and net calorie absorption, and that the relationship between the two may change over time depending upon the incidence and severity of gastro-intestinal disorders.

Table 7: Percentage of the undernourished population in India below the threshold levels of protein and fat, 1983 and 1999–2000

Year	Bottom group			Upper group		
	Rural	Urban	All India	Rural	Urban	All India
Protein						
1983	51	64	55	9	20	13
1999–2000	65	65	65	14	14	14
Fats						
1983	61	40	55	10	4	8
1999–00	48	16	36	4	2	3

Notes: Bottom group: below poverty line; Upper group: above 150 percent of poverty line.

Source: Kumar et al. (2007).

Table 7 reveals a general decrease in protein consumption, particularly in the bottom income group in rural areas,[7] where the population below threshold level has increased from 51 percent to 65 percent in terms of protein intake. Ideally, the source

[7] The sample households were grouped into poor (bottom) and non-poor (upper) classes. The non-poor class comprised households which were above 150 percent of the poverty line, whereas the poor class consisted of households below the poverty line. The poverty line for rural and urban areas in different states corresponding to various NSS rounds, as defined and adopted by the Planning Commission, was used in the study.

of protein should be pulses and meat. But the data show that cereals contributed 67 percent of the protein consumed in rural India. This can perhaps be explained in terms of the lack of purchasing power for procuring an adequate quantity of high-value non-cereal commodities to compensate for loss in nutrition caused by replacement of cereals.

To conclude this section, there is strong evidence of a sustained decline in per capita calorie and protein consumption in India during the past 25 years. The proportionate decline was larger among better-off sections of the population, but also existed for the bottom quartile of the per capita expenditure scale. While calorie deficiency is an extremely important aspect of nutritional deprivation, close attention needs to be paid to other aspects of food deprivation, such as the intake of vitamins and minerals, fat consumption, the diversity of the diet, and breastfeeding practices.

3.2.2 The official poverty line

The national-level official poverty lines for the base year (1973–74) were expressed as monthly per capita consumption expenditure of Rs 49 in rural areas and Rs 57 in urban areas, which corresponded to a basket of goods and services that satisfy the calorie norms of the per capita daily requirement of 2400 kcal in rural areas and 2100 kcal in urban areas. These figures have been updated for price rises for subsequent years. However, the new poverty lines do not correspond to the minimum calorie norm, as the poor have been forced to shift their priorities to essential non-food items.

Therefore for 1999–2000 the monetary cut-off corresponding to the minimum calorie requirements norms should have been Rs 565 in rural areas and Rs 628 in urban areas, whereas, by the price-updated methodology as used by Planning Commission, the poverty lines were Rs 328 and Rs 454, respectively. The current value of the poverty line does not permit the poverty line class to consume the calorific norm; the periodic price corrections carried out to update the poverty lines are inadequate and indeed may even be inappropriate (Sen, 2005). Consequently, the poverty estimates made in the years after 1973–74 understate the true incidence of poverty in India. There is a compelling case for re-estimating the poverty lines. The proportion of people living below the official poverty line declined from 56 percent in 1973–74 to 35 percent in 1993–94, and further to 28 percent in 2004–05, whereas there has been no decline in the number of people consuming fewer calories than the norm (Table 6). The set of food-insecure people in India is larger than the set of poor people in India.

Several features of poverty in India stand out. First, poverty is concentrated in the poorer states. In terms of absolute numbers, Uttar Pradesh, Bihar and Jharkhand account for around 27 percent of the country's population but were home to 30 percent of India's poor in 1973–74, which has increased to over 41 percent by 2005 (Himanshu, 2007). Second, more than three-quarters of poor people live in rural areas. Third, more than three-quarters of the rural poor depend on agriculture. Agricultural growth will therefore have the greatest potential for poverty reduction.

Fourth, poverty has many social dimensions. There has hardly been any decline in poverty for the scheduled tribe (ST) households, almost half of whom continue to live below the poverty line. Although poverty among the scheduled castes (SC) declined from 46 to 37 percent from 1993 to 2004 (Planning Commission, 2008), the caste system confines those from lower castes to a limited number of poorly paid, often socially stigmatised occupational niches from which there is little escape, except by migrating to other regions or to towns where their caste identity is less well known. Many states, especially in the north and west of India, are characterised by long-

standing and deeply entrenched social inequalities associated with gender. Gender cuts across class, leading to deprivations and vulnerabilities which are not necessarily associated with household income.

Last, poverty is intimately connected with vulnerability and shocks. Severe and chronic deprivation in India is compounded by general uncertainty with respect to livelihood and life, which threatens an even wider section of the population than those who might be counted as poor.

Thus poverty is an extremely complex phenomenon, which manifests itself in a range of overlapping and interwoven economic, political and social deprivations. These include lack of assets, low income levels, hunger, poor health, insecurity, physical and psychological hardship, social exclusion, degradation and discrimination, and political powerlessness and disarticulation. Policy instruments should be designed to address not only the low income and consumption aspect of poverty, but also the more complex social dimensions (Sen and Himanshu, 2004).

The existing types of poverty programmes may not be enough to tackle hunger and food insecurity. Important food security issues, like the stability of food consumption, dietary diversity and food absorption and utilisation, are often left out of poverty programmes. Furthermore, poverty programmes may fail to recognise how hunger and malnutrition impair people's capacity to participate in productive activities and result in worse school performance. Hence there is a need to make the issue of hunger mainstream in the existing programmes.

3.3 IFPRI's composite index on hunger

Calorie intake refers to the most proximate aspect of hunger, but it neglects other effects of hunger, such as low weight and mortality. These are captured by the Global Hunger Index (GHI), which was designed to capture three dimensions of hunger: lack of economic access to food, shortfalls in the nutritional status of children, and child mortality, which is to a large extent attributable to malnutrition (Weismann *et al*., 2007). Accordingly, the GHI includes the following three equally weighted indicators: the proportion of people who are food-energy deficient according to UN Food and Agriculture Organisation (FAO[8]) estimates, the proportion of children under the age of five who are underweight according to World Health Organisation (WHO) estimates, and the under-five mortality rate as estimated by UNICEF.

The GHI recognises the interconnectedness of these dimensions, and therefore captures performance on all three of them. The Index has been an effective advocacy tool which has brought the issue of global and national hunger to the fore in policy debates, especially in developing countries. The ranking of nations on the basis of their index scores has been a powerful tool to help focus attention on hunger, especially for countries like India which underperform on hunger and malnutrition relative to their income levels.

[8] According to FAO, after a decline of 20 million in the number of undernourished people between 1990–92 and 1995–97, the number of hungry people in India increased from 201.8 million in 1995–97 to 212.0 million in 2001–03.

IFPRI estimated[9] that the hunger index for India had declined from 34 percent in 1990 to 23 percent in 2008, although India still continued to be in the category of nations where hunger was 'alarming'. Worse, its score was poorer than that of many sub-Saharan African counties, which have a lower GDP than India's (see Table 8). This indicates continued poor performance at reducing hunger in India.

The recent IFPRI report (2008) estimated the hunger index for 17 major states in India, covering more than 95 percent of the population, as shown in Table 9. All 17 states have GHI scores that are well above the "low" and "moderate" hunger categories. Twelve of the 17 states fall into the "alarming" category, and one - Madhya Pradesh – into the "extremely alarming" category. The study concluded that GHI scores are closely aligned with poverty, but that there was little association with state level economic growth. High levels of hunger are seen even in states that are performing well economically, such as Gujarat and Karnataka.

Table 8: GDP per capita in relation to scores on the Global Hunger Index 2008

Country	GHI 2008	GDP per capita*
Nigeria	18.4	1977
Cameroon	18.7	2124
Kenya	19.9	1535
Sudan	20.5	2088
India	23.7	2753

Note: * GDP dollar estimates at Purchasing Power Parity (PPP) per capita.
Source: World Bank (2007a).

Table 9: Underlying components of India State Hunger Index and State Hunger Index scores

State	Prevalence of calorie under-nourish-ment	Proportion of low weight among children <5 years	Under-five mortality rate, reported as deaths per hundred	India State Hunger Index score	India Hunger Index ranking	Percentage of people below poverty line in 2004–05
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**
India	20.0	42.5	7.4	23.31		27.5
Andhra Pradesh	19.6	32.7	6.3	19.54	3	15.79
Assam	14.6	36.4	8.5	19.85	4	19.73
Bihar	17.3	56.1	8.5	27.30	15	41.35

[9] IFPRI used a cut-off of 1,632 kcals per person per day as the national calorie under-nutrition norm, thereby showing that 20 percent of Indians are calorie deficient. FAO has also used the norm of 1632 kcal, showing a reduction in the under-nourished population from 25 to 20 percent between 1990 and 2005. Had it used 1,820 kcals per person per day as the cut-off, the number of under-nourished people in 2005 would have been 34 percent.

Chhattisgarh	23.3	47.6	9.0	26.65	14	40.88
Gujarat	23.3	44.7	6.1	24.69	13	16.75
Haryana	15.1	39.7	5.2	20.01	5	14.03
Jharkhand	19.6	57.1	9.3	28.67	16	40.35
Karnataka	28.1	37.6	5.5	23.74	11	24.98
Kerala	28.6	22.7	1.6	17.66	2	15.04
Madhya Pradesh	23.4	59.8	9.4	30.90	17	38.29
Maharashtra	27.0	36.7	4.7	22.81	10	30.75
Orissa	21.4	40.9	9.1	23.79	12	46.37
Punjab	11.1	24.6	5.2	13.64	1	8.41
Rajasthan	14.0	40.4	8.5	20.99	7	22.06
Tamil Nadu	29.1	30.0	3.5	20.88	6	22.53
Uttar Pradesh	14.5	42.3	9.6	22.17	9	32.81
West Bengal	18.5	38.5	5.9	21.00	8	24.72

Source: IFPRI (2008).

3.4 BMI

A widely used measure of nutritional status is a combination of weight and height measurements known as the Body Mass Index (BMI). Low body weight, associated with low intakes, is an indication that people are not reaching their growth potential and hence is essentially a sign of continued hunger and nutritional distress. The BMI is defined as weight in kilogrammes divided by height in metres squared. A BMI of below 18.5 for adults indicates chronic energy deficiency (CED), the result of an intake of calories and other nutrients less than the requirement for a period of several months or years.

According to the XIth Plan, Volume 2 (Planning Commission, 2008), in 1998–99 as much as 36 percent of the adult Indian population had a BMI below 18.5; eight years later (2005–06) that share had barely fallen – to 33 percent of the population – despite a decade of robust economic growth. These figures are based on National Family Health Surveys (NFHS) data, which are collected from all states. Changes in BMI are also monitored by the National Nutrition Monitoring Bureau (NNMB), as shown in Table 10, but the NNMB covers only ten[10] states.

Table 10: Nutrition status of Indian adults, 1975–79 to 2004–5 (BMI)

	Proportion (per cent) of adults with BMI below 18.5					**per cent decline**
	1975–79	**1988–90**	**1996–97**	**2000–01**	**2004–05**	**(1975–9 to 2004–5)**
Men	56	49	46	37	33	41
Women	52	49	48	39	36	31

Source: Deaton and Dreze (2008).

Predictably the percentage of women in rural areas with a BMI below 18.5 in 2004–05 was 41.2 according to the NNMB, which is twice that among urban women, at 22.7 (Arnold *et al*., 2004). Regarding age distribution, the percentage of women with a BMI below 18.5 ranges from 41.7 for the age group 15–19 to 43.2 for 20–24, 39.4 for 25–29, 35.1 for 30–34 and 31.1 for 35–49. Ironically, it is at the most vulnerable

[10] Andhra Pradesh, Karnataka, Kerala, Tamil Nadu, Maharashtra, Madhya Pradesh, Orissa, Uttar Pradesh, Gujarat and West Bengal.

ages, when their reproductive demands are highest, that women are most deficient. So much for India's esteem for mothers!

The data for each social group for 1996–97 are presented in Table 11.

Table 11: Percentage of population with BMI <18.5

Overall	47
Scheduled castes	53.2
Scheduled tribes	60.9
Others	46.8

Source: Sen (2004).

Under-nutrition was relatively higher among the lower socio-economic category of households such as those belonging to the SC and ST communities.

A 20-year-trend (Sen, 2004), based on a large number of studies and the NNMB surveys of Indians (2006), shows that there have been minimal improvements in the weights of populations (of the same age) in India. The mean weight of children at five years of age in 1977 was 12.7 kg and 14.1 kg (girls and boys); when compared to the US National Center for Health Statistics (NCHS) median weights of 17.7 kg and 18.7 kg, this deficit is of about 4 kg at the age of five. This increased to a deficit of 14 kg and 23 kg by the age of 18, and the mean weights of Indian women and men were a mere 42.3 kg and 45.4 kg compared to the NCHS standard of 56.6 kg and 68.9 kg. There was a small improvement in the weights of Indians as they reached the age of 25 (42.8 kg and 49.9 kg), but this was still far below their desirable weight. At and above the age of 60 Indians slipped back to mean weights of 39.7 and 47.6 kg. By 1996 the nutritional status of a large number of people had not changed, or perhaps had improved only marginally. After observing an average weight gain of 1.25 kg to 2.5 kg in each age group, Shatrugna, (2001: 2) notes that these are mean weights, and roughly half the population in India has lower weights than these (weights as low as 38 kg) as adults, a condition ‘very close to chronic energy deficiency or starvation’. Fast economic growth did not help these people to gain a significant amount of height or weight.

Shatrugna also found that the average height of children from 1977 to 1996 increased minimally by 1 cm. Comparing the weight and height gain in high income groups in India, the author noted that there was a clear potential for improving the height and weight of the Indian population as reflected by the considerable weight gain by high income groups, captured by the field studies. However, there is a huge gap between actual and potential weight and height of the average Indian. In other words, under-nutrition is still forcing generations to remain stunted and thin, so they cannot engage in hard work, given the low level of their food intake.

3.5 Undernourished children

Just as for adults, for children too, the anthropometric indicators of nutritional status in India are among the worst in the world. According to the National Family Health Survey, the proportion of underweight children remained virtually unchanged between 1998–99 and 2005–06 (from 47 percent to 46 percent for the age group 0–3). These are appalling figures, placing India among the most undernourished countries in the world. The overall levels of child under-nutrition in India (including not only severe but also moderate under-nourishment) are shown in Table 12.

Over 70 to 80 percent of the calories consumed by the children (even though inadequate) are derived from cereals and pulses. This results in two things: 1) children cannot consume more cereals to make up for the calorie deficiency because of their sheer monotony and lack of energy density; 2) in the absence of fats, milk, eggs and sources of iron, children are starving themselves nutritionally. The resultant iron deficiency anaemia (IDA) further worsens their appetite. Therefore, in the absence of foods other than cereals and pulses in children's diets and the inability of children in the age group 1–18 years to derive and satisfy their protein-calorie and other nutrient needs, the malnutrition scenario can only get worse. Even the fats that provide energy density in the diets are not available in adequate quantities (normally fats should provide 30–40 percent of calorie needs). It is therefore not surprising that there is massive hunger leading to multiple nutrient deficiencies. This is not hidden hunger; it is hunger for nutrient rich foods (Planning Commission, 2008).

Table 12: Trends in child nutrition: NFHS data

	Proportion (percentage) of children under the age of three years who are undernourished				
	NCHS[a] standards			**New WHO standards**	
	1992–93	**1998–99**	**2005–06**	**1998–99**	**2005–06**
Weight-for-age					
Below 2 SD[b]	52	47.0	45.9	42.7	40.4
Below 3 SD	20	18.0	n/a	17.6	15.8
Height-for-age					
Below 2 SD	n/a	45.5	38.4	51.0	44.9
Below 3 SD	n/a	23.0	n/a	27.7	22.0
Weight-for-height					
Below 2 SD	n/a	15.5	19.1	19.7	22.9
Below 3 SD	n/a	2.8	n/a	6.7	7.9

Notes: [a] Until 2006 the WHO recommended the US NCHS standard, and this was used *inter alia* in the first and second rounds of the National Family Health Survey. In April 2006, the WHO released new standards based on children around the world (Brazil, Ghana, India, Norway, Oman, and the USA) who are raised in healthy environments, whose mothers do not smoke, and who are fed by recommended feeding practices. These new standards were used in the third National Family Health Survey. [b]SD: standard deviation.

Sources: For data in the table: NFHS. The data for children under five in 2005–06 are similar to the above, with 43% of under-fives suffering from moderate or severe underweight; 16% suffering from severe underweight; 20% suffering from moderate or severe wasting; and 48% suffering from moderate or severe stunting. See http://www.unicef.org/infobycountry/india_statistics.html.

The main reason for the higher child malnutrition rate in India (and for that matter in the whole of South Asia) than in poorer, conflict-plagued sub-Saharan Africa is that Indian women's nutrition, feeding and caring practices for young children are inadequate. This is related to their status in society, to early marriage, low weight at pregnancy and to their lower level of education. The percentage of infants with low birth weight (LBW) in 2006 was as high as 30. Underweight women produce LBW babies, which become further vulnerable to malnutrition because of low dietary intake, lack of appropriate care, poor hygiene, poor access to medical facilities, and inequitable distribution of food within the household.

Estimates based on available data from institutional deliveries and smaller community-based studies suggest that even now nearly one-third of all Indian infants weigh less than 2.5 kg at birth. Studies (Ramachandran, P. 2007) have shown that LBW children have a low growth trajectory in infancy and childhood.

Indian mothers on average put on barely five kilos during pregnancy. This is a fundamental reason behind the LBW problem. They should put on at least ten kilos, which is the average for a typical African woman (Planning Commission, 2008). Middle class Indian women tend to put on well over 10 kg weight during pregnancy. But this is not the only problem; LBW is also partly explained by the low BMI of women in general, prior to their becoming pregnant. Small women (who are small before they become pregnant) give birth to small babies.

Even worse is the situation regarding the number of anaemic children, whose percentage increased during 1998–2006 from 74 percent to 79 percent.

Table 13: Levels of anaemia among Indian children (as percentage of the total)

	NFHS-2 (1998–99)				**NFHS-3 (2005–06)**			
	All India	**Urban**	**Rural**	**Rural: urban ratio**	**All India**	**Urban**	**Rural**	**Rural: urban ratio**
Children aged 6–35 months who are anaemic	74	71	75	1.1	79	73	81	1.1

Source: Kumar (2007).

When one looks at the Indian states, unlike calorie consumption, which is only weakly correlated with poverty, child malnutrition has a strong correlation with poverty (see Table 9). Poorer states such as Madhya Pradesh, Bihar and Jharkhand show a high degree of malnutrition, whereas better-off states such as Punjab, Haryana, Tamil Nadu and Kerala have a comparatively better performance on this indicator.

Determinants of Indian children's malnourishment can be broadly divided into two categories. In the first are factors such as the irrational traditional practices that still continue, like not immediately starting breastfeeding after birth, not exclusively breastfeeding for the first five months, irregular and insufficient complementary feeding between six months and two years, and lack of disposal of children's excreta because of the practice of open defecation in or close to the house itself. NFHS-3 data show that only 21 percent of mothers dispose of their children's stool safely. There is wide variation between urban and rural households. Whereas 47.2 percent of urban mothers dispose of stools safely, the proportion was only 11.4 percent for rural mothers. Clearly the government's efforts to change age old practices are not working well, and critical public health messages are simply not reaching families with children.

In the second category are factors relating to the poor supply of government services, such as immunisation, access to medical care, and lack of priority[11] assigned to primary health care in government programmes. Table 14, based on NFHS-3 results, gives data on both child rearing practices and government delivery.

Despite the importance of breastfeeding and appropriate feeding for preventing malnutrition, only 23 percent of children under three years were breastfed within one hour of birth and less than half the babies (46 percent) aged 0–5 months were exclusively breastfed. Equally striking is the low proportion of children of six to nine months – 56 percent – who received solid or semi-solid food and breast milk. It is well known that frequent illnesses during early childhood and failing to treat them properly seriously affects children's nutritional well-being. With only one exception, namely, children aged 0–5 months being exclusively breastfed, all other indicators reveal lower reach of and access to health services and care in rural areas compared with urban areas. This partially explains the higher levels of under-nourishment in rural compared with urban areas. Also affecting the health and nutritional well-being of children is the status of women's health and their access to maternal care services.

Table 14: Access to and reach of basic health services for children, 2005–06

	Total	**Urban**	**Rural**
Children under three years breastfed within one hour of birth	23	29	22
Children aged 0–5 months exclusively breastfed	46	40	48
Children aged six to nine months receiving solid or semi-solid food and breast milk	56	62	54
Children aged 12–23 months fully immunised (BCG, measles and three doses each of polio/DPT)	44	58	39
Children aged 12–35 months who received a vitamin A dose in past six months	21	23	20
Children with diarrhoea in the past two weeks who received oral rehydration solution (ORS)	26	33	24
Children with diarrhoea in the past two weeks taken to a health facility	58	65	56
Mothers who had at least three antenatal care visits for their last birth	51	74	43
Mothers who consumed IFA (a vitamin A supplement tablet) for 90 days or more when they were pregnant with their last child	22	35	18

Source: Kumar (2007).

3.5.1 Inter-state differences

By and large, in the four states with the lowest proportion of underweight children – Punjab, Kerala, Jammu and Kashmir and Tamil Nadu – provisioning of health services, the care of children, especially newborns, and the nutritional status of women are better than in the four high-malnutrition states of Chhattisgarh, Bihar, Jharkhand and Madhya Pradesh.

[11] This is changing, however, with the introduction of the National Rural Health Mission in 2006. Early evaluation results show optimistic progress in institutional delivery, new household toilets, and creation of infrastructure for primary health care.

For instance, the proportion of fully immunised children varies between 60 and 81 percent in the low-malnutrition states and between 33 and 49 percent in the high-malnutrition states. In the low malnutrition states, between 73 and 97 percent of mothers received at least three antenatal care visits; this proportion varied between 17 and 55 percent in the high-malnutrition states. And whereas 14–24 percent of women in the low malnutrition states have a BMI below normal, the proportion varied from 40 to 43 percent in the high malnutrition states. There are, however, some exceptions that need more careful examination. Chhattisgarh and Jharkhand seem to be doing much better in their efforts to promote exclusive breastfeeding in the initial years of a child's life. Eighty-two per cent of children aged 0–5 months in Chhattisgarh and 58 percent in Jharkhand are exclusively breastfed, whereas in the low-malnutrition states the highest proportion is 56 percent in Kerala. Also, it is disturbing to find that Gujarat ranks among the top five states reporting the highest proportion of underweight children – a phenomenon that needs a closer examination.

The proportion of fully immunised children in the period 1998–99 to 2005–06 has declined in eight states: Andhra Pradesh, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Punjab and Tamil Nadu. These are generally regarded as more prosperous than other states. On the other hand, immunisation coverage rates have shown a significant improvement in West Bengal, Bihar, Jharkhand and Chhattisgarh.

On the whole, children's access to certain critical components of treatment of childhood diseases has declined over the past seven years. For instance, the proportion of children with diarrhoea who received ORS in the two weeks preceding the survey had risen from 18 percent in 1992–93 to 27 percent in 1998–99; but since then it has fallen to 26 percent in 2005–06.

The contrast between India and China[12] is also of some interest in this context. There is evidence of a steady growth in the heights of Chinese children in recent decades, not only during the period of fast economic growth that followed the 'economic reforms' of the late 1970s, but also before that. For instance, in a representative sample of Chinese children aged two to five years, the average increase in height between 1992 and 2002 was 3 cm in rural areas (for both boys and girls), and was even higher in urban areas (3.6 cm and 3.8 cm for boys and girls, respectively). According to an earlier study, the average heights of Chinese children between the ages of seven and 14 years increased by some 8.04 cm between 1951–58 and 1979. NNMB data suggest much slower growth rates for the heights of Indian children. The increase in their heights between 1975–79 and 2004–05 was a little below 2 cm per decade at age three, and barely 1 cm per decade at age five. The NNMB data also suggest that the growth rates of heights and weights were particularly slow in the latter part of this period, with, for instance, very little growth in the heights of children at age five between 1996–67 and 2004–05.

3.6 Women's malnutrition[13]

According to NFHS-3, while more than one-third of women were suffering from CED during 2005–06, over half the women in the 15–49 age group suffered from IDA. The incidence of anaemia among pregnant women is even higher: nearly 59 percent.

The implications of women's malnutrition for human development are multiple and cumulative. Women's malnutrition tends to increase the risk of maternal mortality.

[12] This paragraph is based on Deaton and Dreze (2008).

[13] This section is based on Jose and Navaneetham (2008).

Maternal short stature and IDA, which increase the risk of death of the mother at delivery, account for at least 20 percent of maternal mortality. Additionally, maternal malnutrition impinges significantly on such important but interconnected aspects as intra-uterine growth retardation, child malnutrition and the rising emergence of chronic diseases, among others.

Why has malnutrition been so high among women in India? The reasons are multiple and complex. But it seems that the discriminatory practices associated with India's rigid social norms and the excessive demands made on the time and energies of women join hands with the usual determinants in blighting women's nutrition. However, one of the usual determinants, namely poverty, seems equally important: not only is poverty one of the basic causes of malnutrition, but malnutrition is also considered to be both an outcome and a manifestation of poverty.

Table 15 provides data on women's nutrition for various social and economic groups, suggesting huge socio-economic disparities. Nearly 47 and 68 percent of women aged 15–49 years from the scheduled tribes suffer from CED and anaemia, respectively. What is more, more than one-third of them suffer from the double burden of both CED and anaemia. The incidence of malnutrition declines with the so-called rise in social status. By extension, such a decline also means huge disparities between social groups: a difference of more than 15 percentage points exists between ST women and others. Thus, the proportion of ST women suffering from both CED and anaemia comes close to double the proportion of the same among advantaged social groups. More than 50 and 64 percent of women from the poorest quintile suffer from CED and anaemia, respectively, with about one-third of them suffering from both. As we have observed among social groups, malnutrition among women goes down drastically with a rise in the household wealth status, creating an equally large disparity between wealth groups. The proportion of the poorest women suffering from CED and anaemia together is more than three times that found in the highest quintile.

Table 15: Women's nutrition for social and economic groups (%)

	CED	Anaemia	CED and anaemia		
			Both	Either	Neither
Social groups					
ST	46.6	68.5	33.5	47.8	18.7
SC	41.1	58.3	25.7	47.7	26.6
OBC[a]	35.7	54.4	20.8	48.3	30.9
Others	29.2	51.1	16.8	46.6	36.6
ST/others	1.60	1.34	1.99	1.03	0.51
Wealth groups					
Lowest	51.5	64.3	34.0	47.5	18.5
Second	46.3	60.3	29.0	48.3	22.7
Middle	38.3	56.0	22.9	48.2	28.9
Fourth	28.9	52.2	16.4	48.2	35.4
Highest	18.2	46.1	9.4	45.5	45.1
Lowest/highest	2.83	1.39	3.62	1.04	0.41

Note: OBC – other backward castes.

Source: Jose and Navaneetham 2008

It is also important to add here that the proportion of women suffering from anaemia is not low even within the richest quintile. This suggests that a substantially large

proportion of women in India, irrespective of their household wealth status, suffer from IDA. The huge disparity in women's malnutrition between economic and social groups in India is a matter of serious concern, as the levels of nutritional attainment appear to be not only unequal but also unjust.

Further analysis would suggest that, although economic and social disparities matter significantly and independently, the former seem to matter more, at least as far as women's malnutrition is concerned, than the latter. Eastern states, mainly Bihar, Jharkhand, Orissa and West Bengal, emerge as the repository of women's malnutrition in India. While these four states account for 22 percent of women considered for the analysis, 30 percent of women suffering from both CED and anaemia live in these states.

How does one change the situation? Ensuring equity in women's rights to land, property, capital assets, wages and livelihood opportunities would undoubtedly have a positive impact on the issue, but underlying the deep inequity in women's access to nutrition is their own unquestioning acceptance of their status as an unequal member of the family and society. Gender empowerment is likely to be the key to the resolution of the hunger challenge among women in India (Ramachandran, N. 2007).

3.7 Child mortality

Mortality in early childhood is measured using the following rates:

Neonatal mortality: the probability of dying within the first month of life;

Infant mortality: the probability of dying before the first birthday;

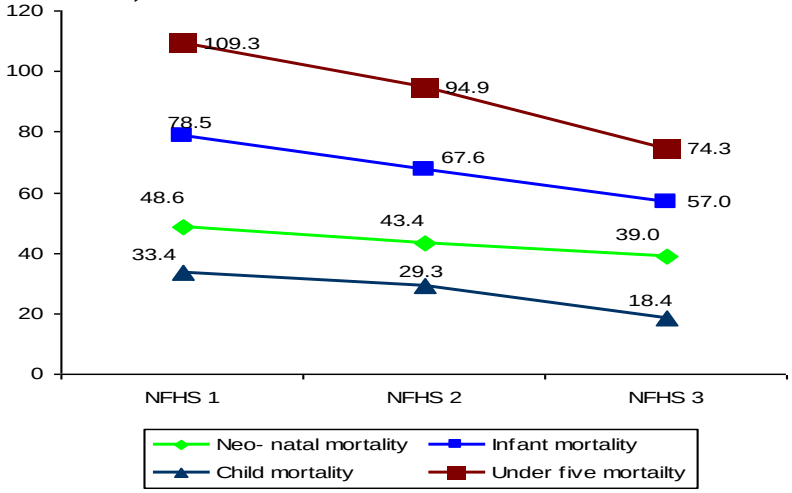
Child mortality: the probability of dying between the first and fifth birthday;

Under-five mortality: the probability of dying between birth and fifth birthday.

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age. Changes in these figures during the three NFHS periods is shown in Figure 3.

Malnutrition in children weakens their immune system, making them more susceptible to disease and less able to fight off infection. It has been estimated that a child is almost ten times more likely to die from key diseases if he or she is severely underweight, and two and a half times more likely to die if he or she is moderately underweight, as compared to an average weight child (Black *et al*., 2008). Given the fact that more than 3.5 million children die globally on account of under-nutrition, it emerges as a major factor leading to child deaths. Therefore, under-five mortality has been taken by IFPRI as the third indicator for measuring the Hunger Index.

Figure 3: Neonatal, infant, child and under-five mortality rates (annual deaths per 1000 live births)



About 2.1 million deaths occur annually among children aged five and under in India. Seven out of every ten of these are caused by diarrhoea, pneumonia, measles or malnutrition, and often by a combination of these conditions.

Child mortality is known to be the outcome of a wide variety of factors, such as the nutritional status of the child and its mother, food availability in the family, the level of immunisation, availability of maternal and child health services, economic status, availability of safe drinking water, basic sanitation, and so on. India accounts for 21 percent of a total of 9.7 million children dying globally before they reach the age of five. This is despite the fact that child mortality has declined by 48 percent (from 142 to 74 annual deaths per 1,000 live births) between 1990 and 2006. Under-five mortality has a strong correlation with the education level of the mother; while it was 94.7 for illiterate mothers, it was only 29.7 for those who had 12 years of education. As expected, child mortality is highest, at 95.7, for ST social groups, followed by 88.1 for SCs, and 59.2 for others (excluding OBCs, for whom it was 72.8).

NFHS-3 reflects, to a large extent, the limited access to and reach of public health services for women and children. In 2005–06, for instance, only 44 percent of children of 12–23 months were fully immunised. The national immunisation coverage in urban areas slipped from 61 percent in 1998–99 to 58 percent in 2005–06 and increased only slightly in rural areas from 37 percent to 39 percent. Only 26 percent of children with diarrhoea were given ORS and barely two-thirds (64 percent) of children suffering from acute respiratory infection or fever were taken to a health facility. This shows both the poor reach of public health services and also their limited accessibility to children. There are huge gaps in women's access to and the reach of maternal health services. Improvements in women's access to safe delivery, for instance, have been minimal. Between 1998–99 and 2005–06, the proportion of births assisted by a doctor, nurse, lady health visitor (LHV), ANM (Auxiliary Nurse Midwife) or other health personnel went up only marginally from 42 to 48 percent; institutional births went up from 36 to 41 percent over the same period.

A study conducted by Save the Children, which compares child mortality in a country to its per capita income, shows that India lags far behind its poorer neighbours like Bangladesh and Nepal, when it comes to reducing child deaths. A new Wealth and Survival Index, which is part of the study, has ranked 41 countries on the criterion of how well they use their resources to boost child survival rates. While Bangladesh and Nepal are listed among the top ten performers, India stands at a low 16th in the index. This can be elucidated by comparing India and Bangladesh. While India's per capita income increased by 42 percent from 2000 to 2006, its child mortality rate declined from 94 to 76 per 1000 live births. Over the same period, Bangladesh saw a much smaller increase in per capita income – only 23 percent – but its child mortality dropped from 92 to 69 (UNICEF, 2007).

4. Food Security

4.1 Consumption and prices

The NSSO data on consumer expenditure on food indicates a declining trend in the annual per capita consumption of cereals, for all classes of people, as shown in Table 16. The table clearly shows that, as India has moved to greater prosperity in the past 20 years, the cereal consumption of the rich has gone down, but there has been no increase for the poor. At any given point in time the cereal intake of the bottom 10 percent in rural India continues to be at least 20 percent less than the cereal intake of the top decile of the population, despite better access of the latter group to fruits, vegetables and meat products. This group's sedentary lifestyle should also be taken into account when assessing the difference between the two groups. For the upper segment of the population the decline may be attributed to a diversification in food consumption, easy access to supply of other high value agricultural commodities, changed tastes and preferences, and to consumption of more expensive non-foodgrain products (Mittal, 2008). Higher economic growth and per capita incomes thus contribute to reduction in per capita demand for cereals for the rich.

Table 16: Trends in cereal consumption across expenditure groups (kg per month)

Rural	**Percentile**				
	lowest 5%	**5%–10%**	**40%–50%**	**90%–95%**	**95 %–100%**
1993–94	9.68	11.29	13.33	14.98	15.78
1999–2000	9.78	11.15	12.89	13.73	14.19
2004–05	9.88	10.87	12.16	12.77	13.50
Urban	**Percentile**				
	lowest 5%	**5 %–10%**	**40 %–50%**	**90%–95%**	**95%–100%**
1993–94	8.91	10.11	10.99	10.19	10.29
1999–00	8.99	10.15	10.80	9.94	9.72
2004–05	9.25	10.04	10.25	9.50	9.10

Source: NSSO (2007).

However, for those who are around the poverty line, this has to be understood as a distress phenomenon, as with only a marginal increase in their incomes over time they are forced to cut down on their food consumption to meet other pressing demands that were not considered important in the past. For instance, as more schools open, the poor too wish to send their children to school, where expenses are incurred for clothes, books, etc., despite school fees being met by the government. These expenses thus become a new item in the household budget, and food expenditure may be curtailed to make room for it. Fighting sickness leads to another chunk of essential expenses, for which opportunities did not exist in the past, as there were no doctors in the vicinity. The share of fuel and light in total consumer expenditure has risen from under six percent to ten percent in both rural and urban areas between 1972–73 and 2004–05. Finally, the rural labouring masses have to spend on transport in order to earn their livelihoods. Food is still needed, but not demanded.

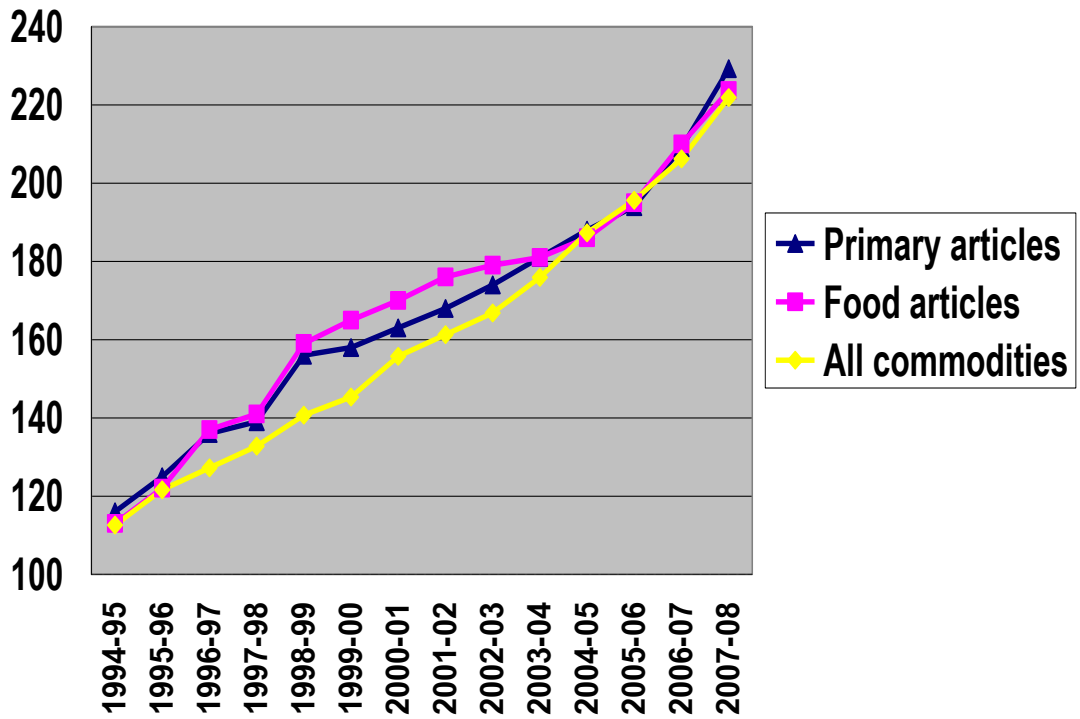
A survey by Mander (2008) of 474 destitute people in eight villages found that intense food shortages often demand the most unreasonable choices, such as between food and medicines, or between eating to save a life and relieving unbearable pain. Most

hungry people reported that their most hazardous fall into pauperisation was because they, or a loved one, had fallen gravely ill. Many old people simply try to wait out an attack of illness, and if that does not work they consult a local untrained practitioner, who demands his fees in advance, never guaranteeing cure. They do this by cutting back their food intake even further.

4.1.1 Food prices

Between 1972–73 and 2004–05 the share of food in total consumer expenditure fell from 73 percent to 55 percent in rural areas and from 64 percent to 42 percent in urban areas (NSSO, 2007: Report 508). Could the falling share of food expenses in the total budget of the poor be the result of rising food prices? This is unlikely. In rural India, food (and therefore calorie) prices moved along with general prices from 1983 until about 2000, and then fell by a little less than five percent relative to general prices. In urban India, there was a slow secular increase in the relative price of food, by less than five percent, from 1983 until the late 1990s, followed by a more pronounced decline, by more than ten percent, until the end of the period. In both sectors, the relative price of food was lower in 2004–05 than at the start of the period in 1983. The decline in food consumption cannot therefore be attributed to any increase in the relative price of food. As has been pointed out, the food budget of the poor has been squeezed out because the cost of meeting minimum non-food requirements has increased (Sen, 2005). Thus, it is not possible for households around the poverty line to purchase their initial food basket within their current food budget.

Figure 4: Changes in price index (1993-94=100)



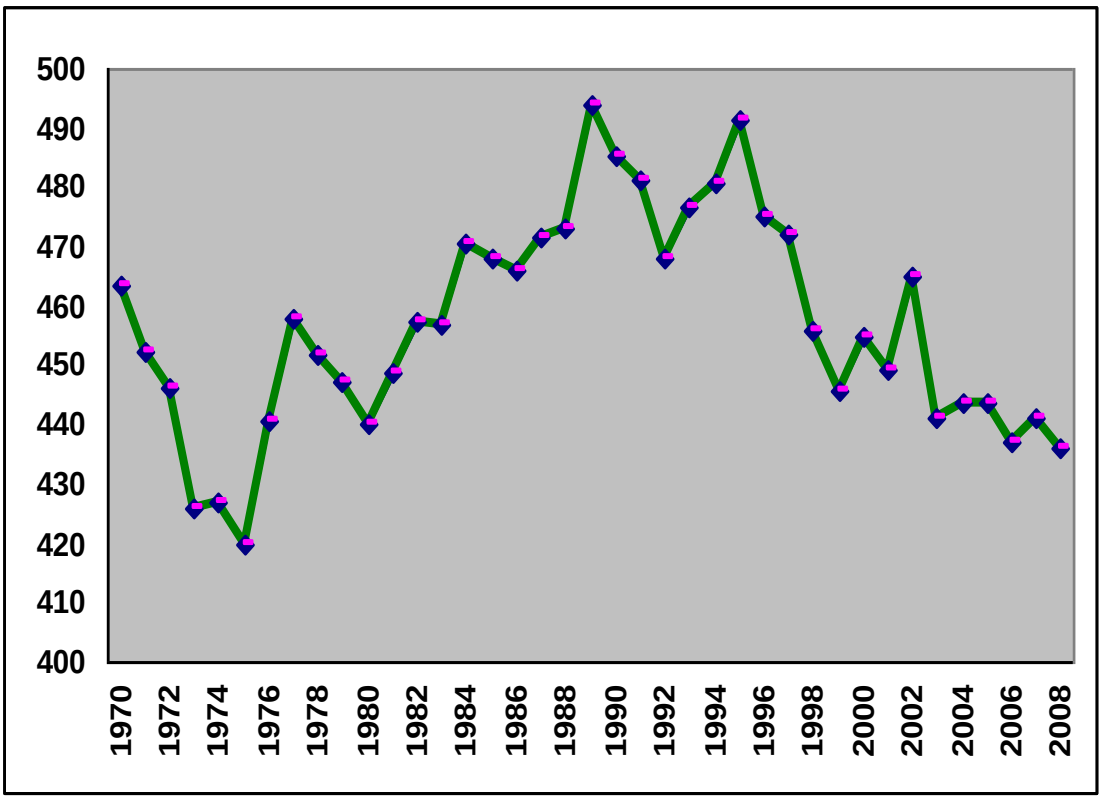
However, as Figure 4 shows, there has been a faster increase in food prices after 2005-06. This has resulted in higher spending on cereals, but the quantity of cereals consumed has not increased. Between 2005–06 and 2006–07 the average per capita monthly rural consumption of cereals fell from 11.92 to 11.69 kg, but the price increased from Rs 106 to Rs 115. For urban areas the corresponding figure was from 9.76 to 9.63 kg, and the increase in money spent was from Rs 110 to Rs 119.[14]

4.2 Food production, procurement and availability at the macro level

At the macro level foodgrains availability in India is calculated as 87.5 percent of gross production (the rest is estimated as requirement for seeds, farm animal feed, and waste) plus net imports minus changes in government stocks. Assuming no net change in private stocks, this can be taken as a good proxy for overall foodgrains consumption in the country.

During the 50 years before Independence foodgrains availability declined from 545 g to 407 g per head per day. Considering five-year averages India saw a rise in the foodgrains availability per head from 416 g during 1950–55 to 485 g by 1989–91 (Patnaik, 2004). However, since then there has been a slide to a low of 445 g per head per day by 2006, a level not seen since the drought years of the 1970s (see Figure 5).

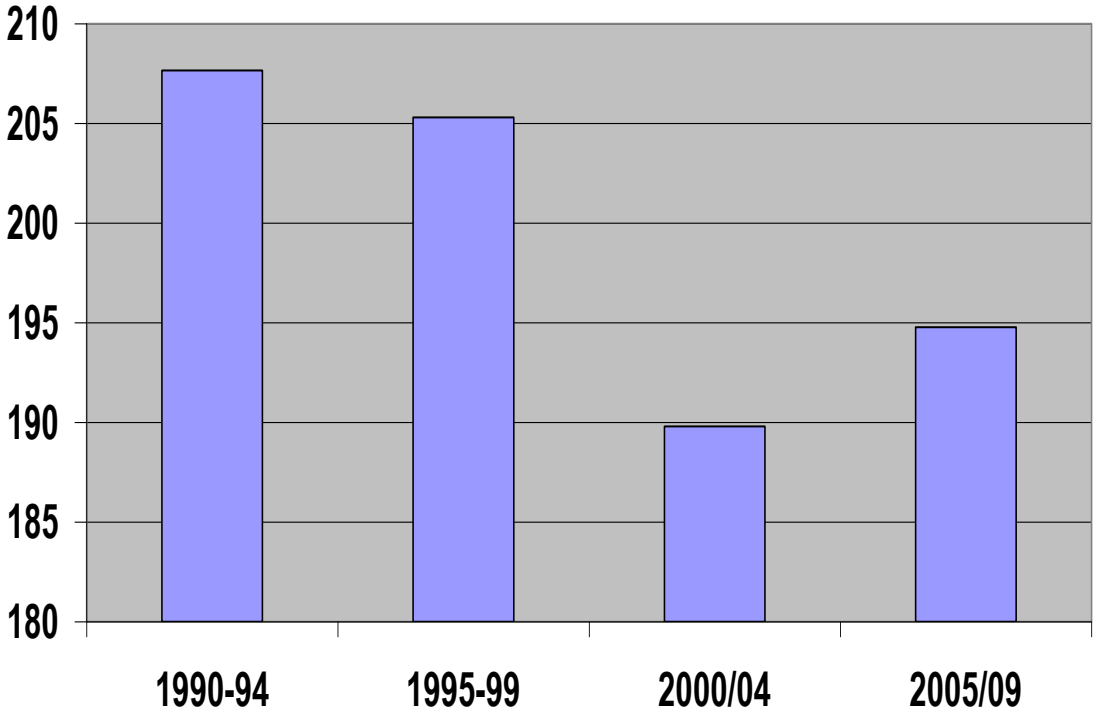
Figure 5: Per capita daily availability of foodgrains per day (grams)



Source: Based on *Economic Survey (2009–10).*

[14] *Economic Times*, 11 November 2008, based on NSSO 63rd round.

Figure 6: Annual per capita production of foodgrains (average of five years)

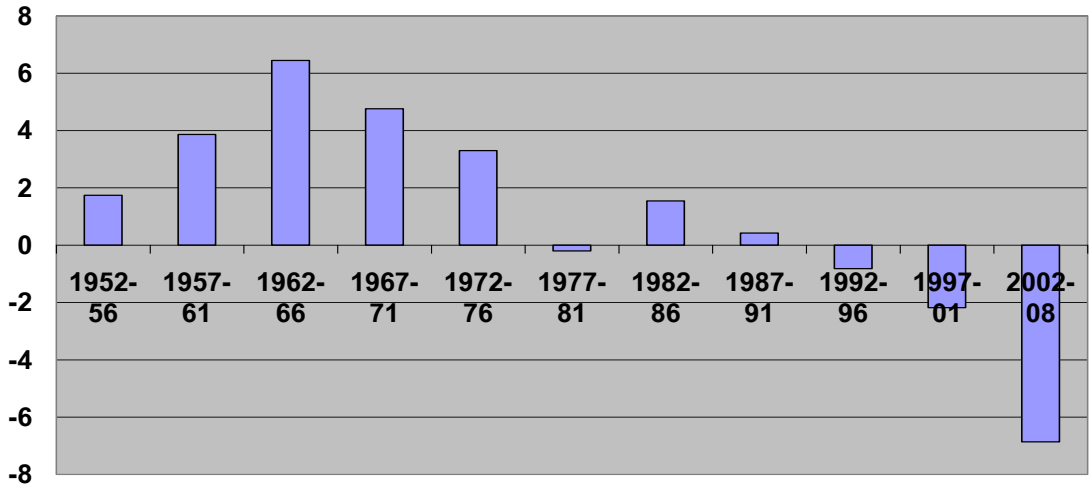


Source: Based on *Economic Survey (2009–10).*

The fall in availability is the result both of a drop in production (see Figure 6) and increasing exports (Figure 7). Between 2002 to 2008 the government exported on an average more than 7 million tonnes per annum of food grains, often at subsidised rates. Independent India has never before seen such huge exports, and it was highly unethical that the government allowed the export of foodgrains to feed cattle in foreign countries, applying a heavy subsidy to beat the low world price, rather than undertake widespread internal distribution of food grains.

Even though the growth of foodgrain production in the period 1989–2004 was lower than the increase in population during the same period, the procurement of cereals on the government account went up, suggesting a decline in poor people's consumption and in their purchasing power. This may have happened because of various structural imbalances like a high Minimum Support Price (MSP), rising capital intensity, lack of land reforms, failure of poverty alleviation programmes, and no new technological breakthrough in agriculture. It could also be the result of production problems in less endowed regions, like erratic rainfall, soil erosion and water run-off, lack of access to credit and markets, and poor communications, which led to a dangerous situation of huge surpluses in Food Corporation of India (FCI) warehouses during 2000–03, coupled with widespread hunger.

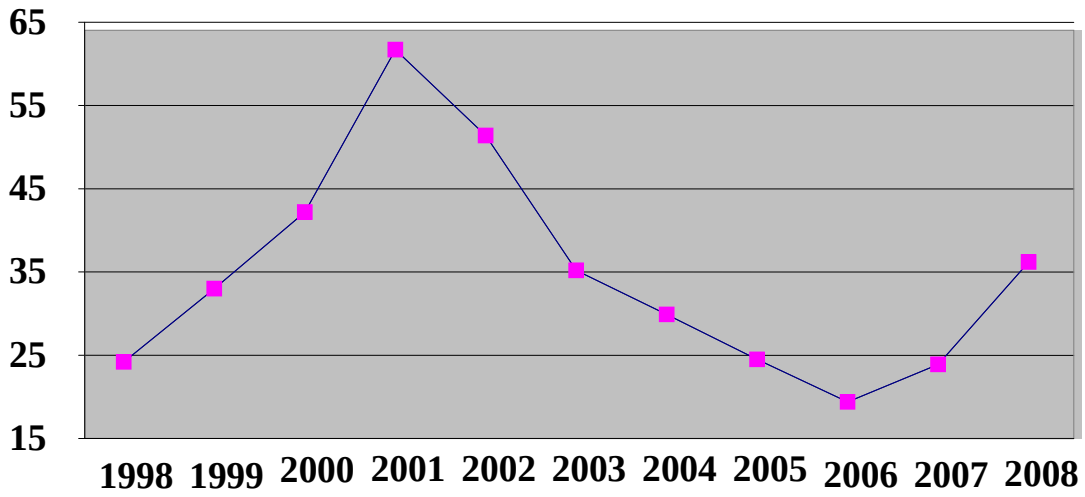
Figure 7: Average annual imports in Million Tonnes



Source: Based on *Economic Survey (2009–10).*

The falling availability and increase in government procurement reflects a contraction of effective demand,[15] as the poor are forced to spend a greater part of their incomes on transport, health and education. In other words, non-food items have become more 'essential' than food in a particular sense. This argument is supported by empirical evidence from various sample surveys, as between 1972–73 and 2004–05 the proportion of food in total consumer expenditure has fallen from 73 percent to 55 percent in rural areas and from 64 percent to 42 percent in urban areas (Ramachandran, 2008).

Figure 8: Stocks of foodgrains in government godowns in July in million tonnes



Source: Based on *Economic Survey,(2007–08).*

[15] This is despite the fact that the expenditure of the bottom three deciles increased by about ten percent during 1993–2005.

Because of a lack of growth in agriculture after the mid-1990s there has been a decline in employment and income and hence a fall in aggregate demand by the rural poor. Normally when there is a fall in per capita output and government stocks are depleted, net imports take place in order to maintain availability per head at an unchanged level; but precisely the opposite happened in India during 1999–2004. Despite falling per capita output, there were both rising net exports as well as huge additions to stocks year after year. This was a highly abnormal situation never seen before in independent India: it reflects the unprecedented magnitude of continuous demand-deflation of food grains, especially in the rural sector since 1996 (Sen, 2004).

4.2.1. Recent developments and imports[16]

When the GOI decided to open up wheat procurement for large companies in 2006 official procurement fell from a high annual level of 15–19 million tonnes in 2002–05 to just nine million tonnes in 2006. It had to resort to massive imports of 5.4 million tonnes in 2006 followed by 1.8 million tonnes in 2007, at a price higher than that paid to its farmers. After these difficulties the government became more careful and banned the export of wheat in February 2007, and the export of non-basmati varieties of rice in October 2007 to prevent domestic shortages. The bumper foodgrain harvest in 2007–08 and various direct and indirect restrictions on large-scale purchases by the private sector in 2008 helped the GOI procure an impressive 23 million tonnes of wheat, which also helped control its market price. However, the biggest factor preventing a sharp rise in food prices was the fact that fertiliser and diesel prices were not increased in response to the increase in international prices. It is worth mentioning that about half of the increase in global food prices is the result of the increase in prices of crude oil. By providing a subsidy on fertiliser and diesel, the country was able to ensure that the increase in global crude oil prices, which raised global food prices by 47 percent, did not affect food prices in India.

4.3 Global developments

The per capita annual production of cereals in the world increased from 271 kg during 1961–65 to 295 kg during 1966–70, which were the initial years of the 'green revolution'. The uptrend continued for about two decades and per capita cereal production had peaked by the mid-1980s at a level of 334 kg per person per year. The growth rate of cereal production decelerated to 1.09 percent after the mid-1980s, compared with 2.51 percent in 1961–85. The recent growth rate turned out to be lower than the growth rate in the population, even though the population growth rate was decreasing. The per capita production of cereals declined to less than 315 kg in the first eight years of the 21st century (Chand, 2008).

Although there was some improvement in per capita availability of cereals during the period from 2003 to 2007, this increase has not been available for use as food and feed, because of the diversion of food grain into the production of biofuel. When total production is netted out for the corn used for biofuel in the United States, then the per capita production falls to 307 kg, the lowest in any five-year period after 1966–70. This shows that the shortage of staple foods has been building up over several years and has become quite large in recent years.

The per capita consumption of cereals, meat, milk and eggs in India, China, the USA and as world averages is presented in Table 17.

[16] This section is based on Chand (2007a; 2008).

Table 17: Per capita consumption during 2004–06 (kg/year)

	India	China	US	World
All cereals	175.1	287.9	953	316
Meat	5.3	56.8	126.6	40.2
Milk	84.5	22.7	Na	97.8
Eggs	1.8	21.6	15.2	9.7

Source: Chand (2008).

It is pertinent to mention that consumption here indicates total use as food and feed, which thus captures the impact of dietary changes on demand for cereal as feed. The per capita consumption of cereals in the USA is 953 kg, which is three times the world average, 3.3 times the average in China and 5.4 times the average in India. The main factor behind such a high level of cereal consumption in the USA is that country's meat and egg consumption. An average American eats 127 kg of meat in a year, which is more than the quantity of meat consumed by 25 Indians.

4.4 Future scenario for India's food production

While in the short and medium term there might be a surplus of cereals in the country, primarily because of a lack of purchasing power, these prospects are likely to diminish in the years to come (Mittal, 2008; Chand, 2007b).

Demand projections in general are estimated on the basis of assumptions about base year demand, population, expenditure elasticity and economic growth. Assuming that GDP grows by 8 percent for the next 20 years, the total cereal demand projected for 2011 and 2026 is 188 million tonnes and 274 million tonnes, respectively. The supply of cereals is estimated to be 210 million tonnes in 2011, 242 million tonnes in 2021 and 260 million tonnes in 2026. Thus India may be running a surplus in the short run, but is likely to fall short of demand in the long run. This situation is even more alarming for edible oil, sugarcane and pulses. To meet future food requirements, the country will have to either increase agricultural production, or depend on imports. If India wishes to avoid large-scale imports, the policy focus needs to be on productivity enhancement in agriculture, through public investment in irrigation, and through the development of roads, power and technology.

Unfortunately the trend so far has been disappointing. After recording unprecedented growth of 4.7 percent a year during the period of Eighth Five Year Plan (1992–97), growth in the agriculture and allied sectors decelerated to 2.1 percent during the Ninth Five Year Plan (1997–2002). It further dipped to one percent during the Tenth Five Year Plan (2002–07), against targeted growth of 4 percent per annum.

India's low average wheat and rice yields compared with other major world producers suggest that there is significant scope for further boosting yields and output. Rice yields are among the lowest for major producers and wheat yields remain near the world (and US) average, despite the fact that a relatively high share – about 87 percent – of the Indian wheat area is irrigated. Although roughly 90 percent of the wheat area and 75 percent of the rice area are already planted with high-yield varieties (HYV)s, average wheat yields in major states remain about 25 percent lower than levels achieved in experimental stations, while rice yields are about 50 percent lower (Jha *et al*., 2007). Increasing the yields would, however, require new policies, discussed in section 5.1.1.

5. Analysis of Major Programmes and Policy Options

In the foregoing sections we have discussed some of the causes of hunger and its implications for the healthy development of body and mind. There are of course larger policy issues that aggravate the hunger situation in India. These and those already discussed are summarised in Figure 9.

Figure 9: Underlying causes of hunger in India

- Falling per capita crop, especially food production in the last ten years.
- Increasing share of surplus-endowed states and large farmers in food production, resulting in artificial surplus that is exported, thus further reducing availability of food grains.
- Increasing inequality, with only marginal increase in the per capita expenditure of the bottom 30 percent. From their meagre income the poor are forced to spend more on medical care, education, transport, fuel and light, thus reducing the share of their expenditure on food.
- Poor access of the bottom half of the population to expensive foods, such as pulses, vegetables, oil, fruit and meat products, which provide essential proteins, fats, and micronutrients. This leads to underdevelopment of the human body and mind, affecting the ability of individuals to work productively, think clearly and resist disease.
- Low status of women in Indian society, their early marriage, low weight at pregnancy and illiteracy, leading to low weight of newborns.
- Poor childcare practices, such as not immediately starting breastfeeding after birth, not exclusively breastfeeding for the first five months, irregular and insufficient complementary feeding afterwards, and lack of quick disposal of children's excreta.
- Poor supply of government services, such as immunisation, access to medical care, and lack of priority for primary health care in government programmes. These factors, combined with poor food availability in the family, unsafe drinking water and lack of sanitation lead to high child under-nutrition and permanent damage to children's physical and mental capabilities.
- Major food-related programmes, such as the PDS and ICDS, are plagued by corruption, leakages, errors in selection, procedural delays, poor allocation and little accountability. They also tend to discriminate against and exclude those who most need them, by social barriers of gender, age, caste and disability. In addition, there is state hostility to poor urban migrants, street and slum residents, dispersed hamlets and unorganised workers, such as hawkers.

The policy options, especially relating to existing programmes, are now discussed.

5.1 Agricultural production

The current agricultural scene in India has four features that distinguish it from the earlier 'green revolution' phase (1970–85). First, the policy approach to agriculture in the 1990s was to secure an increase in production through subsidies on inputs such as power, water and fertiliser, and by increasing the MSP rather than through building new capital assets in irrigation, power and rural infrastructure. According to the Planning Commission, budgetary subsidies in agriculture increased from around 3 percent of agricultural GDP in the late-1970s to about seven percent in the early

2000s. During the same period, public investment in agriculture declined from 3.4 percent of agricultural GDP to 1.9 percent (Bisaliah, 2007).

This has shifted the production base from low-cost regions to high-cost ones, causing an increase in the cost of production, regional imbalances, and an increase in the burden of storage and transport of food grains. The equity, efficiency and sustainability of the current approach are questionable. The subsidies do not improve income distribution nor the demand for labour (Saxena, 2004b). The boost in output from the subsidy-stimulated use of fertiliser, pesticides and water has the potential to damage aquifers and soils – an environmentally unsustainable approach that may partly explain the rising costs and slowing growth and productivity in agriculture, notably in Punjab and Haryana. Although private investment in agriculture has grown, this has often involved macroeconomic inefficiencies (such as private investment in diesel-generating sets instead of public investment in electricity supply). Public investment in agriculture has fallen dramatically since the 1980s and so has the share of agriculture in the total gross capital formation. Instead of promoting low-cost options that have a higher capital:output ratio, the present policies have resulted in excessive use of capital on farms, such as too many tubewells in water-scarce regions.

Second, the intensity of private capital is in fact increasing for all classes of farmers, but at a faster pace in the 'green revolution' areas and for larger farmers. Thus, fertilisers, pesticides and diesel accounted for a mere 14.9 percent of total inputs in 1970–71 but 55.1 percent in 1994–95. For large-scale farmers in commercialised regions the contribution of purchased inputs may now have become as high as 80 percent. But the proportion of output sold has increased at a much slower rate than the proportion of monetised inputs, including hired labour. The implication of this is a resource squeeze in agriculture. Whereas the need for resources to purchase these inputs has been increasing, the marketable surplus has been increasing at a slower rate to contribute to this, as the growth of non-farm employment has become very sluggish. It is not surprising that the repayment of loans is such a problem in Indian agriculture and has even led to suicides in some cases. A better strategy would be to concentrate on small and marginal farmers, and on eastern and rainfed areas where returns to both capital and labour are high. The need is also for better factor productivity in agriculture and for new technologies, which would be more labour intensive and would cut cash costs.

Whereas the use of capital has increased among small and marginal farmers, markets in eastern and central India continue to be imperfect. Therefore the poor farmers are forced to sell part of their product to pay their loans (mostly from informal sources) for purchased seeds, water and fertiliser, but they do not get a good price and market conditions benefit the trader and moneylender more than they benefit the producer.

Third, the proportion of total bank credit earmarked for agriculture has fallen from nearly 18 percent in the mid-1980s to ten percent in 2005–06. This decline has been much sharper in direct lending. A substantial part of agricultural loans since the 1990s has been in the form of indirect credit, that is, lending for various intermediary agencies and instruments like the Rural Electrification Corporation, the special bonds issued by the National Bank for Agriculture and Rural Development (NABARD) and deposits placed by banks in the Rural Infrastructure Development Fund (RIDF) in lieu of priority-sector lending. In the same period there has been a precipitate fall in small borrower accounts (credit limits of Rs 25,000 or below) from Rs 62.55 million to Rs 36.87 million or more pointedly, in terms of amount outstanding, from 25 percent to 5.4 percent. Small loans are mostly agricultural loans.

Undoubtedly, institutional credit has been scarce for the agricultural sector in both the 1990s and in the 2000s. Are banks reluctant to offer agricultural loans because their earning potential from them has been relatively low? A more obvious cause of the banks' poor lending to agriculture or to small borrowers is their professional reluctance to operate in rural areas. And this is a more daunting issue to be addressed. Given the option, the scheduled commercial banks will not operate in rural areas. Since March 1995, after the disbanding of branch licensing policy and the granting of freedom to bank boards, the number of rural branches has declined from 32,981 to 32,137; this means the closure of roughly 840 rural branches instead of an addition of at least 8,000 branches under normal circumstances.[17] This approach to rural banking has spawned a serious institutional vacuum in rural credit. It is no use goading banks to expand their rural and agricultural credit base without ensuring that there is an adequate spread of the institutional network for rural lending.

Last, groundwater, as opposed to surface and sub-soil (through shallow wells) water, has become the main source of irrigation. As a result, nearly 30 percent of the blocks in the country are presently classified as semi-critical, critical or overexploited (mostly in 'green revolution' areas), as groundwater use exceeds the rate of groundwater recharge. As there is no effective control over digging of tubewells in water-scarce regions, farmers are borrowing money from informal sources at high interest rates to dig tubewells, but many such borings fail, leading to indebtedness, and even suicide. Since sinking a bore well involves a heavy investment upfront, only the rich or the affluent farmer goes in for it, whereas the small farmer continues to depend on the shallow dug well that has been in existence for decades. Bore wells drain much larger quantities of water, usually from the same aquifers that feed the dug wells. So in a village the small farmer is adversely affected when richer farmers install bore wells fitted with electric motors. The affluent farmers owning bore wells and electric motors corner most of the benefit of electricity subsidy too. Ironically, they in turn sell their surplus water to the adjacent small farmers at commercial rates. The built-in biases of the green revolution strategy now stand exposed.

The impact of these four factors has been increasing landlessness, sharpened inequalities (both inter-state and inter-class), and stagnation in production. The index number of agricultural production rose by 4.4 percent annually during the 1980's, but dropped to 2.8 percent from 1990–91 to 1996–97, and the growth rate further plummeted to just 0.5 percent in the next ten years. The trend for food grains is similar. During the 11-year period from 1996 to 2007, foodgrain production increased only by nine percent, from 199 to 217 million tonnes, or much less than one percent a year, as against an annual rate of growth of 3.5 percent achieved during the 1980s. The availability of cereals declined from a peak of 468 g per capita per day in 1990–91 to 412 g per capita per day in 2005–06, indicating a decline of 13 percent during this period. The availability of pulses declined from 42 g per capita per day (72 g in 1956–57) to 33 g per capita per day during the same period.

Moreover, poverty reduction has become disconnected from agricultural growth because, in contrast to substantial agricultural growth in the 1980s, there was little growth between 1997 and 2006. This has also resulted in a slower increase in real agricultural wages, with the poorer states showing no increase or even a decline in wages. In addition, the casualisation of a mass of rural workers without any safety

[17] See www.solidnet.org/cgi-bin/agent?parties/0370=india,_communist_party_of_india/917india28jun04.doc.

nets, the feminisation of agricultural labour accompanied by low wages, and the persistence of child labour are all worrying trends.

The stagnation is despite the soaring annual cost of food subsidies, which rose from Rs 61 billion in 1996–97 to Rs 120 billion in 2000–01 to Rs 310 billion in 2007–08. If subsidies on free rural power and fertilisers are added the figure may well reach a staggering Rs 1000 billion, or about Rs 70 per day per poor rural family.

5.1.1 What needs to be done?

It is thus obvious that Indian agriculture is in a serious crisis, and needs several innovative policy interventions. These are discussed below.

The most important intervention needed is more investment in irrigation, power, and roads in poorer regions. It is essential to realise the potential for production surpluses in central and eastern India, where most poor people live. Many states in this region do not benefit from the MSP for rice, as the FCI does not buy paddy from the farmers in these states, but buys it from the millers.[18] A basic focus of policy should, therefore, be to ensure effective price support in states and areas with future production potential. To achieve the growth target of 4.5 percent in agriculture, the investment should grow at an annual rate of about 12 percent, as compared to the present level of about five percent.

Since the level of public investment is an important determinant of private investment through the complementary/inducement effect, the choice of public sector investment portfolio is crucial. Public investment has to be considered as a policy instrument for reducing regional agricultural development disparities and for realising the full potential of small and marginal farmers. Any demand-induced diversification would place new demands on market infrastructure (like more investment in cold storage, rural roads, communication, and the marketing network) and institutions. In fact, price-induced crop diversification is not sustainable in the absence of back-up from non-price factors such as technology, irrigation and rural infrastructure.

Water is a critical input for achieving higher agricultural growth and ensuring greater food security. Only about 40 percent of the cultivated area in India is currently irrigated. Greater emphasis should be placed on shifting the balance in favour of surface irrigation and on the more effective use of existing irrigation systems.

Many states, however, lack the policy, regulatory and institutional framework for the efficient, sustainable and equitable allocation and use of water, or for articulating the environmental costs of inefficient use. Often they do not allocate sufficient public funds for the operation and maintenance of canals. This leads to the rapid deterioration of irrigation canals and reduces the availability of water to farmers. Limited cost recovery also limits funds for operations and maintenance and undercuts farmer incentives to use water more efficiently, leading to waterlogging and salinity problems in some areas. Some states have adopted wide-scale participatory irrigation management to improve the management and sustainability of surface irrigation systems. These need to be replicated on a larger scale.

[18] The FCI buys paddy from farmers only in Punjab, Haryana and Andhra Pradesh. In the past few years, some states, such as Chhattisgarh and UP have started buying paddy directly from the farmers, providing them with much needed price support.

The giving of free or highly subsidised power to farmers by some states encourages the excessive use of ground water. This has led to an increase in overexploited areas in the country and large fiscal costs to state governments. This must be checked.

The bans or restrictions on land leasing limit the access to land by poor and landless rural households and they drive tenancy underground. They also limit the productivity of land use. However, reverse tenancy from the poor to the rich should not be legalised.

Regulated markets were supposed to improve efficiency, but many official market committees, like those in UP, Punjab, and Haryana, make it illegal for farmers to sell through alternative channels, such as directly to millers. The markets have thus emerged as taxing mechanisms, rather than helping farmers get the best price. This needs to be changed and farmers should be allowed to develop direct contact with large (and even corporate) buyers, with a complete ban on exports.

The present extraction rates for both wheat and rice are about 10 to 30 percent below the international standards because of the reservation of agro-processing units for the small-scale sector, which uses inefficient technologies. Therefore, licensing controls on flour mills and other food processing industries should be removed. Food processing units, especially for rapeseed and groundnuts, should be de-reserved from the Small Scale Industries list. On the whole, laws and controls have repressed private foodgrain marketing, undercutting its potential contribution to long-term food security.

Finally, more attention should be paid to rainfed areas, especially the eastern plains, where land is fertile and groundwater is still unexploited. These regions need a better infrastructure of markets, roads and power.

How is poverty reduction correlated with agricultural production? Early pessimism about the green revolution (Griffin, 1974) was soon replaced by an agrarian optimism that connected poverty reduction with agricultural growth. Ahluwalia (1978) observed an inverse relationship between poverty and agricultural performance for rural India as a whole. According to Lipton (1989), this was because the new modern varieties of grain became smallholder-friendly: they yielded more even with low inputs, were more pest-proof, and, unlike hybrids, did not need the annual replenishment of seeds. They also raised labour use per acre-year, thus benefiting the poor. Therefore one needs to emphasise the fundamental role of the agricultural sector in supporting rural livelihoods, generating employment and providing food security.

However, there may be some situations where agriculture could harm some people (Bardhan, 1985), and therefore one must take precautions against the following developments:

- adoption of labour-displacing machinery;
- eviction of small tenants by large landlords;
- driving some small farmers, with limited access to resources and credit, out of cultivation thus crowding the agricultural labour market;
- a similar crowding of the agricultural labour market by displaced village artisans, as the demand of the new rural rich shifts away from local handicrafts and services to mass-produced urban consumer goods and services;
- the use of pump sets, enabling richer farmers to appropriate communal groundwater, resulting in a possible drop in water tables and making the

traditional shallow well technology even less effective than before for poorer farmers without pump sets;

- increased political bargaining power of the rural rich and surplus regions, resulting in higher administered prices of food grains (of which the rural poor are net buyers), while typically wages lag behind the price rises (and as monetization of wage payments increases with agricultural progress).

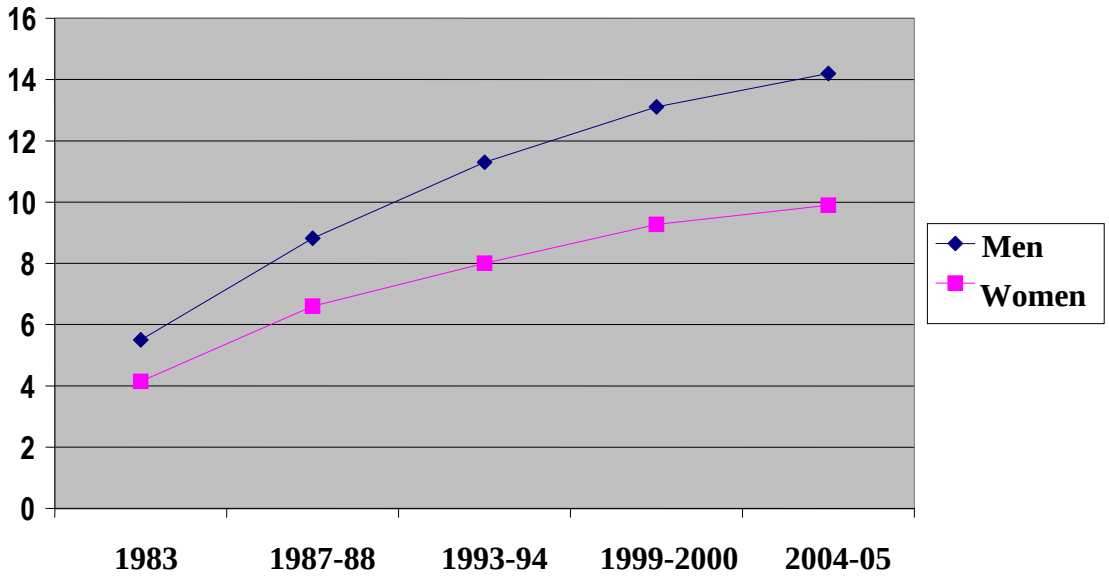
5.2 Agricultural labour and wage employment programmes

Household food security is contingent on many factors – the ability to grow enough for self-sufficiency among farming households, and/or having enough income to buy food. Access to food, then, depends on the prices at which food can be bought or at which the cost of cultivation is covered to yield a decent return for others. The problems of small farmers have been discussed above. Here we touch upon the plight of agricultural labourers.

With falling agricultural growth rates and increasing capital intensity, the growth rate of employment has lagged (Lanjouw and Rinku, 2008). Unemployment among agricultural labour households has sharply increased from 9.5 percent in 1993–94 to 15.3 percent in 2004–05. What is of special significance is the predominance of women among rural workers and their larger numbers as subsidiary and casual workers.

As per the NSS data, the proportion of households without any access to land among total rural households has increased from 25.1 percent in 1973–74 to 38.7 percent in 1993–94 to 40.9 percent in 1999–2000 and further to 43.1 percent in 2004–05. Because of the increase in supply, the rate of growth of adult casual labourers' real wages has seen a declining trend, as shown in Figure 10.

Figure 10: Average daily earnings of workers agricultural operations (Rs) at 1986-87



Source: Jha (2007).

At the same time, casual labour and self-employment in the non-farm sector reveals greater involvement by disadvantaged groups in 2004 than in the preceding rounds. The poor are thus *pushed* into low-return casual non-farm activities by a lack of

opportunities in the agricultural sector, rather than being *pulled* by high returns offered by the non-farm sector. This has resulted in a decline in the wages of adult casual labourers in the urban sector during 1999–2000 to 2004–05 by 0.51 percent annually for men and by 0.74 percent for women (Sundaram, 2007).

As it may take time for agriculture to create more jobs at higher wages for the poor, the government needs to step in with wage employment programmes in districts where wages are depressed. However, allocations under wage employment schemes have been grossly inadequate. The legal guarantee of 100 days wages under the National Rural Employment Guarantee Act (NREGA), according to the Comptroller and Auditor General of India (CAG), has been fulfilled in only three percent of cases. West Bengal's poor implementation of this project left at least Rs 6.50 billion unspent.[19] A great number of people are not given job cards, those who have jobs are given (on an average) 12–14 days work. In backward villages, a government survey shows that only 38 percent of people got work under the NREGA.

According to a recent press note by the Ministry of Programme Implementation and Statistics on 'Employment and Unemployment Situation in India: 2005–06', among people aged 15 years and above in the rural areas, only five percent found employment on government projects while seven percent sought such work but did not get it. In addition to increased outlays, the scheme of public works to reduce unemployment should have a food component, now that the GOI has a comfortable stock of foodgrains.

The NREGA, which in principle gives every person who is willing to work the statutory right to 100 days of guaranteed wage labour at minimum wages per family, is legally open to all destitute people. But, in practice, a study by Mander (2008) found that it remains barred to most. Old people report that they are discouraged from applying for work, with remarks such as 'you are too old and will fall sick because of the heavy work involved'. Instead of identifying less physically demanding work like standing guard at the sites, taking care of children, filling baskets with stones and soil, and planting and irrigating saplings, they are given the most back-breaking work, and are therefore themselves eventually compelled to opt out of it. Many older widows are turned away openly: 'When I go to ask for work, they say that this is your age to relax, but if I do not work, how will I live?' Others are again intentionally given work that they cannot manage, so they leave 'voluntarily'. We suggest the following:

1. Ensure that single women, aged and disabled people in practice enjoy at least equal legal claim to employment in NREGA works as do households 'led' by able-bodied men, and that their work guarantee be extended to 150 days through an amendment in the Act.
2. NREGA guidelines and handbooks in each state should carefully identify specific tasks in public works which can be undertaken by disabled adults and aged people; such people should be encouraged to undertake such tasks when they apply for work.
3. Provide separate NREGA job cards for all 'single' women, regardless of whether they live alone, with dependants, or in their natal or husband's home. Likewise for aged, infirm and disabled people who may or may not live with 'able-bodied' caregivers.

As already discussed, there has been no real increase in per capita food expenditure for the poor, particularly after 1987–88. In fact, the food share has fallen at all levels

[19] *Anandabazar Patrika*, 3 February 2008; and *Statesman*, 11 February 2008.

of per capita expenditure, including at the poverty line. Both Dharm Narain (1973) and Saith (1981) have found a very strong positive association between rural poverty and the consumer price index for agricultural labourers. Therefore the poor must not only get more employment opportunities at higher wages but also cheap subsidised food grains,[20] as discussed below.

5.3 The Public Distribution System (PDS)

With a network of more than 0.4 million Fair Price Shops (FPS) claiming annually to distribute commodities worth more than Rs 150 billion to about 160 million families, the PDS in India is perhaps the largest distribution network of its type in the world. FPS distribute a total of 35 kg of wheat and rice to about 65 million BPL families at Rs 4.2 per kg for wheat and Rs 5.6 for rice (the present market rate is about double the PDS price). Another 25 million poorest families (referred to as Antoyodaya Anna Yojana (AAY) families) get 35 kg of food grains at a highly subsidised rate of Rs 2 per kg. for wheat and Rs 3 per kg for rice. In addition, there are welfare programmes such as the hot, cooked Mid Day Meal (MDM) scheme for schoolchildren, and Supplementary Nutrition Programme (SNP) for pre-school children.

The overall distribution under PDS and welfare schemes has shown considerable improvement in recent years, at least on paper. The offtake[21] of BPL/AAY foodgrains as the percentage of allocation has gradually improved since 2001–02 from 59 percent to 78 percent in 2007–08.

Table 19: Production, procurement and offtake of food grains (in million tonnes)

	1997-98	**2001-02**	**2002-03**	**2003-04**	**2004–05**	**2005–06**	**2006–07**	**2007-08**
Food subsidy in Rs billion	79	176	240	270	290	235	242	313
Production of food grains	192.3	212.9	174.8	213.2	198.4	208.6	217.3	230.7
Procurement of food grains	23.6	42.6	40.3	34.5	41.4	42.2	34.3	37.4
Distribution through FPS	17.0	13.8	20.1	24.2	29.7	31.4	31.6	33.5
Disposal though welfare schemes	2.1	8.9	11.4	13.5	10.6	9.7	5.1	3.9
Open market sale	0.06	5.6	5.66	9.66	0.25	1.1	.01	.02
Subsidised exports	0	4.7	12.5	10.3	1.0			

Source: Based on several issues of *Monthly Food Bulletin,*. New Delhi: Ministry of Food and Consumer Protection.

[20] Some marginal and small farmers may also be 'net purchasers' of cereals because either they do not produce enough to meet their needs, or they are forced to sell cereals soon after harvesting to meet other expenditures and buy back cereals for their own consumption during the lean season.

[21] GOI allocates a fixed quantity of foodgrains every year to each state based on the number of poor in that state. Often the states are not able to lift the full quantity of allocated grain due to administrative problems. However, offtake does not mean that food has actually been delivered to the poor. There are leakages after its lifting from GOI godowns.

However, not all states take their entire quota, Bihar and Orissa being the worst offenders, taking less than half their allocation. In 2006–07, they lifted only 22 and 58 percent of the food grains allotted to the BPL category. It is significant that the allocations of the poorer states such as UP, Bihar and Assam have more than doubled since 1997, yet, because of these states' failure to take their full quota and of even poorer delivery by the FPS to BPL families, the scheme has not made any impact on nutrition levels in these states.

There are significant inclusion and exclusion errors regarding possession of BPL ration cards, as shown in Table 20.

Table 20: Possession of ration cards by type, and socio-economic status, 2004–05

	Percentage of households possessing a ration card	**Percentage of households possessing a BPL card**	**Percentage of households possessing an APL card**	**Percentage of households possessing an AAY card**
Poorest	77.3	44.2	28.2	4.9
Q2	81.6	40.5	38.4	2.7
Q3	83.3	40.0	41.6	1.8
Q4	84.9	30.5	52.7	1.7
Richest	87.5	16.8	70.1	0.6
Rural	84.8	38.7	43.2	2.9
Urban	78.8	20.8	57.0	1.0

Source: World Bank (2007).

The table clearly shows that almost half of all poor people are left out of the appropriate category of ration card.

All is not well with the PDS in India. The Planning Commission (2008) has concluded that 'PDS seems to have failed in serving the objective of making foodgrains available to the poor. If it had, the consumption levels of cereals should not have fallen on average – as it has consistently over the last two decades'.

The problems associated with the PDS are summarised below.

1. Large errors of exclusion of BPL families and inclusion of APL families.
2. Prevalence of ghost BPL/AAY cards in the custody of FPS dealers.
3. Diversion of subsidised grains to unintended beneficiaries.
4. Some APL households not taking their ration quota and thus a part of the entitlement of these households leaking out of the PDS supply chain.
5. The present procedure for selection of BPL beneficiaries is opaque, bureaucratic and does not involve *gram sabhas* (council of all voters in the village). The basis on which the cap on the maximum number of entitled beneficiaries per village is fixed is neither clear nor well defined.
6. Some states, such as Bihar, Jharkhand and UP, are not being given the APL quota on the grounds that they did not take it in the past when the market price was low. This policy favours the southern states, which have been subsidising the APL quota out of state funds, and punishes the poorer states.
7. The selection procedure of FPS dealers is not transparent, and is often based on patronage or bribes.
8. Inadequate storage capacity with the FCI in some districts.
9. The poor financial condition of many State Food Corporations, which are supposed to transport grain from the FCI depot to the FPS.

10. Allocations from the GOI are valid only for a month, and if a state government is not able to take them within that time, its quota lapses.
11. The poor do not have cash to buy 35 kg at a time, and often they are not permitted to buy in instalments.
12. The low quality of food grains.
13. Weak monitoring, lack of transparency and inadequate accountability of officials implementing the scheme.
14. The price charged exceeds the official price.
15. The shop does not open for more than two or three days a month, and card holders are not allowed to take their quota from previous months, or to take it in instalments during a month.
16. Ration cards are mortgaged to ration shop owners.
17. There is no grievance redressal mechanism.
18. Many homeless and poor people living in unauthorised colonies in urban areas have been denied ration cards, and are thus unable to access the PDS, despite being Indian citizens.
19. Seasonal and temporary migrants face problems in receiving their entitlements during the period they are away from their villages.

5.3.1 Policy and procedural reforms

The following policy and procedural reforms may help improve both the uptake of PDS rations and their availability to the poor.

1. Improve the procedure for selection of BPL families. This must be changed in favour of a more transparent and participative procedure. The number of BPL cards should be fixed for each district, based on the percentage of the SC and ST population and the inverse of agricultural production.

2. Separate cards for single women. Single adult women who live with or without dependants, as well as old people who live with relatives by blood or marriage under the same roof, should be treated for the purpose of all food schemes as separate families. Specifically this means that single adult women and old people will be eligible for separate ration cards, even if they live under the same roof and share the same kitchen as others. This will assure them of greater dignity and autonomy. The same would of course apply to bonded workers, who may stay with their employers.

3. Fix the APL quota. The norm for the release of the APL quota should be transparent and realistic, and should be based on population and poverty. Some states, such as Bihar, Jharkhand and UP are not being given the APL quota on the grounds that they did not take it in the past when the market price was low. This policy favours the southern states which have been subsidising the APL quota out of state funds, and punishes the poorer states.

4. Abolish the APL quota. One of the main reasons for the black market in the APL quota is the fact that the GOI does not release the full quota based on the number of APL cards, which gives the dealer the leeway to refuse supplies on the grounds that the limited quota has already been distributed. A better option is to increase the number of BPL cards from 78 to 120 million, and abolish the APL category. Including AAY, this policy would cover almost 70 to 75 percent of the population. If the entitlement is reduced to 25 kg per card, the total requirement of foodgrains would be 14.5x12x25=43.5 million tonnes, which is the present level of annual procurement, and hence feasible. Small amounts can always be imported, whereas there should be a

complete ban on exports, except basmati rice. In its place, private traders should be allowed to import broken rice to stabilise the market price of rice.

5. Eliminate ghost ration cards. All card holders must be photographed, and their details along with their photographs should be in the public domain. This will make it easy for the civil society or consumers to check the list.

6. There should only be one annual order from a district indicating each dealer's quota. This way the dealer does not have to wait every month for the district to issue an allotment order. The district office should also issue just one order at the beginning of the year in which the quota of all the dealers can be publicised.

7. Make it obligatory for dealers to sell non-cereal items. Dealers should be asked to improve their viability by selling items of mass consumption other than wheat and rice, as in Gujarat.

8. Selection of FPS dealer. In many states the selection needs approval by the Food Minister or a committee of MLAs (Member, Legislative Assembly) and thus the process is highly subjective and opaque. The FPS dealership should be allotted to people who are already running a viable shop in the area. This will ensure that the shop remains open on all working days.

9. Reduce control of inspectors over shops. Whereas the government should set up and strengthen transparent arrangements for a social audit, it may be desirable to remove some of the irritants, such as not allowing distribution to take place unless the arrival of the stock has been verified by an inspector. The inspectors should, on the other hand, meet the consumers regularly and collect Report Cards from them regarding their degree of consumer satisfaction.

10. Take photographs of the stock in the shop. Inspectors supervising supplies should be given cheap digital cameras so that they can show the stocks at the FPS along with that day’s newspaper and consumers, and send it to their superiors with a copy to the dealer. This would show that the grain had actually reached the shop, which often does not happen in the rural areas.

11. Oversight by citizens. There should be a quarterly meeting of the dealer with all consumers, which should be attended by senior staff.

12. Develop a grievance redressal mechanism. State governments should provide a toll-free number, where complaints can be registered online. The entire operation should be outsourced and web-enabled, so that anyone can see how many complaints have come from each shop, and how many have been satisfactorily dealt with.

13. Launch a drive to cover the poorest. A large number of homeless and poor people living in unauthorised colonies in urban areas have been denied ration cards. A drive should be launched in collaboration with civil society to provide them in a timebound manner with ration cards, preferably AAY cards.

14. Provide a cash subsidy. The economic price of food grains in FCI warehouses (which is the cost to government after adding storage and transport) is between Rs 9 and Rs 11 per kg. It is distributed to the consumers at various prices ranging from Rs 2 to Rs 6.50 per kg. Thus the government spends about Rs 2 to Rs 8 per kg as a subsidy in the PDS. Since the entitlement is 35 kg per month, there is a subsidy of Rs 70 to Rs 300 per family per month. In certain urban areas the government should try to give the subsidy amount as cash to consumers and ask them to buy grain in the

open market. The female head of the family should be asked to open a bank account and the amount should be centrally transferred from the bank to her without involving any intermediary or bureaucracy. The results of this pilot experiment should be carefully analysed before extending it.

15. Use e-governance. Banking and information technologies have advanced rapidly and should enable governments to provide transparency and speed in all applications without extra expenditure. In addition, computerisation can help modernise the PDS. A number of states are already implementing the PDS in innovative ways, and improved performance can be seen in some cases. Although the introduction of modern tools such as smart cards may not be a panacea for all evil, they can solve many problems, particularly that of pilfering and spurious beneficiaries.

5.4 Fighting child malnutrition

In 1993 the country evolved National Nutrition Goals for 2000. These included a reduction by one-half of severe and moderate malnutrition among young children; reducing the incidence of low birth weight below 10 percent; eliminating blindness caused by vitamin A deficiency; reducing IDA in pregnant women to 25 percent; reducing iodine deficiency disorders to 10 percent; producing 250 million tonnes of food grains; and improving household food security through poverty alleviation programmes. However, these goals were not well disseminated, with the result that failure to achieve them did not attract criticism either in the legislatures or in the press.

While there have been some real success stories (e.g. in Tamil Nadu), in most cases there is sufficient evidence to show that the GOI's main early child development intervention, the ICDS programme, has not succeeded in making a significant dent in reducing child malnutrition. Tamil Nadu, for example, spends Rs 732 on every malnourished child annually, and West Bengal only Rs 36, which together with Rajasthan and Madhya Pradesh account for half the malnourished children in 12 major states.

The ICDS, the main outlet for public spending on child nutrition, has been in existence since 1975. It operates through centres in villages, called *anganwadi*, where local workers provide nutrition and health services. While the government provides salaries for the *anganwadi* staff, state governments are responsible for procuring food for the SNP. However, since 2005, as a result of a Supreme Court direction, the GOI meets half the cost of the SNP.

Despite a three-fold increase in the GOI's budget and the contention of the Ministry of Women and Child Development that there are 1.5 ICDS centres per village now, according to the 61st round of the NSS carried out in 2005, the ICDS is reaching only 12.5 percent of children in the age group six months to six years. As each centre is likely to be located in the richer part of the village, it may be unable to reach vulnerable children in poorer households and lower castes and those living in remote areas. The programme targets children mostly after the age of three, when malnutrition has already set in. It does not focus on the critical age group of children under three years, the age window during which health and nutrition interventions can have the most effect. Finally, ICDS faces substantial operational challenges, such as lack of monitoring.

The focus of ICDS should be health and nutrition education, encouraging women to breastfeed exclusively for six months and after that to add semi-solid family food four

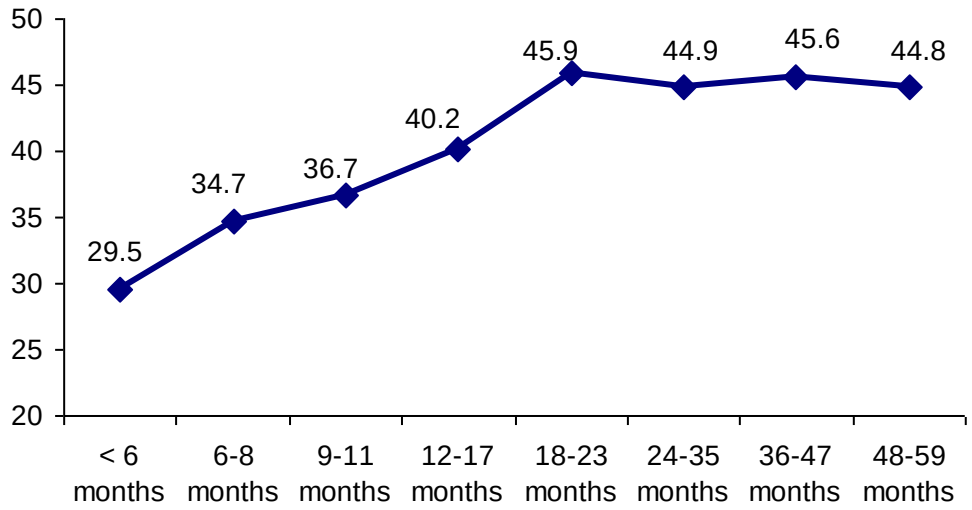
to six times a day in appropriate quantities for the infant, which alone can improve the child's nutrition levels. The ICDS should be made a true health, nutrition and development programme and not limited to a food dole programme. For nutrition to improve, proper breastfeeding and complementary feeding must be ensured, together with complete immunisation and the prompt management of any illness.

We propose the following measures to improve the ICDS.

1. Shift the focus to the under-twos. There should be increased spending on infant and young child nutrition during the first 24 months, when malnutrition is frequent and disturbs the very foundation of life and development. The percentage of underweight children (moderate and severe) in 2005–06 by age is shown in Figure 11**,** clearly demonstrating that malnutrition starts to set in quite fast among children aged six to 12 months, and that adequate precautions need to be taken at that age, otherwise malnutrition tends to become irreversible.

As already stated (see Table 14), only 46 percent of babies under the age of six months are exclusively breastfed. Each centre should be given a target to increase this to 90–100 per cent, and this should be monitored by independent sources.

Figure 11: Percentage of underweight children by age



2. Severe malnutrition. rehabilitation facilities like the Nutrition Rehabilitation Centres should be available at the primary health centre (PHC) level in each district for children suffering from Grade 3 or 4 malnutrition, and their mothers. ICDS workers should be responsible for identifying such children and referring them to rehabilitation facilities.

3. Minimum infrastructure. Each centre should have the minimum infrastructure and equipment required for effective delivery of ICDS services. A checklist of minimum facilities including weighing scales, storage arrangements, drinking water, cooking utensils, medicine kits, child-friendly toilets, a kitchen shed, and toys should be drawn up.

4. Cooked food. For children aged three to six, the SNP should consist of two hot cooked meals (breakfast and lunch) prepared at the *anganwadi*, based on local foods and with some variation in the menu on different days of the week. ICDS should learn from the success of the MDM programme, which runs fairly well even in states not known for efficiency, whereas the supply of packaged food in the ICDS programme, even in efficient states, is not popular with the children, besides leading to large-scale corruption in the procurement of packaged food.

5. Take-home rations. For children below the age of three, nutritious and carefully designed locally procured and prepared take-home rations (THR) should be recommended, but there could be centre-specific variations. The budget for weaning foods should be suitably enhanced.

6. Nutrition counselling. Supplementary nutrition should always be combined with extensive nutrition counselling, nutrition and health education, and home-based interventions (such as boiling water before drinking) for both growth and development, particularly for children under three.

7. Local involvement. Schemes will only succeed only when the *panchayats* and other community groups have sufficient involvement and control over the programme, including the selection of workers. In some states, the ICDS worker is appointed by a committee headed by the local MLA. This must change, and powers be given to the *gram sabha*.

8. Grading *angandwadi* centres. The GOI should introduce accreditation of *anganwadi* centres based on well defined and transparent criteria, using a consultative process by involving *panchayats*, mothers' committees and community groups. Some experiments have been done in Himachal Pradesh and Orissa which recognise and reward good performance.

9. Adolescent girls. The programme components need to be expanded and sharply defined. First and foremost, there should be universal screening and weighing of adolescent girls. After screening, there is a need to evaluate them in categories of 10–15 years, 16–19 years and pregnant girls. Then they should be weighed regularly and given appropriate nutritious food containing all the desired micronutrients and iron. A similar initiative is needed for all women.

10. Special category of migrant children. The children of migrant workers should be admitted and permitted to access all the facilities and services in the ICDS, regardless of their place of origin, with no paperwork required by their parents or guardians. Data should be disaggregated at the ICDS level for enrolment and actual coverage, to reflect the numbers and proportion of disabled children and of children from vulnerable local SC and ST minority communities. Poor coverage should be penalised.

11. Expanding the programme. State governments should be directed to fully cover urban slums within two years. In urban areas, the ICDS should develop prefabricated structures, to enable it to function in unauthorised slum settlements, or construction and brick kiln sites.In rural areas, care should be taken to prioritise location of ICDS centres within one year in all PTG settlements and marginalised SC settlements, without any minimum ceiling on the number of children they contain. The same should be done for all other hamlets with more than 50 percent SCs, STs or minority populations within a maximum of two years. In all these centres the ICDS staff should be local to the relevant communities, and two hot meals should be served instead of

one to children aged three to six, with double weaning foods given to children under three. ICDS centres should extend their nutrition and health services, which at present cater to expectant and lactating mothers, also to all categories of single women, recognising them to be intensely nutritionally vulnerable.

12. Learn from international experience. Thailand has been one of the most outstanding success stories of reducing child malnutrition in the period from 1980 to 1988, during which the child malnutrition (underweight) rate was effectively reduced from 50 percent to 25 percent. This was achieved through a mix of interventions, including intensive growth monitoring and nutrition education, strong supplementary feeding provision, high rates of coverage ensured by having high human resource intensity, iron and vitamin supplements and salt iodisation, along with primary health care. The programme used community volunteers on a huge scale (one per 20 children) and involved local people, to instil self-reliance and communicate effectively with target groups. Communities were involved in needs assessment, planning, programme implementation, beneficiary selection, and seeking local financial contributions, but central government control was kept over resource allocation, to ensure a coherent national programme. This has significance for nutrition programmes in India as the levels of per capita GDP, proportion of women in the agricultural workforce and child malnutrition rates around 1980 in Thailand were similar to those found in India in 2008.

It is absolutely crucial that the multidimensional nature of malnutrition be recognised and reflected in ICDS implementation: food intake is only one determinant of child nutritional status. It is, however, necessary, as it attracts children to other components of the programme. Therefore, in addition to supplementary feeding, state resources should also be redirected towards improving the delivery of other ICDS services. Supplementary feeding should be expanded and used strategically, i e, as an incentive for poor and malnourished children and their mothers, so that they receive health and nutrition education interventions.

5.5: The Mid Day Meal Scheme (MDM)

The MDM provides a free cooked meal to every child in classes I to V of government, government-aided and local-body schools. This is a primarily centrally assisted scheme with the state governments partially contributing towards the cooking costs.

Under the MDM launched by the central government in 1995, the GOI provided only free food grains, while the cooking costs were entirely borne by state governments. It was seen, however, that, many state governments administrations resorted to distributing food grains, rather than providing cooked mid day meals because they were unable to provide adequate funding to meet the cooking costs. Under orders from the Supreme Court (see section 6) the scheme was revised in September 2004 to provide a cooked mid day meal with 300 calories and 8–12 grams of protein to all children studying in classes I–V in government and aided schools. Some states have extended the scheme to cover children in the upper primary schools.

The scheme is generally considered to be a great success, although there are problems. In 2005–2006, only 76.8 percent of the grain allocated for the MDM scheme was actually taken by state governments. Since the allocations are based on estimates of enrolments and attendance, this means either that not all institutions or children were covered under the scheme or that the quality of the mid-day meal was compromised in the sense that an insufficient quantity of food was given to the children or the meal was not provided on all working days.

A clear order was passed by the Supreme Court on 20 April 2004, stating that preference must be given to SCs and STs in the appointment of cooks and helpers. However, only about half of the appointments are from that category.

The CAG[22] has recently audited the scheme and found that many states resort to over-reporting the enrolment while projecting the requirement of funds. There is no system of cross-checking the enrolment data furnished by state governments. In most states the children were not administered micronutrient supplements or de-worming medicines. The provisions for programme evaluation and regular monitoring and inspections in the scheme design were not effectively followed, nor were the results analysed for review of errors and introduction of changes on the basis of lessons learned. State Governments failed to put in place an effective system to ensure that teachers are not assigned responsibilities that would interfere with their teaching activities. Many instances of the teachers spending considerable teaching time in supervising the cooking and serving of meals were noticed, resulting in a loss of teaching hours.

The CAG recommended that the Ministry needs to establish a system to ascertain the improvement in children's nutritional levels. The Ministry should coordinate with state governments and ensure maintenance of health cards in all schools to monitor children's health status.

The Supreme Court Commissioners made the following recommendations in their Seventh Report[23] submitted in 2008.

- Currently the mid day meal is provided only to children who are attending school, whereas the most vulnerable children are those of school age who are working as child labour, or are street children, etc. The MDM should be expanded to cover all children of school age, irrespective of whether they are enrolled in school. The location of the meal served can continue to be the school; this might further encourage those out of school to enrol.
- The provision for cooking costs under the MDM should be increased to Rs 3 per child per day (not including foodgrain costs) from the current Rs 2 per child per day in order to be able to provide a nutritious and filling meal. Further, this norm should be inflation-linked, in the sense that it is constantly reviewed based on price indices.
- Mid day meals should be linked with nutrition education and related educational activities. State governments should be encouraged to adapt their textbooks for this purpose, as the NCERT (National Council for Educational Research and Training) has already done for some textbooks. Nutritious items such as eggs and green leafy vegetables should be provided regularly.
- Proper infrastructure for mid-day meals should be mandatory, including cooking sheds, storage space, drinking water, ventilation and utensils.
- Serious action should be taken in the event of any form of social discrimination over mid day meals, such as discrimination against Dalit (formerly 'untouchable') children or Dalit cooks.
- Priority should be given to disadvantaged communities (especially Dalits and Adivasis – indigenous tribal people) in the appointment of cooks and helpers.

[22] Performance Audit on National Programme for Nutritional Support to Primary Education (Midday Meal Scheme), Report no. PA 13 of 2008, available at cag.gov.in.

[23] See. http://www.sccommissioners.org/.

All cooks and helpers should be paid no less than the statutory minimum wage.

- Community participation in the monitoring of mid-day meals should be strengthened, particularly to prevent corruption and ensure quality.
- Mid day meals should be integrated with school health services, including immunisation, de-worming, growth monitoring, health check-ups and micronutrient supplementation.

The orders of the Supreme Court are awaited.

5.6 Tribals and hunger

As pointed out in various sections of this paper, tribal groups are the worst sufferers from malnutrition and hunger. They live in agriculturally depressed areas, remote from roads, where the reach of administration and government programmes is weakest.

A civil society organisation (CEFS, 2008) covered a sample of 1000 randomly selected tribal households from 40 sample villages in Rajasthan and Jharkhand and found that 25.2 percent of them reported not having two square meals each day in the week before the survey. Of the surveyed tribal households 24.1 percent did not have two square meals each day in the month before the survey and around 99 percent had not been able to manage two square meals a day at some point in time (at varied levels) during the previous year.

From a policy perspective, it is important to understand that tribal communities are vulnerable not only because they are poor, assetless and illiterate compared with the general population; often their distinct vulnerability arises from their inability to negotiate and cope with the consequences of their forced integration into the mainstream economic, social, cultural and political system, from which they were historically protected as a result of their relative isolation. Post-independence, the requirements of planned development brought with them the spectre of dams, mines, industries and roads on tribal lands. With these came the concomitant processes of displacement, both literal and metaphorical. As tribal institutions and practices were forced into uneasy existence with or gave way to market or formal state institutions (most significantly in the legal sphere), tribal peoples found themselves at a profound disadvantage with respect to the influx of better-equipped outsiders into tribal areas. The repercussions for the already fragile socio-economic livelihood base of the tribals were devastating – ranging from loss of livelihoods, and land alienation on a vast scale to hereditary bondage (Saxena and Farrington, 2003).

As tribal people in India perilously, sometimes hopelessly, grapple with these tragic consequences, a small clutch of official programmes has done little to assist the precipitous pauperisation, exploitation and disintegration of their communities. Tribal people respond occasionally with anger and assertion, but often also with anomie and despair, because the following persistent problems have by and large remained unattended to:

- land alienation;
- indebtedness;
- government monopoly over non-timber forest products (NTFPs);
- ineffective implementation of Panchayats (Extension to the Scheduled Areas) Act

of 1996 for Schedule[24] V areas;
- involuntary displacement as a result of development projects and lack of proper rehabilitation;
- shifting cultivation.

Extremists groups are active and normal administration does not function in at least one-third of tribal blocks in central India.

Apart from the policy failures listed above, tribals have also suffered because of the poor quality of governance. Programme implementation has deteriorated everywhere in India, but more so in tribal areas, where government servants are reluctant to work, and are mostly absent from their official duties. The government seems to have surrendered to political pressure from such staff, as many of their positions have now been officially transferred from tribal regions to non-tribal regions, where they can draw their salaries without doing any work! It is a pity that massive vacancies exist in tribal regions in the face of acute educated unemployment in the country.

Subsistence agriculture, the gathering of NTFPs and wage labour are the main sources of livelihood among tribal people. They are concentrated in the least developed, rain-fed, undulating and often remote hilly regions of the country, largely untouched by the 'green revolution'. Thus, while landlessness is relatively low among tribal people compared with other poor communities, agriculture productivity is low and other farm-based avenues, such as dairy and horticulture, are also poorly developed, leading to widespread food insecurity.

Lack of space prevents discussion of these issues, however crucial they may be, and we will end this section by making a few suggestions for improving tribal people's livelihoods.

First, launch watershed development programmes in uplands, where most tribals live. In a successful watershed programme the poor benefit in three ways: 1) as net sown area and cropping intensity increases, more opportunities for wage employment are created, which may also increase the wage rate, besides the number of days of employment; 2) increased water availability and reduced soil erosion increases production on small and marginal farmers' lands; 3) higher productivity of CPRs improves tribal people's access to more fodder, fuelwood, water and NTFPs.

Second, start a drive to plant fruit trees on degraded forests and homestead lands that belong to or have been allotted to the tribals. This will not only make these people's diet more nutritious, but will also diversify their livelihoods and reduce seasonal vulnerability.

Third, extend their work guarantee through an amendment in the NREGA to 150 days.

Finally, promote civil society action in these districts, not only because the reach of the administration is limited, but also because tribal societies are more homogeneous and respond well to calls for collective action, which will improve their social capital, which is so necessary for the success of many government programmes.

[24] Regions with significant tribal populations in central India have been specifically mentioned in the fifth Schedule of the Constitution, and have been provided with some safeguards, which, however, have not worked well because of political and administrative apathy.

6. Supreme Court Intervention

In April 2001 the Peoples' Union for Civil Liberties, a human rights organisation, filed a Public Interest Litigation in the Supreme Court of India arguing that the right to food is a fundamental right of all Indian citizens, and demanded that the country's gigantic food stocks (about 50 million tonnes of grain at that time) should be used without delay to prevent hunger and starvation. It argued that the right to food should be seen as a corollary of the fundamental 'right to life' (Article 21 of the Indian Constitution), in so far as it is impossible to live without food. Supreme Court hearings have been held at regular intervals since, and the case has attracted wide national and international attention. Although the final judgment is still awaited, significant 'interim orders' have been passed from time to time.

For instance, the Supreme Court has passed orders directing the Indian government to:

1. introduce hot cooked mid day meals in all primary schools;
2. provide 35 kg of grain per month at highly subsidised prices to 15 million destitute households under the AAY component of the PDS;
3. double the resource allocations for Sampoorna Grameen Rozgar Yojana (India's largest rural employment programme at that time, now superseded by the Employment Guarantee Act);
4. universalise the ICDS by increasing the number of centres from 0.6 million to 1.4 million;
5. identify SC and ST hamlets and habitations for new ICDS centres on a priority basis.

Realising the impact that lapses in implementation have on the well-being and even the survival of poor people, in an interim order dated 28 November 2001, the Supreme Court converted the benefits of nine food-related schemes into 'legal entitlements' and directed all the state governments to fully implement these schemes.

The initial petition focused on the drought situation prevailing at that time, especially in Rajasthan, but the litigation now has a much broader scope. The main concern is to put in place permanent arrangements to prevent hunger and starvation. The Court itself noted in an interim order dated 2 May 2003 that 'reference can also be made to Article 47[25] which inter alia provides that the State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties'.

The Supreme Court appointed two Commissioners, Dr N. C. Saxena and Harsh Mander (also a former civil servant), for the purpose of monitoring the implementation of the interim orders. The Commissioners present periodic reports to the Supreme Court. These typically deal with the implementation of Supreme Court orders. In addition the reports attempt to highlight issues that need further direction from the Court. These are based on extensive correspondence with governments,

[25] Article 47 (Duty of the State to raise the level of nutrition and the standard of living and to improve public health) directs that 'The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavor to bring about prohibition of the consumption except for medicinal purpose of intoxicating drinks and of drugs which are injurious to health.' The limitation has been that, unlike the Fundamental Rights, which are unambiguous, the Directive Principles of state policy (of which Article 47 is a part) have moral rather than legal force.

reports from the Commissioners' Advisors, interaction with citizens' organisations, and field visits made by the Commissioners. So far, eight reports and a few interim reports have been submitted. They are a rich source of information on the food situation in India, the implementation of interim orders, the functioning of various schemes, and so on. The reports also include detailed recommendations to the Court.

Experience shows that the Court's orders have been a useful tool for action. First and foremost, they provide an opportunity to hold the state accountable. Court orders can also be used to help people understand that they are entitled to certain forms of public support as a matter of right. And last, governments on their own have started giving higher priority to the monitored schemes and have often improved the design in order to increase their coverage. For instance, the number of old-age pensioners has been doubled and the scale of the pension has increased from Rs 75 per month to Rs 200[26] per month. Several improvements have been made in the contents of MDM, and in 2006, the calorie content was increased from 300 calories to 450 calories and the protein content from 8–12 grams to 12 grams.

On the other hand, the interim orders are far from being fully implemented, primarily because of poor delivery structure and weak implementation capacity. For instance, the Court directed that the AAY cards should be given to the following people:[27]

- aged, infirm, disabled, destitute men and women, pregnant and lactating destitute women;
- widows and other single women with no regular support;
- old persons (aged 60 or above) with no regular support and no assured means of subsistence;
- households with a disabled adult and no assured means of subsistence;
- households where, because of old age, lack of physical or mental fitness, social customs, need to care for a disabled member, or other reasons, no adult member is available to engage in gainful employment outside the house;
- primitive tribes.

However, in actual practice the commissioners have found gross violation of these orders, and there are serious errors of omission and inclusion, as shown in Table 20. Lapses have been reported to the Court, and twice the Court summoned and pulled up the states' Chief Secretaries. On the whole, the case has certainly enhanced the profile of the hunger-related schemes, and administrators at all levels give a much higher priority to these schemes than ever before.

Whereas there has been a remarkable improvement in conditions since the case commenced, the highly uneven performance of the majority of state governments confirms that the achievement of assured food security for all people, especially vulnerable social groups, cannot be left to executive discretion alone. It must become a judicial legal entitlement binding on every government, union, state and local, if the enormous human suffering, indignity, economic and social costs and enduring injustice associated with entirely preventable denial of access to food, and malnutrition are to be overcome, and hunger banished from every home in the country.

[26] This is only the central government's contribution. States are encouraged to add to the amount, with the result that the actual pension amount varies from Rs 200 to Rs 500 per month.

[27] Most of the people in these categories suffer from chronic hunger.

7. Improving Accountability

The Indian state implements massive food, livelihood and social security programmes – some of the largest in the world – which theoretically support vulnerable people from even before their birth to their survivors after death. Expectant mothers are fed in ICDS centres, along with infants, children up to the age of six, and adolescent girls. Children in school get school meals. As adults, women receive maternity support, breadwinners are guaranteed 100 days of wage employment in public works; and, if identified as poor, they can buy subsidised cereals from a massive network of half a million ration shops. The aged – and in many states widows and disabled people – are given pensions. If an earning adult dies prematurely, their survivor is entitled to insurance.

These programmes are plagued by corruption, leakages, errors in selection, delays, poor allocations and little accountability. They also tend to discriminate against and exclude those who most need them, by social barriers of gender, age, caste, ethnicity, faith and disability; and through state hostility to urban poor migrants, street and slum residents, and unorganised workers. Therefore, not only do we need to identify the destitutes and run special programmes for them, but we must improve monitoring and accountability for all programmes that impinge on hunger.

7.1 Destitutes

Government programmes are woefully inadequate at addressing destitution; in fact they tend to be blind to or in denial of the fact that large numbers of people lack even the elementary means and power to survive with dignity. The government needs to act, not after there is an emergency like a drought or flood, not even *after* people die of starvation, but proactively, before people slip into destitution and fail to access the nutritious and culturally appropriate food they require to lead healthy lives.

7.1.1 Identification

One feature which is common to public policy relating to the dispossessed groups[28] is the fact that, for almost all of them, there is very little authentic official data about their numbers and lists. This is not a chance or random default. It is the outcome of what we describe as 'invisibilisation' of these powerless people by the state. We therefore recommend an effort at least once every two years not just to estimate these groups, but to conduct a full listing. This should be undertaken in each district of the country, led by the state government and district collectors, but with active participation of local bodies such as *gram sabhas* and municipalities, professionals, experts, civil society groups and representatives of these populations. These lists should be updated every two years, and should form the basis for them to receive their due entitlements.

7.1.2 Free food

All old people from the neighbourhood should be permitted to share in the mid day meal of hot cooked food in schools or ICDS centres without any conditions, as practised in the state of Tamil Nadu. This serves as a last defence against starvation of the aged destitute, without requiring any additional administrative costs.

[28] The six categories are mentioned in section 6.

Community kitchens should be established across cities and urban settlements to provide inexpensive, subsidised nutritious cooked meals near urban homeless and migrant labour settlements. There should be a committed source of external funds (preferably from government or in partnership with civil society - both citizens and private sector), managed by community groups of homeless people, preferably women. The kitchens will provide employment as cooks to homeless people themselves (at least 50 such kitchens per city with a population of less than one million, 100 for cities with populations of over one million, and 500 for those with over ten million).

7.1.3 Residential care for food security of the most vulnerable children

For children of rural seasonal migrants, the village school should be converted into a community-based temporary residential school, to enable the child to access food and education, without having to migrate every year with their guardians. The aged of the village, who are often left behind in destitute conditions, may take care of the children in return for sharing the food in the community based hostels. This model has been adopted by the Orissa government for the Bolangir district, and is recognised internationally as a best practice, applauded among others by Dr Amartya Sen.

For children who still migrate, it should be the duty of the education department of the host state to provide education in their local language at work sites, and to permit the child to access mid day meals at the nearest government school. This is again a best practice adopted by the governments of Andhra Pradesh for migrant families from Orissa.

For children who live and work on the streets, the only way to secure their right to food (and with this their rights to education, health and protection) is to provide them with opportunities to move decisively away from the streets and any kind of work. This is possible only through guarantees of comprehensive long term care in open voluntary residential homes. Every city would need a large network of such schools. This could be done by converging the Sarva Shiksha Abhiyan (a programme to bring every child to schools) and the Women and Child Department's night shelter programmes, as well as Labour Department programmes for child workers, to pool resources to create hostels for urban street and working children, and by greatly enhancing allocations. This best practice has been adopted by the governments of Andhra Pradesh and Delhi. The aim should be in the first phase of three years to start at least 100 such centres in all metropolises; with 50 in all other urban areas with a population of more than half a million.

7.2 Problems of delivery and implementation

Outlays should not be considered an end in themselves. Delivery of food-based schemes requires increasing financial resources, but more importantly the quality of public expenditures in these areas. This in turn requires improving the governance, productivity and accountability of government machinery. Some suggestions are:

1. Shift from input controls to monitoring of outcomes. Officials at all levels spend a great deal of time collecting and submitting information, but this is not used for taking corrective and remedial action or for analysis, but only for forwarding to a higher level, or for answering Parliament or Assembly questions. Often data on performance arrive late, or are not available on a district basis, or is 'doctored', with the result that accountability cannot be enforced. For instance, we do not have district-based figures on infant mortality rates, maternal mortality rates, malnutrition, or poverty. Had these

data been available every year and for each district, it would have been easier to fix responsibility and help in outcome monitoring.

It is not enough that central government departments and state governments use professional and academic organisations to undertake impact studies from time to time. Their findings must be publicised and discussed with key stakeholders so that improvements in design and delivery can be effected at the earliest. Governments should also put the findings of the impact studies on their websites, and distribute these in the workshops they organises. Dissemination of results is critical for use.

2. Assess quality. There are unfortunately no indicators for assessing the quality of programme outcomes. The GOI and civil society may like to fill this void and produce reports that assess the quality of outcomes. For instance, one would like to know how many newly constructed toilets are being used, and what impact these have had on peoples' health and hygiene.

3. Measure absenteeism. While satisfaction may be subjective, and with economic progress people's aspirations for high quality services may have increased, quantitative data on absenteeism of both service providers and service receivers (number of days the ration shops open, or women turning up for institutional deliveries) throws a great deal of light on the quality of service. For instance, a study in Rajasthan indicated that 45 percent of doctors were absent from PHC centres, and 56 percent of the time sub-centres were closed. Worse, the patterns of absence and facility closures were essentially unpredictable, so people could not plan their visits.

4. Social audit. Governments should introduce a social audit by assessing the experience of the people service providers are intended to serve. With community participation, the evidence should be collected from stakeholders, so as to promote accountability, equity, effectiveness and value for money. Such an audit will supplement the conventional audit and will often provide leads to it. A financial audit aims at making organisations accountable to the government and to the legislature. A social audit makes them accountable to their stakeholders, especially in relation to social objectives.

5. Promote public–private partnership. The role of the private sector in the social sector is not sufficiently recognised in India. For instance, most health care is now given in the private sector and, for the poor, by very poorly trained or untrained practitioners. Rather than trying to replace private services, the government should try to improve the private market, with the carrot of training and the stick of public information. Public funds should be increased for combating communicable diseases and providing health insurance cover to all.

6. Link performance to fiscal transfers. Very little of the GOI's annual transfers to the states (roughly Rs 3,000 billion, not including subsidies, such as on food, kerosene, and fertilisers) is linked with performance and good delivery. The concept of good governance needs to be translated into a quantifiable annual index on the basis of certain agreed indicators such as infant mortality rate, extent of immunisation, feeding programmes for children, availability of safe drinking water supply, malnutrition, rural and urban unemployment, the percentage of girls married below 18 years, percentage of villages not connected by all weather roads, and so on. Once these figures are publicised, states may compete to improve their score. Central transfers should be linked to such an index.

8. Conclusion

In the ultimate analysis, the constraints on reducing hunger are rooted in bad policies, faulty design, lack of appropriate monitoring and evaluation, poor governance and lack of political will. Action is needed on all these fronts. Economic growth alone is insufficient to bring about significant reductions in the prevalence of malnourishment among children, or to an increase in food intake among the poor. Without a major shake up in policy and an improvement in the effectiveness of its implementation, attaining the MDGs in this regard looks extremely unlikely for India.

Development is an outcome of efficient institutions rather than the other way around. The focus must therefore be shifted from maximising the quantity of development funding to maximising development outcomes and the effectiveness of public service delivery. Concerted policy action is needed to improve the hunger indicators of marginalised groups, of women and children, and of the 300 million poor increasingly concentrated in the poorer states. This requires additional resources, as well as better policies and sound delivery mechanisms. Unless ration shops open and distribute food, doctors attend health centres and provide health care, and incentives for them to do so are not perverse, a mere increase in the social sector expenditure will only result in further leakages and in swelling the already non-functional parasitic bureaucracy.

List of Acronyms

AAY	Antyodaya Anna Yojana
ANM	Auxiliary Nurse Midwife
APL	Above poverty line
BMI	Body Mass Index
BPL	Below poverty line
CAG	Comptroller and Auditor General of India
CED	Chronic energy deficiency
CPR	Common property resources
FAO	Food and Agricultural Organization of the United Nations
FCI	Food Corporation of India
FPS	Fair Price Shops
GDP	Gross Domestic Product
GHI	Global Hunger Index
GOI	Government of India
HYVs	High-yield varieties
ICDS	Integrated Child Development Services
IFPRI	International Food Policy Research Institute
LBW	Low birth weight
LHV,	lady health visitor
MDG	Millennium Development Goals
MDM	Mid Day Meal Scheme
MSP	Minimum Support Price
MLA	Member, Legislative Assembly
MT	Metric Tons
NABARD	National Bank for Agriculture and Rural Development
NFHS	National Family Health Surveys of India
NNMB	National Nutrition Monitoring Bureau
NREGS	National Rural Employment Guarantee Scheme
NSS	National Sample Surveys of India
NTFPs	Non-timber forest products

OBC	Other backward castes
ORS	Oral rehydration solution
PDS	Public Distribution System
PHC	primary health centre
PPP	Purchasing Power Parity
PTGs	Primitive tribal groups
RIDF	Rural Infrastructure Development Fund
SC	scheduled-castes
SNP	Supplementary Nutrition Programme
ST	scheduled tribes
UNDP	United Nations Development Programme

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