FOOD AND NUTRITION*

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According to Pierre Mac Orlan, artist and writer, "humanity is first and foremost a stomach". The statement is based on Mac Orlan's personal experience of hunger during his childhood in France, but it would not be difficult to substantiate it in the Indian context. Folk songs, historical records, direct observation, consumer expenditure surveys and a host of other sources point to the absorbing role of food in Indian culture. This popular concern, however, goes hand in hand with an extraordinary neglect of nutrition issues in public policy, in spite of the democratic nature of India's political institutions. Even the basic facts are poorly understood.

The nutrition situation

The first point to note about the food situation in India is that undernutrition levels are extremely high. To illustrate, according to the second National Family Health Survey ("NFHS-2", conducted in 1998-99), 47 per cent of all Indian children below age three are underweight, 52 per cent of all adult women are anaemic, and 36 per cent have a "body mass index" below the cut-off of 18.5 commonly associated with chronic energy deficiency (International Institute for Population Sciences, 2000). This humanitarian catastrophe is not just a loss for the persons concerned, but also a tragedy for the nation as a whole. A decent society cannot be built on the ruins of hunger, malnutrition and ill health.

Few countries fare so badly in this field. According to *Human Development Report 2005*, only two countries (Bangladesh and Nepal) have a higher proportion of underweight children than India, and another two (Sudan and Yemen) have a higher proportion of infants with low birth-weight. Even after taking into account various gaps and inaccuracies in the international data, there is no doubt that undernutrition levels in India are among the highest in the world.

A wealth of further evidence on different aspects of the nutrition situation in India is available from NFHS-2. Consumption data, for instance, bring out the frugal nature of food intakes for a majority of the population. Only 55 per cent of adult women in India consume milk or curd at

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least once a week, only 33 per cent eat a fruit at least once a week, and 28 per cent get an egg. The evidence on child morbidity is no less sobering. Among children under the age of three years, 30 per cent had fever during the two weeks preceding the survey, 19 per cent had diarrhoea, and another 19 per cent had symptoms of acute respiratory infection (International Institute for Population Sciences, 2000). Even after allowing for some overlap between these different groups, this suggests that at least half of all Indian children below age 3 suffer from one of these conditions within any given interval of two weeks.

All these figures are national averages. It goes without saying that the situation gets worse – far worse - as we consider the poorer states (e.g. Jharkhand or Orissa), and the more deprived regions within these poorer states (e.g. Palamau in Jharkhand or Kalahandi in Orissa), not to speak of the poorer communities within these deprived regions. Among the Sahariyas, Musahars, Kols, Bhuiyas and other marginalized communities, the nutritional situation can only be described as a permanent emergency. To illustrate, in a recent survey of 21 randomly-selected households in a Bhuiya hamlet of Palamau district in Jharkhand, 20 reported that they had to "skip meals regularly" (Bhatia and Drèze, 2002). At the time of the survey, most of the households in this hamlet survived on *chakora* (a local spinach) and *gheti* (a wild root), supplemented with some broken rice on lucky days. Some had nothing to eat but plain *chakora*.

Recent trends

Recent nutrition trends in India present some interesting puzzles. Starting with anthropometric indicators, the situation seems to be improving, though rather slowly. For instance, anthropometric data from the National Nutrition Monitoring Bureau (NNMB) suggest a slow increase in the heights and weights of Indian children in the 1980s and 1990s, as well as a reduction in the proportion of adults with low "body mass index". The first two rounds of the National Family Health Survey (1992-3 and 1998-9) point in the same direction. To illustrate, the proportion of underweight children came down by about one percentage point per year between the two surveys – from 53 to 47 per cent. Both sources (NNMB and NFHS) suggest similar rates of reduction of undernutrition over time.

While anthropometric data present a fairly consistent picture of slow improvement, food intake data are harder to interpret. There has been much debate, for instance, about the steady decline in cereal intake. According to National Sample Survey (NSS) data, average cereal intake declined from 14.8 kgs per month to 12.5 kgs per month between 1983-4 and 2000-1 in rural areas, and from 11.4 to 10.2 kgs per month in urban areas (Deaton, 2006). The decline was

particularly sharp among the higher income groups. For instance, among the top 20 per cent of the rural population in terms of monthly per capita expenditure (MPCE), cereal consumption declined from 18.8 to 13.4 kgs per month in this period. Among the poorest 20 per cent, cereal consumption remained virtually unchanged (about 11.5 kgs per capita per month in both years).

The issue is whether the decline of cereal consumption is a matter of concern. This decline has been associated with substantial increases in intakes of non-cereal food items such as milk, oil, fish, meat, eggs, fruits, etc., not just among the rich but also among the poor. Some experts have argued that this gradual substitution from cereal to non-cereal foods is a positive development. Indeed, a similar "diversification" of food intake, away from cereals, has been observed in many other countries as levels of living improve.

What is puzzling, however, is that the diversification of food intake in India does not seem to be associated with an increase in nutrient intakes. According to NSS data, per-capita calorie intake in rural India declined from 2221 kcal/day in 1983-84 to 2149 kcal/day in 1999-2000 (NSSO, 2001). In fact, per-capita intake of most nutrients declined in that period, with a few exceptions such as Vitamin C (Sharma, 2006). This trend is broadly consistent with independent evidence from the National Nutrition Monitoring Bureau (see Table 1). Here again, the decline was particularly sharp among higher MPCE groups; but it is fairly broad-based, and even among the poorer groups, there is little indication of a significant rise in nutrient intakes in the 1980s and 1990s.

The simultaneous decline of cereal and nutrient intakes has been interpreted by some commentators as a symptom of the "impoverishment" of the rural population. This interpretation, however, leads to further paradoxes and unresolved puzzles. First, there is little evidence of sustained, widespread impoverishment of the rural population in the 1980s and 1990s. This is particularly true of the 1980s (poverty trends in the 1990s are more controversial), when poverty indexes and related social indicators were steadily improving. Yet the decline of cereal and nutrient intakes was already in full swing in that decade. Second, this explanation jars with the fact that the decline of nutrient intakes has occurred mainly in the higher MPCE groups. There is strong evidence that these groups have enjoyed sustained increases in living standards in the 1980s and 1990s. Clearly, something else than "impoverishment" (e.g. a reduction in nutrient requirements associated with reduced activity levels or better health) needs to be invoked to explain the decline of nutrient intakes among these groups. And it is quite possible that this hidden factor, whatever it was, also played a role in the stagnation of nutrient intakes among lower-income groups. Third, if impoverishment is the reason for the stagnation of

nutrient intakes among lower-income groups, it is not clear why the consumption of "superior" foods such as milk, oil, eggs and meat should have increased in the same period (changes in relative prices are unlikely to provide an adequate explanation).

As things stand, both the "diversification" view and the "impoverishment" view of recent trends in food intake leave important questions unanswered. The diversification view, which regards the substitution from cereals to non-cereals as a positive development, has to be reconciled with the decline of nutrient intakes. The impoverishment view, for its part, is hard to square with other recent evidence on food intakes and living standards.

A related puzzle is the relation between cereal intake and per-capita income - the "Engel curve" for cereals. NSS data suggest that cereal intake rises steadily with per-capita income (more precisely, per-capita expenditure). According to NNMB data, however, this Engel curve is more or less flat, and, if anything, downward sloping except at very low levels of per-capita income. The NNMB pattern is much easier to reconcile with recent changes over time – rising incomes, declining cereal intake. If this pattern applies, the decline of cereal intake over time may not be a matter of concern. On the other hand, it would also mean that there is something wrong with the NSS food consumption estimates, and cast doubt on a good deal of "conventional wisdom" based on these estimates.

This is an important area of further research. Meanwhile, two useful lessons emerge from this debate. First, our understanding of "nutrient requirements" seems to call for reappraisal. Food intake studies in India are typically based on rigid norms (such as the Indian Council of Medical Research's "recommended daily allowances") that make little allowance for possible changes in activity levels, epidemiological environments, and so on. The steep decline in nutrient intakes among the better-off sections of the rural population in recent years suggests that nutrient requirements may, in fact, be highly context-specific. This would also help to explain related "anomalies" in food consumption data, such as Kerala's very low calorie intake levels, combined with excellent health and nutrition indicators.

Second, the fact that anthropometric indicators have apparently improved without any increase in average nutrient intakes draws attention to the role of "non-food factors" in nutritional achievements – basic education, ante-natal care, clean water and sanitation, among others. There is strong evidence, for instance, that maternal education is one of the major determinants of child nutrition. Similarly, there is increasing recognition of the crucial role of appropriate breastfeeding and weaning for healthy child growth. Effective nutrition policies call for paying

much greater attention to these non-food factors, along with a better understanding of the food factors.

Food Policy Reconsidered

Until recently, food policy in India was mainly geared towards promoting higher cereal consumption. This was based on a particular interpretation of the food problem, which might be called the "naïve economic perspective". In this perspective, calorie deficiency is taken to be the most important form of nutritional deprivation. Further, cereals are held to be the cheapest source of calories. From this it appears that the main issue is to raise calorie intake, and that raising cereal intake is the best means of achieving that goal.

This perspective translated into various policies aimed at boosting cereal intake. One example is state promotion of the Green Revolution, which led to major increases in the production of rice and wheat and helped to make cereals more affordable. India's public distribution system (PDS) also focused on subsidizing the consumption of cereals. Even child nutrition programmes such as the Integrated Child Development Services (and, later on, mid-day meals in primary schools), in spite of their formal recognition of the need for an "integrated" approach to child nutrition, quickly drifted in the direction of providing cereal-based food supplements to young children.

The preceding discussion raises important questions about this whole approach. Indeed, the evidence suggests that recent improvements in nutrition indicators have little to do with increases in cereal consumption. And there is a real possibility that further improvements depend overwhelmingly on food and non-food factors other than cereal intake. This does not detract from the usefulness of (say) subsidising cereal consumption through the public distribution system, as a form of income support or social security. But it does suggest that the sharp focus on cereal intake as a means of nutritional improvement may be misplaced, and that more attention needs to be paid to other means of removing malnutrition: qualitative dietary improvements, better ante-natal care, the promotion of effective breastfeeding, the prevention of infectious diseases, to cite a few examples.

The naïve economic perspective has been associated with another major bias in food policy: an excessive focus on households rather than individuals. If cereal intake is the main issue, focusing on household entitlements seems appropriate, since the intra-household distribution of cereal intake is hard to influence through public policy. But if nutrition is influenced by a wide range of food and non-food factors, the scope for individual intervention is likely to be much

larger. This broader perspective draws our attention, in particular, to the possibility of intervening in early childhood. In India, the nutritional status of children deteriorates sharply between the ages of six months and two years, and this "early childhood dip", which is very hard to reverse, has a lasting impact on nutrition and health achievements. Yet, little effort has been made to reach out to this crucial age group. There are well-known means of doing so, notably by expanding and revamping the Integrated Child Development Services – a national programme of integrated health, nutrition and pre-school education services for children under the age of six years (Drèze, 2006). Bringing young children (and their mothers) closer to the centre of attention would be a major step towards more effective nutrition policies in India.

Switching, then, to my activist hat, I cannot resist concluding with a reference to the case for a "rights approach" to food and nutrition policies in India (Drèze, 2004). The ability of the rights approach to bring about practical change in this field has been well demonstrated in recent years, notably with the mandatory introduction of mid-day meals in primary schools, the enactment of the National Rural Employment Guarantee Act, and (more recently) the gradual "universalization" of ICDS. There is much scope for further extension of this approach, especially by putting in place legal safeguards for children's right to food.

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TABLE 1

Recent Nutrition Indicators

Year	Average energy/protein consumption (per "consumer unit" per day)		Proportion (%) of adults with "body mass index" (BMI) below 18.5	Proportion (%) of underweight children, age 1-5 years
	Energy (kcal)	**Protein** (g)		
1988-90	2283	58.4	49.2	66.6
1996-97	2108	53.7	46.8	62.4
2000-1	1954	50.7	38.6	60.1
2004-5*	1907	48.8	35.5	54.5

* Provisional.

Source: National Nutrition Monitoring Bureau (partially published data kindly supplied by Dr. G.N.V. Brahman, Deputy Director). The reference region consists of: Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, West Bengal. The 1988-90 and 1996-97 figures exclude Madhya Pradesh and West Bengal; the 2004-5 figures exclude Gujarat.