REPORT ON THE STATE OF FOOD INSECURITY IN RURAL INDIA

M S Swaminathan Research Foundation
Centre for Research on Sustainable Agriculture and Rural Development

World Food Programme
The Food Aid Organization of the United Nations

REPORT ON THE STATE OF FOOD INSECURITY IN RURAL INDIA

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The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.

The inter-state boundaries amongst Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the North-Eastern Areas (Reorganisation) Act 1971, but have yet to be verified.

The external boundaries and coastlines of India agree with the Record/Master Copy certified by Survey of India.

The state boundaries between Uttarakhand & Uttar Pradesh, Bihar & Jharkhand and Chhattisgarh & Madhya Pradesh have not been verified by the Governments concerned.

The spellings of names in this map, have been taken from various sources.

MSSRF/RR/08/18

PREFACE

The M S Swaminathan Research Foundation (MSSRF) and the World Food Programme (WFP) initiated in the year 2000 an exercise to map the food security situation in rural and urban India. The factors governing the sustainability of food security were also studied. As a result of this work, the following three Atlases were prepared and distributed widely:

- Food Insecurity Atlas of Rural India (April 2001)
- Food Insecurity Atlas of Urban India (October 2002)
- Atlas of the Sustainability of Food Security in India (February 2004)

The present Report is an update of the Rural Food Insecurity Atlas of 2001. While releasing the Food Insecurity Atlas of Rural India, Shri. Atal Bihari Vajpayee, the then Prime Minister of India, made the following observations:

"*[T]he sacred mission of a 'Hunger Free India' needs the cooperative efforts of the Central and State Governments, local self-government bodies, non-governmental organisations, international agencies, and — above all, our citizens. We can indeed banish hunger from our country in a short time. Let us resolve today to make this mission substantially successful by 2007, which will mark the sixtieth anniversary of our independence*".

In spite of such political commitment, the malnutrition scenario in India, as will be evident from the following data, is a cause for deep worry:

- Almost 40 per cent of children under three are underweight and 45 per cent are stunted.
- 22 to 30 per cent children are born with low birth weight.
- 36 per cent adult women and 34 per cent adult men suffer from chronic energy deficiency.
- The National Family Health Surveys show a marginal increase in anaemia from 74 per cent to 79 per cent in children under five and 52 per cent to 56 per cent in young women.
- Iodine deficiency disorders, vitamin A and vitamin B deficiency are fairly rampant.

Because of this situation, Prime Minister Dr. Manmohan Singh has recently set up a National Council on India's Nutrition Challenges. Several steps have also been taken by the Central and State Governments for strengthening the food and nutrition safety nets for the economically and socially underprivileged sections of our society. Some of these are:

- National Horticulture Mission, which can provide horticultural remedies to nutritional maladies.
- National Food Security Mission designed to increase the production and availability of wheat, rice, and pulses.
- *Rashtriya Krishi Vikas Yojana* designed to help in bridging the gap between potential and actual yields in the fields of small farmers.
- National Rural Health Mission.
- National Rural Employment Guarantee Act.
- Strengthened Integrated Child Development Services (ICDS).
- Enlarged Mid-Day Meal Programme in schools.

There are many other nutrition support programmes organised by the State Governments, and WFP, UNICEF, other UN Agencies, bilateral donors and civil society organisations are supporting many such national and State level programmes.

Food security has three components:

- Availability of food in the market,
- Access to food through adequate purchasing power, and
- Absorption of food in the body.

Many of the social safety net programmes and agriculture production programmes can ensure the availability and access to food. However, even if the required quantities of macro and micro nutrients are met, a serious handicap in achieving nutrition security arises from poor sanitation and environmental hygiene and lack of clean drinking water. Therefore, the present Report places emphasis on the availability of sanitation facilities as measured by percentage of rural households not having a toilet within the premises, as well as on the percentage of rural households without access to safe drinking water. Unless this aspect of food security is attended to with the involvement of local bodies (Panchayat Raj Institutions and *Nagarpalikas*), the food security situation in India will not show the desired improvement.

The purpose of this publication is to provide a basis for designing public action. It is hoped that the numerous new programmes initiated by the Government of India and State Governments along with the Prime Minister's National Council on India's Nutrition Challenges will help to hasten progress in achieving Mahatma Gandhi's vision of a hunger free India.

The preparation of this Report has been steered by Professor Venkatesh Athreya who was Director of the Food Security Programme Area at the M S Swaminathan Research Foundation from 2005 to 2007, in association with a team of researchers headed by Ms. R V Bhavani, Director, Food Security. We are deeply aware of the limitations of the study. The Report only tries to give a broad indicative picture of the level of food insecurity in different States and the operation of the nutrition safety net programmes. We however hope that the Report will be of value in initiating new programmes both to fill gaps as well as to strengthen ongoing programmes. We express our gratitude to the wide range of researchers and organisations, including WFP India's programme staff, who have provided technical guidance and valuable comments in preparing this Report.

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The Report on State of Food Insecurity in Rural India presents an analysis of the food security situation in the country and the performance of the major public food delivery systems in operation. The Report was prepared by a team headed by Professor Venkatesh Athreya, Director, Food Security, 2005 – 07, and currently Advisor, Food Security, at the Foundation. We are very grateful to him for having steered the exercise.

Mr. GianPietro Bordignon was the Country Director of WFP India when the work commenced. We are grateful to him for his support in the initiative. We are very grateful to Ms. Mihoko Tamamura, currently the WFP Representative in India and Country Director, for continuing the support and seeing through the culmination of the exercise. Dr. Nisha Srivastava, till recently Head, Research, M&E/VAM at WFP, Dr. Minnie Mathew, Senior Programme Adviser, WFP, Dr. Bal Paritosh Dash and Mr. Animesh Kumar of WFP, assisted with inputs and suggestions at various times. Our sincere thanks go to all of them.

We express our gratitude to all the members of the Technical Advisory Group for the Report. The Technical Advisory Group met twice. At the first meeting in March 2006, the process, methodology and focus of the Report were agreed upon. A draft of the Report was discussed at a second meeting in July 2008 and the suggestions received were taken into consideration in finalising the Report. Two of the members of the Group, Dr. Prema Ramachandran, Director, National Foundation of India, and Dr. Shashi Prabha Gupta, Consultant, Vistaar, helped with specific written inputs in the concluding chapter. Our special thanks to them.

This Report has also drawn on the recommendations of a national workshop on 'Hunger-Free India' held at the Foundation in April 2006. We are grateful to the participants of the workshop.

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AAY	Antyodaya Anna Yojana
ACA	Additional Central Assistance
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
AWC	Anganwadi Centre
AWH	Anganwadi Helper
AWW	Anganwadi Worker
BMI	Body Mass Index
BPL	Below Poverty Line
CACP	Commission on Agricultural Costs and Prices
CARE	Cooperation for Assistance and Relief Everywhere
CED	Chronic Energy Deficiency
CEDAW	Convention on the Elimination of all forms of Discrimination Against Women
CFB	Community Foodgrain Bank
CIP	Central Issue Prices
EGS	Employment Guarantee Scheme
ESP	Essential Supplies Programme
FAD	Food Availability Decline
FAO	Food and Agriculture Organisation
FCI	Food Corporation of India
FFW	Food for Work Programme
FIARI	Food Insecurity Atlas of Rural India
FPS	Fair Price Shop
FSM	Food Security Mission
GDP	Gross Domestic Product
GoI	Government of India
GR	Green Revolution
HDR	Human Development Report
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
ICDS	Integrated Child Development Services
ICES	International Covenant on Economic, Social and Educational Rights
ICMR	Indian Council of Medical Research
IDA	Iron Deficiency Anaemia
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute

IMR	Infant Mortality Rate
IPCC	International Panel on Climate Change
IYCF	Infant and Young Child Feeding
JRY	Jawahar Rozgar Yojana
LBW	Low Birth Weight
LFL	Low Female Literacy
MDMS	Mid-Day Meals Scheme
MME	Management and Monitoring and Evaluation
MNP	Minimum Needs Programme
MoHRD	Ministry of Human Resource Development
MPCE	Monthly Per capita Consumption Expenditure
MSP	Minimum Support Price
MSSRF	M S Swaminathan Research Foundation
MT	Million Tonnes
NAPCC	National Action Plan on Climate Change
NCF	National Commission on Farmers
NCMP	National Common Minimum Programme
NDC	National Development Council
NFHS	National Family Health Survey
NHDR	National Human Development Report
NIPCCD	National Institute of Public Co-operation and Child Development
NMP	Noon Meal Programme
NNP	Net National Product
NP-NSPE	National Programme of Nutritional Support to Primary Education
NREGA	National Rural Employment Guarantee Act
NREGS	National Rural Employment Guarantee Scheme
NSSO	National Sample Survey Organisation
ORG	Observers Research Group
PDS	Public Distribution System
PEO	Performance Evaluation Organisation
PHC	Primary Health Centre
PIL	Public Interest Litigation
PMGY	Pradhan Mantri Gramodaya Yojana
PRIs	Panchayat Raj Institutions
PUCL	People's Union for Civil Liberties
RKVY	Rashtriya Krishi Vikas Yojana
RLTGP	Report of the high level committee on Long Term Grain Policy
RPDS	Revamped Public Distribution System
RTF	Right to Food

SAPs	Structural Adjustment Policies
SC	Scheduled Caste
SFPs	School Feeding Programmes
SHG	Self-Help Group
SNP	Special Nutrition Programme
ST	Scheduled Tribe
TINP	Tamil Nadu Integrated Nutrition Programme
TPDS	Targeted Public Distribution System
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations International Children's Emergency Fund
UNMDG	United Nations Millennium Development Goal
WB	World Bank
WFP	World Food Programme
WHO	World Health Organisation

Part I

Chapter 1

Introduction

A decade on from the first World Food Summit held in Rome, 1996, the problem of food and nutrition insecurity still remains a great threat to a large number of poor and vulnerable people across the world. In 2001 – 03, there were 854 million undernourished people in the world, of whom 820 million were in developing countries, 25 in transition economies and the remaining nine million in the developed world. This implies that, between 1990 – 92, when there were an estimated 823 million undernourished persons in the developing world and 2001 – 03, the decline in the number of undernourished in the developing world is a mere three million, "a number within the bounds of statistical error", as noted by the Director General of Food and Agriculture Organisation (FAO, 2006). This is in sharp contrast to the trends of the 1970s and 1980s. The number of undernourished in the developing world declined by 37 million during the decade of the 1970s and by a whopping 100 million in the 1980s. Of equal concern is the fact that after declining by 26 million between 1990 – 92 and 1995 – 97, the number of undernourished in the developing world rose by 23 million between 1995 – 97 and 2001 – 03. In the prevailing scenario, the United Nations Millienium Development Goals (UNMDG) of halving the number of poor and hungry in the world by 2015 remains a distant goal.

Within this general picture of a sharp reduction in the rate of decline in the prevalence of undernourishment in the developing world, China and Vietnam have done much better. Between 1990 – 92 and 2001 – 03, the number of hungry persons declined from 194 to 150 million in China, and from 21 to 14 million in Vietnam. In the case of India, however, the decline was marginal, from 215 million to 212 million. In the first half of the decade following the World Food Summit of 1996, official data registered a decrease in the number of India's undernourished by almost 13 million (FAO, 2004). During the second half of the decade, however, a reversal has been observed with the number of undernourished in India reportedly increasing substantially. This turn of events has occurred due to several factors such as the fall in foodgrain output growth rates, the increasing levels of unemployment, the impact of deflationary macroeconomic policies on the agricultural and rural economy and, perhaps most significantly, the influence these factors have had in decreasing the purchasing power of the poor people in India. The deterioration in the state of food and nutrition insecurity in India should be a serious concern of public policy. As the FAO notes:

> Cambodia and India saw virtually no change in the total number of undernourished people despite strong growth in per capita income of 4 per cent per year from 1993 to 2003 in Cambodia and 3.9 per cent per year from 1990 to 2003 in India (FAO, 2004)

While famines and starvation deaths remain the popular representation of the contemporary problem of hunger, one of the most significant yet understated and perhaps less visible area of concern today is that of chronic or persistent food and nutrition insecurity. This is a situation where people regularly subsist on a very minimal diet that has poor nutrient (including micronutrients) and calorific content as compared to medically prescribed norms. While chronic food and nutrition insecurity is a much less dramatic or visible incidence of hunger as compared to famines, it is in fact very widespread.

At the global level, the South Asian region is home to more chronically food insecure people than any other region in the world. The number of hungry persons in South Asia (Bangladesh, India, Nepal, Pakistan and Sri Lanka) rose from 290.4 million in 1990 – 92 to 298.5 million in 2001 – 03 (FAO, 2004). By far the greatest contribution to the number of undernourished people in South Asia has come from changes in the state of food and nutrition insecurity in India.

The cost of undernutrition or hunger to society comes in several forms. One of the most obvious is the direct cost of treating the damage caused by undernutrition and malnutrition. According to the FAO, circa 2000, "A very rough estimate, apportioning medical expenditures in developing countries based on the proportion of disability-adjusted life years (DALYs) attributed to child and maternal undernutrition, suggests that these direct costs added up to around US$30 billion per year" (FAO, 2004). The indirect costs of lost productivity and income caused by premature death, disability, absenteeism and lower educational and occupational opportunities, as suggested by provisional estimates calculated by the FAO, run into hundreds of billion dollars (ibid.). Therefore, maintaining food security at the local, national and global level is not only necessary to ensure global human security[1], but is also the most rational investment to ensure sustainable development in the South.

India ranks 94th in the Global Hunger Index of 119 countries. The National Family Health Survey 2005 – 06 (NFHS-3), highlights some very disturbing truths about the prevailing situation in the country: 56 per cent of the women are anaemic; 30 per cent of new born babies are of low birth weight (LBW); and 47 per cent of the children are underweight.

For a country like India where the achievement of food security is a continuing challenge, the consequences of ignoring the problem of food and nutrition insecurity seem very dire. Furthermore, as shown in this report, the state of severe food and nutrition insecurity not only suggests the presence of undernutrition and malnutrition in the country but it also sheds light on the crisis of the rural economy that India faces.

1.1 Defining Food and Nutrition Security – The Development of Food Security Studies

Various conceptualisations of the problem of food insecurity and various definitions of food security have been in use since the 1970s. These have reflected the varying concerns of the academics, the practitioners etc., over the years.

[1] The term, human security was first used by the United Nations Development Programme (UNDP) in 1994 in the Human Development Report. The term evolved out of the UNDP's concern for creating a more comprehensive notion of security, where security is not merely the concern of a State or a territorially defined entity but puts human beings at the centre and assesses the new threats that they face. Human security includes the following seven elements: economic security, food security, health security, environmental security, personal security, community security and political security (UNDP, 1994).

As Frankenberger and Maxwell (1992) document, "the roots of concern with food security can be traced back to the World Food Crisis in 1972 – 74; and, beyond that, at least to the Universal Declaration of Human Rights (1948), which recognised the right to food as a core element of an adequate standard of living". Despite this early recognition of the fundamental importance of the right to food, it was only in the 1970s and the 1980s that food security became a key concept around which theoretical frameworks and analysis of undernourishment began to be developed.

In the 1970s, many of the definitions of food security concentrated on the concern towards building up national or global level foodstocks, i.e., the importance of the physical availability of foodstocks (Frankenberger and Maxwell, 1992). Thus, food security in the 1970s was interpreted as, "availability at all times of adequate world supplies of basic foodstuffs…, to sustain a steady expansion of food consumption… and to offset fluctuations in production and prices" (UN, 1975).

In the specific context of India, the 'Green Revolution' (GR) of the late 1960s and early 1970s was not merely a technological intervention, but involved a whole set of supportive policies by the State. These included public investment in the agricultural sector including areas of research and development; provision of extension services; putting in place a system of procurement and public distribution for foodgrain (mainly rice and wheat); and provision of institutional credit and other inputs at subsidised rates. Its apparent success in substantially increasing food production by raising productivity levels in countries like India made it appear that the availability of food at the national level was less of a problem. Soon surplus food stocks were built up in previously food-deficit countries like India, though this did not by any means imply the absence of undernutrition or food insecurity in significant sections of the population. With apparent achievement of 'self-sufficiency' in foodgrain, the focus of analysis shifted in the 1980s. While the 'success' of the GR increased food availability, various studies on famines sought to make the point that famines could occur even when food was available, due to the lack of purchasing power among the people and this shifted the emphasis to the question of economic access to food at the household level.

Till the 1980s, the dominant approach to examining famines and their consequences focussed on food availability. This came to be known as the food availability decline (FAD) approach. However, in 1981, through his seminal work, "Poverty and Famines: An Essay on Entitlement and Deprivation", Amartya Sen (1981) challenged the then established FAD paradigm to assert that famines were not always a result of shortage of food. Famine, he argued, is a case of people not having enough to eat but this is not necessarily a result of there being not enough food to go around. It is from this idea that the 'entitlement' approach to food and famine stems. It is an approach that focuses attention on people having or not having enough command over food, as distinct from the idea that there is not enough food to eat.

According to Sen, an entitlement "stands for the set of different alternative commodity bundles that [a] person can acquire through the use of various legal channels of acquirement open to someone in his position" (Sen, 1995). The original commodity bundle held by the individual is referred to as the endowment set. The process of 'exchange entitlement mapping' (E-mapping) describes the transformation of the endowment set to the eventual commodity bundle a person acquires, i.e., it refers to the possibilities open to a person corresponding to each ownership situation. These entitlements are dependent upon the person's position in the economic class structure as well as their relationship with the modes and factors of production in the

economy (Sen, 1981). Through this mapping, it is possible to look at the relationships and alternatives that one can use, such as trade and production, to acquire different commodity bundles.

The central point made by Sen is that "[A] person is reduced to starvation if some change in his endowment (e.g. alienation of land, loss of labour power due to ill health), or in his exchange entitlement mapping (e.g. fall in wages, rise in food prices, loss of employment, drop in the price of the goods he produces and sells), makes it no longer possible for him to acquire any commodity bundle with enough food" (Sen, 1995). While Sen's analysis has drawn the critical attention of several scholars[2], one of the important aspects of his conceptualisation of entitlements is that it directs attention to the various economic, political, social and cultural relations that determine the 'acquirement of food by individuals' (Drèze et. al., 1995). The entitlement approach also emphasises the point that mere physical availability of food does not ensure access to that food by all the people, especially in an economic system dominated by market transactions. Sen notes that, in an economy with private ownership and trade, exchange entitlement sets are dependent on two parameters: (a) the endowment set of the person (ownership bundle) and (b) the exchange entitlement mapping (the function that specifies the set of alternative commodity bundles that a person can acquire for each specific ownership bundle) (Sen, 1981). Sen's analysis has also paved the way for the examination of intra-household distribution and allocation of food and has resulted in a shift of focus from national and household level food security to individual level food and nutrition security.

The conceptualisation of food insecurity and food security definitions in the 1980s reflects the dominance of the entitlement approach at that time. The FAO in 1983 stated that food security means "ensuring that all people at all times have both physical and economic access to the basic food they need". The World Bank (WB) took this definition forward in 1986 to assert that, food security is "access by all people at all times to enough food for an active and healthy life".

Today, food security concerns include not only the problems of physical availability of food stocks as well as economic and physical access to food stocks, but also biological utilisation of food consumed. That is, environmental conditions such as availability or otherwise of safe drinking water and sanitation as well as nutrition practices and knowledge that can help or hinder the absorption of food into the body form part of the more inclusive contemporary conception of food security.

The identification of the importance of a nutritious diet or of knowledge of nutrition is certainly neither entirely new nor is it a phenomenon of the 1990s. However, in the 1990s, there were significant efforts to define and identify the nutritional requirements of people as well as emphasis on the importance of a balanced nutritious diet in ensuring overall food security. One of the most important observations of the nutrition security debate has been that, "people's food security (i.e. their physical and economic access to nutritionally adequate food) does not automatically translate into their nutritional well-being. Nutritional disorders, including undernourishment, do not necessarily disappear once food security has been achieved. In addition to having access to foods that are nutritionally adequate and safe, people must have:

- Sufficient knowledge and skills to acquire, prepare and consume a nutritionally adequate diet, including those to meet the needs of young children;

[2] See work of Amrita Rangasami (1985), Stephen Devreux (2001) and Utsa Patnaik (1993) amongst others.

- Access to health services and a healthy environment to ensure effective biological utilisation of the foods consumed; and
- Time and motivation to make the best use of their resources to provide adequate family/household care and feeding practices" (FAO, 2000).

An individual's actual nutritional status is thus determined by a number of interrelated factors, of which food security is only one. The term 'nutrition security' is used to describe the condition of having access to all the food, health, social, economic and environmental factors necessary to achieve nutritional well-being, in accordance with the prevailing cultural context (ibid.). However, it needs to be reiterated that attaining food security in terms of just physical and economic access to food is a necessary condition for attaining the more holistic state of food security that subsumes nutrition security.

1.2 Dimensions of Food and Nutrition Insecurity

1.2.1 Definitions

The Food Insecurity Atlas of Rural India (FIARI)[3], and the current report, have adopted the definition of food and nutrition security derived by the FAO in the Rome Declaration on World Food Security in 1996, which states that food security exists 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" (MSSRF-UNWFP, 2001)[4].

Food insecurity is a dynamic concept, i.e., a State may be food insecure in the present or in the future or both. This may be examined in terms of present and potential food insecurity, where "potential food insecurity can occur either due to a potential lack of availability of food or due to a potential lack of livelihood or a potential threat of disease and lack of absorption" (ibid.). Food insecurity is also categorised as being chronic or transitory. Chronic food insecurity is a situation where people consistently consume diets inadequate in calories and essential nutrients. Transitory food insecurity, on the other hand, is a temporary shortfall in food availability and consumption. In this report, we will confine ourselves to chronic food insecurity.

Food and nutrition insecurity is both a complex as well as an overarching organising principle, which brings a number of diverse viewpoints and dimensions together to form a holistic approach to understanding the problem we face today. The following three aspects underlie most conceptualisations of food and nutrition insecurity[5] –

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[3] MSSRF-UNWFP, Food Insecurity Atlas of Rural India, 2001.

[4] Another example of a definition of food and nutrition insecurity is that used by the Food Insecurity and Vulnerability Information and Mapping Systems (FIVIMS) initiative, which is an inter-agency programme to promote information and mapping systems on food insecurity and vulnerability. FIVIMS states that food insecurity exists when people are undernourished as a result of the physical unavailability of food, their lack of social or economic access to adequate food, and/or inadequate food utilisation. Food-insecure people are those individuals whose food intake falls below their minimum calorie (energy) requirements, as well as those who exhibit physical symptoms caused by energy and nutrient deficiencies resulting from an inadequate or unbalanced diet or from the body's inability to use food effectively because of infection or disease. An alternative view would define the concept of food insecurity as referring only to the consequence of inadequate consumption of nutritious food, considering the physiological utilisation of food by the body as being within the domain of nutrition and health (FAO, 2006).

[5] Vidya Sagar (2005) has argued that there is a fourth aspect of food security that is also equally important – sustainability. However, there has been some debate as to what exactly sustainability refers to. Some commentators have argued that sustainability refers to the conservation and enhancement of ecological resources especially with regard to responses to food insecurity. Others like Chambers and Conway (1991) argue that sustainability need not just refer to environmental conditions. For Chambers and Conway, a livelihood can be sustainable environmentally, in its effects on local and global resources and other assets; or sustainable socially, i.e., able to cope with stress and shocks, and retain its ability to continue and improve. While the issue of sustainability is of growing importance in food security studies, the present report will concentrate on the aspects of availability, access and absorption. The issue of sustainability of food security will be taken up in a subsequent work.

- Availability – the physical availability of foodstocks in desired quantities, which is a function of domestic production, changes in stocks and imports as well as the distribution of food across territories.
- Access – determined by the bundle of entitlements, i.e., related to people's initial endowments, what they can acquire (especially in terms of physical and economic access to food) and the opportunities open to them to achieve entitlement sets with enough food either through their own endeavours or through State intervention or both.
- Absorption – defined as the ability to biologically utilise the food consumed. This is in turn, related to several factors such as nutrition knowledge and practices, stable and sanitary physical and environmental conditions to allow for effective biological absorption of food and health status.

The FIARI also dealt with the aspect of environmental sustainability under food availability, as a precondition for food security. A separate study on Sustainability of Food Security in India was undertaken subsequently[6].

1.3 Food and Nutrition Insecurity in India

Food and nutrition insecurity in India has largely been examined in extant literature from two angles:

1) Intake, primarily intake of calories as obtained from data on consumption of food; and
2) Outcome, reflected in anthropometric measures like stunting, wasting, etc. (Sagar, 2005).

There is a growing consensus that undernutrition and malnutrition continue to present major problems for India. Although there are no longer widespread famines on the scale of the Bengal Famine of 1943, the food and nutrition situation in India leaves a lot to be desired.

The present report uses both intake and outcome measures to examine the state of food security in India.

We present the scenario of food and nutrition security in India in this Report in two parts. First, we outline the major policy initiatives that have been taken towards ensuring food security by the country. An attempt is made to rank and map the relative position of the major States on the basis of a chosen set of indicators and a composite index of food insecurity and examine some of the possible reasons for the picture that emerges. Then we move on to look at some of the key issues that have been raised in relation to food and nutrition security in India. We focus on the public food delivery systems in the country and attempt a critical examination of their performance.

1.4 Food Policy in India : Attempts at Ensuring Food and Nutrition Security

India's food policy has emerged from a concern to ensure adequate supplies of foodgrain (mostly cereals) at reasonable prices (Chopra, 1981). The policy has largely mirrored the various changes in approach to food insecurity outlined earlier. Thus, India's policy has evolved from a focus on national aggregate availability of foodgrain to concentrating on household and individual level nutrition security.

The beginnings of food policy in India can be traced to the aftermath of the Bengal Famine in

[6] Atlas of the Sustainability of Food Security in India, MSSRF-UNWFP, 2004

1943. Several contemporary features of India's food policy find their origins in this period.

In January 1965, the Food Corporation of India (FCI) was set up in order to secure a strategic and commanding position for the public sector in the foodgrain trade. An Agricultural Prices Commission (subsequently renamed Commission on Agricultural Costs and Prices, CACP for short) was also set up to recommend procurement prices based on an analysis of costs of cultivation. India's foodgrain position turned precarious in 1965 – 66 following two successive monsoon failures. Statutory rationing was introduced in towns with more than one lakh population from 1965 – 66 to 1966 – 67, following a severe drought. Public distribution, crucially based on food imports, played a major role in mitigating the disastrous consequences of the drought (Chopra, 1981). India resorted to wheat imports from the USA under Public Law 480, leading to a situation described by an eminent agricultural scientist as 'a ship-to-mouth' existence. This had repercussions on India's pursuit of an independent foreign policy. This development brought the issue of national self-reliance in foodgrain prominently on the political agenda.

The response of the State to the foodgrain crisis of 1965 – 66 eventually took the shape of a new agricultural strategy, which has come to be known as the GR in popular parlance. High yielding seed varieties, combined with chemical fertilisers, pesticides and agricultural extension efforts, marked the new basket of inputs under the GR (Sharma, 2004). This was also backed up by significant public investment in input subsidies, research, and improvement in infrastructure such as irrigation.

The GR, confined largely to rice and wheat, was key to sustaining the growth rate of foodgrain output of the 1950s and early 1960s, but without the benefit of substantial increases in the area cultivated. The focus was on raising yields per acre and there was regional imbalance. Nevertheless, it helped critically in increasing the country's foodgrain output substantially, at a rate higher than the rate of growth of population through the decades up to 1990. It has given rise and currency to the notion that the country has achieved 'self-sufficiency' in foodgrain. The idea that India is self-sufficient in foodgrain is, however, not entirely unproblematic.

The objectives of self-sufficiency in foodgrain production, price stability and ensuring provision of foodgrain at reasonable prices to enable universal access continue to be highly relevant to India. However, there have been significant changes in the environment in which Indian agriculture operates. Following the adoption of reform policies since 1991, Indian farmers have become exposed to deflationary macroeconomic policies, volatile international prices, decreasing access to as well as more expensive institutional credit, reduction in public investment resulting in the stagnation of agricultural growth and productivity and a near collapse of extension services. These developments pose new challenges for policies concerning food security.

Currently, the main food security safety nets include:

1) The so-called Targeted Public Distribution System (TPDS),

2) Supplementary feeding programmes such as the Integrated Child Development Services (ICDS), the national programme of nutritional support to education, also known as the Mid-Day Meals Scheme (MDMS) in primary schools (now under extension to secondary schools) and food support to the 'poorest of the poor', known as *Antyodaya Anna Yojana* (AAY) and

3) Food-for-Work schemes (Ramachandran, N, 2004) as also programmes of food distribution to old and destitute persons and supplementary nutrition for adolescent girls.

Policies to boost domestic production of foodgrain seek to address the availability aspect of food security. Maintenance of central buffer stocks through bodies like the FCI, is aimed at achieving foodgrain price stability. Our key focus in this report will be on the TPDS, ICDS and MDMS in India. Our argument is largely based on the fact that in a country where a large majority of the rural population are poor and lack access to adequate livelihoods, one of the most important ways to ensure that these vulnerable people have access to food is through public provisioning of food and foodgrain. Furthermore, recognising the extent of problems like undernutrition and malnutrition, alongside poor infrastructure to effectively target specific vulnerable populations, multi-pronged lifecycle based nutrition interventions have an important role to play in ensuring food security in India[7].

1.4.1 Food as a human right

A more recent development in the effort to achieve food and nutrition security in India has been the intervention of the Supreme Court in the form of a series of directives to Central and State Governments to implement, within stipulated time periods, programmes meant to eliminate undernutrition and malnutrition (Ramachandran, P, 2004). The judicial intervention rose from a public interest litigation filed by the People's Union for Civil Liberties (PUCL).

The Right to Food Campaign, which has been closely associated with the litigation and subsequent actions and initiatives, is an important development in this context. This campaign draws from a more recent approach to the problem of food insecurity in India, that is, of the human right to food. This approach argues that in international law, the right to food has been recognised through various agreements and conventions such as the Universal Declaration of Human Rights (UDHR), the International Covenant on Economic, Social and Educational Rights (ICES) and specific conventions like the Convention on the Elimination of all forms of Discrimination Against Women (CEDAW), Convention on the Rights of the Child (CRC) and Genocide Prevention (Anand, 2004). It further argues that India as a signatory to some of these covenants like CEDAW has the legal obligation to ratify the terms of the treaty/ies it has signed (the landmark case of Visaka vs. Rajasthan in 1997 addressed this issue). Also, it has been argued that Article 21 of the Indian Constitution, which states that "everyone has a right to a standard of living adequate for the health and well-being of himself and his family, including food" clearly outlines the obligation of the State to guarantee the citizens of India their right to food. This suggests the need to increase the role of the State in food subsidies, meal provision schemes and other policy interventions. Further, it is not enough that the State create policies (which in this case constitute the remedies available to the rights holders themselves) to alleviate food insecurity but that it must also identify the nature of the rights holders and their rights, the nature of the duty-bearers and their obligations and most importantly identify and describe the nature of the agents of accountability, and the procedures through which they ensure that the duty bearers meet their obligations to the rights holders (Kent, 2002).

The success of the Right to Food Campaign, together with other social forces, in using the

[7] It has been recognised that if the current knowledge and infrastructure is used to identify vulnerable individuals in critical points in the lifecycle and target health and nutrition interventions to all individuals in these stages, it might be possible to achieve significant improvements in health and nutrition status of the population (Ramachandran, P, 2004).

judicial apparatus to universalise the MDMS across India and also more recently in advocacy work for the passage of the National Rural Employment Guarantee Act (NREGA), as well as judicial intervention to universalise ICDS, have highlighted the State's welfare obligations to its people.

The nature of the Indian State in terms of its political economy has been a key factor in its failure to implement its oft-declared pro-poor commitments. Nevertheless, it is clear that there has been a democratic space for debating and to some extent promoting the development of a distinct food policy in India that has to contend with the constitutionally mandated rights of citizens to life, and hence, by implication, to food.

1.5 Key Issues in Food Security

In this section, we discuss some of the key issues pertaining to food security in India under the headings of availability, access and absorption. The analytical separation of the problems of food and nutrition insecurity in India into these three dimensions is a useful exercise not only to understand the problems in themselves but also to understand how policies have been framed to address the problems.

1.5.1 Availability

There has been a great deal of debate regarding whether India has achieved a status of food self-sufficiency, where the availability of foodgrain, especially at the national level, is not a problem. India is the third largest producer of cereals, with only China and the USA ahead of it. Between 1950 – 51 and 2006 – 07, production of foodgrain increased at an average annual rate of 2.5 per cent compared to the growth of population, which averaged 2.1 per cent during this period. As a result, there were hardly any imports between 1976 – 77 and 2005 – 06, except occasionally. The rate of growth of foodgrain production however decelerated to 1.2 per cent during 1990 – 2007, lower than the annual rate of growth of population at 1.9 per cent. The per capita availability of cereals and pulses consequently witnessed a decline. The per capita consumption of cereals was observed to have declined from a peak of 468 grams per capita per day in 1990 – 91 to 412 grams per capita per day in 2005 – 06, indicating a decline of 13 per cent during this period (Economic Survey, 2007 – 08). Some scholars have suggested that the decline in the demand for cereals is arising from the diversification of the Indian diet away from foodgrain as well as declining energy requirements of the rural working population on account of improved rural infrastructure and mechanization (Deaton and Drèze, 2008; Rao, C H H, 2006), and this has sometimes contributed to the view that we need not be overly concerned with raising foodgrain output levels.

Table 1.1 provided here shows that India's policy commitment (notwithstanding vacillations) to ensuring aggregate availability, indicated by the emphasis on foodgrain production from the 1950s and self-sufficiency from the late 1960s, did lead to per capita net availability of foodgrain increasing steadily, with some fluctuations, through the period from 1950s to mid-1990s, with the role of imports declining from the late 1960s[8]. However, the table also shows the emerging availability crisis, with foodgrain availability declining by 4.5 per cent between the two periods 1991 – 2000 and 2001 – 2005, after having a lower rate of increase in the period 1991 – 2000 as compared to that in the period 1981 – 1990.

[8] Several scholars have examined the question of whether India will be self-sufficient in foodgrain production in the future. There are considerable differences in their projections due to the following elements: population growth, per capita direct consumption and the requirement for animal feed (Dev et. al., 2003).

Table 1.1 Changes in the Per Capita Net Availability of Foodgrain per day

Decade	**Average** (grams per capita per day)	Percentage Change from Previous Period
1951 – 1960	429.83	—
1961 – 1970	447.53	+ 4.12
1971 – 1980	442.20	- 1.19
1981 – 1990	464.20	+ 4.98
1991 – 2000	475.51	+ 2.44
2001 – 2005	454.20	- 4.50

Note: The net availability of foodgrain is estimated to be gross production less seed, feed and wastage and exports plus imports and drawdown of stocks.

Source: Calculated from Agricultural Statistics at a Glance, (GoI, 2007b).

There have been variations in the net availability of foodgrain per day throughout the five decades. The decade from 1951 to 1960 saw a rise in foodgrain availability largely due to various policies of the Government of India, which focused on raising agricultural productivity and thus domestic production of foodgrain. There was also a significant increase in the area of land under foodgrain cultivation (Krishnaji and Krishnan, 2000). This decade also saw reliance on foodgrain imports, in particular wheat. The period from 1961 to 1970 saw a decline in foodgrain availability, which was partly due to severe droughts in the mid-1960s, leading to wheat imports from the USA under Public Law 480. One of the important outcomes of this crisis situation, to which reference has already been made, was the adoption, promotion and implementation of GR technologies as well as large-scale public investment in agriculture and the creation of a number of anti-poverty programmes, leading to a dramatic rise in foodgrain availability during the decade of the 1980s. The mandate of the FCI setup in 1965 included building up sufficient food stocks to act as a buffer during times of acute scarcity.

1.5.1.1 Foodgrain availability concerns

The data on area, production and yield of foodgrain in India presented in Table 1.2 show a pattern of clear deceleration in the rate of growth of foodgrain output through the 1990s, followed by stagnation since 1999 – 2000.

The data suggest that complacency about India's foodgrain situation and claims of self-sufficiency are clearly unwarranted.

While production levels were unimpressive in relation to targets, other elements of government's food management policy led to a huge increase in foodgrain stocks with the FCI between 1998 and 2001, with the stocks, in million tonnes (MT), rising from 18.12 at the end of March 1998 to nearly 65 by December 2001 before declining to 32.81 by the end of March 2003 and 20.65 a year later. Increases in procurement, combined with large reduction in offtakes under the TPDS resulting from the new policy of targeting Public Distribution System (PDS) to the officially defined 'poor' and dual pricing which involved a rise in the price of foodgrain for both the households below the official

Table 1.2 Area, Production and Yield of Foodgrain, 1991 – 92 to 2006 – 07

Year	Area (Million Hectares)	Production (Million Tonnes)	Yield (Kg / Hectare)
1991 – 92	121.87	168.38	1382
1992 – 93	123.15	179.48	1457
1993 – 94	122.75	184.26	1501
1994 – 95	123.86	191.50	1546
1995 – 96	121.01	180.42	1491
1996 – 97	123.58	199.44	1614
1997 – 98	123.85	192.26	1552
1998 – 99	125.17	203.61	1627
1999 – 00	123.10	209.80	1704
2000 – 01	121.05	196.81	1626
2001 – 02	122.78	212.85	1734
2002 – 03	113.86	174.77	1535
2003 – 04	123.45	213.19	1727
2004 – 05	120.00	198.36	1652
2005 – 06	121.60	208.60	1715
2006 – 07	124.07	211.78	1707

Source: Agricultural Statistics at a Glance, 2006 – 07, Ministry of Agriculture, GoI

poverty line and those considered to be above it, led to large stockpiles of foodgrain — rice and wheat — with the FCI over the period 2000 – 03. We shall return to this issue in the discussion on the PDS in Chapter 3. With the policy goal of limiting the level of the fiscal deficit and the presumed 'need' to reduce food subsidies, the government preferred to export foodgrain at below poverty line prices rather than carry out a massive food-for-work programme using the available food stocks – a policy course that could have led to the creation of durable assets in rural areas and enhanced the purchasing power of the rural poor. It reported that the government exported close to 22 MT of foodgrain between June 2002 and September 2003 at below poverty line prices, even as rural India reeled under a severe drought and there were reports of starvation deaths (Chandrasekhar and Ghosh, 2005; Drèze, 2004; Patnaik, 2004). Even as availability was becoming a question mark, access to foodgrain was being made harder for the poor. It was only after the devastating impact of two successive years of poor harvests in 2003 and 2004, large exports at low prices and the implementation, under pressure from mass movements following the electoral verdict of 2004, of large scale employment schemes with a grain wage component, that the stocks with the FCI came down to 17.97 MT at the end of March 2005. With little increase in procurement prices, especially of wheat, since 2002, and poor procurement in 2005 and 2006, the stock situation has now turned critical, with the stock level of wheat at 2 MT as of April 1, 2006 being below the minimum buffer stock norms. This situation has led to import of wheat on a very large scale and at higher prices than that offered to the Indian farmer in the years 2006 and 2007.

In the context of rising foodgrain stocks with the FCI, it was argued that high minimum support prices set by the FCI had encouraged farmers to contribute more towards FCI stocks leading to an all time high level of stocks (GoI, 2005). Critics of reforms, on the other hand, linked the large increase in stocks, to both, (i) increase in procurement prices at a time when domestic agriculture was facing declining market prices for many farm products because of the onslaught of trade liberalisation; and (ii) the decline in demand for foodgrain owing to the loss of purchasing power in rural India caused by deflationary macroeconomic policies, resulting in loss of livelihoods, near-stagnant rural employment levels, the sharp rise in cereal issue prices over the decade of the 1990s and the dual pricing policy in the targeted PDS which literally drove out the so-called Above Poverty Line (APL) households from the PDS, even as it made grain more expensive for the Below Poverty Line (BPL) households as well (Chandrasekhar and Ghosh, 2005; Patnaik, 2004).

Recent developments suggest that the criticism of the government's complacency regarding the situation of foodgrain availability may be right. Vyas (2005) points out that increases in the foreign exchange reserves held, multiple sources of foodgrain supplies and movement towards free trade have all reduced the urge to maintain food self-sufficiency. This is also reflected in the consistent failure to achieve plan targets on foodgrain output levels in the last decade or so. During the Ninth Plan period from 1997 – 98 to 2001 – 02, the target for foodgrain production was 1,052 MT but the achievement was only 1,014.5 MT. The situation worsened during the Tenth Plan period from 2002 – 03 to 2006 – 07. The foodgrain target was missed in every year of the Plan, and the overall achievement at 1,006.97 MT was short of the target of 1,100.10 MT by a whopping 93 MT (GoI, 2006b).

It is important to note that the idea that India's foodgrain needs can be met by appropriate recourse to imports as and when required is not accepted by the High Level Committee on Long Term Grain Policy set up by the Government of India in 2001[9].

1.5.1.2 Stocks and imports

The situation in respect of foodgrain stocks has changed dramatically since 2002. After reaching a high of around 65 MT in late 2001, the foodgrain stocks with the FCI began to decline. This was partly on account of some lowering of prices for APL households leading to improvement in offtake from the TPDS, partly on account of implementation of government schemes of rural employment and welfare involving the provision of grain to eligible households and partly on account of exports of grain in 2002 – 03 (Table 1.3).

The sharp decline in foodgrain stocks with the FCI and the modest performance of domestic agriculture in terms of foodgrain output in the period since 2000 has led to a situation where the food security situation even in respect of availability is far from comfortable. Interestingly, instead of the government taking action to enhance food

[9] The Committee, in its report, observes as follows:

"Policies to encourage and assist the production and distribution of foodgrain, especially cereals, remain integral to the development strategy of the country... India must continue to plan for cereals self-sufficiency. This is a strategic necessity since India accounts for about 15 per cent of total world consumption of cereals and since world production and trade is highly distorted by policies of rich countries". It also adds: "There can be no complacency about a system to protect consumers from possible domestic shortages which might coincide with high world prices". It further notes, "Most States are deficit (in cereals)… We expect deficits to enlarge in Southern and Western regions of India during the next two decades. If surpluses decline in Punjab and Haryana, it will be essential to realise the potential for production surpluses in Central and Eastern India where presently prices are below full costs of production".

Table 1.3 Stocks of Rice and Wheat under Public Distribution System, 1990 – 91 to 2006 – 07

Year	Stocks in Million Tonnes		
	Rice	Wheat	Total
1990 – 91	10.21	5.60	15.81
1991 – 92	8.86	2.21	11.07
1992 – 93	9.93	2.74	12.67
1993 – 94	13.55	7.00	20.54
1994 – 95	18.08	8.72	26.80
1995 – 96	13.06	7.76	20.82
1996 – 97	13.17	3.24	16.41
1997 – 98	13.05	5.08	18.12
1998 – 99	12.16	9.66	21.82
1999 – 00	15.72	13.19	28.91
2000 – 01	23.19	21.50	44.98
2001 – 02	24.91	26.04	51.02
2002 – 03	17.16	15.65	32.81
2003 – 04	13.07	6.93	20.65
2004 – 05	13.34	4.07	17.97
2005 – 06	13.70	2.00	15.70
2006 – 07	13.20	4.70	17.90

Source: Economic Survey, GoI, Various Issues.

production and ensure procurement, the impending crisis is sought to be addressed through increasing recourse to foodgrain imports. Some analysts seek to provide a justification for this on the grounds that in an increasingly open economy, the market will take care of food availability. As against this, some commentators have questioned whether this new policy stance suggests that India will no longer focus on domestic production to ensure food security but instead revert to a 'ship to mouth existence' (Shiva, 2006). One scholar argues that the volatility of international prices, the political implications of dependence on external sources for essential commodities and the uncertain nature of foreign exchange reserves as well as the opportunity costs in terms of livelihood insecurity are all reasons why India should not abandon the policy of food self-sufficiency (Vyas, 2005). Rhetoric apart, it seems highly plausible that government policy is being dictated by the central concern of reduction in the fiscal deficit, brought about not by revenue generation but by expenditure reduction. This entails reduction in subsidies even as 'incentives' to investors, foreign and domestic, lead to loss of tax revenue. The reduced role envisaged for the government (and by implication, the larger role of private trade and investment in agriculture including foodgrain) appears driven by the presumed need to reduce food subsidy. An important point that needs to be assessed is the impact this new policy – which implies less procurement by the State and at less favourable prices than earlier, will have on domestic

production of cereals and on whether farmers keep their land under cereal production rather than diverting more land to non-cereal cash crop farming. This will have significant repercussions for the role of the FCI and ultimately the effective functioning of the PDS in ensuring the countrywide availability of foodgrain.

1.5.1.3 Regional concentration in foodgrain production

We have seen that, since 1996 – 97, foodgrain output has been practically stagnant. Another aspect of concern with regard to availability, given economic and physical constraints to transportation of foodgrain across the country, is the regional distribution of foodgrain output in India. The fact that certain States are deficit in food production and therefore add to the concerns of foodgrain availability. Issues of the uneven spatial distribution of production of foodgrain impinging on the food security of vulnerable groups should clearly be a matter of policy concern. In the period since the mid-1960s, the regional distribution of foodgrain has become more skewed. For instance, between the triennium ending 1962 and that ending 1986, the share of the North-Western region, consisting of Punjab, Haryana and Uttar Pradesh, in the total foodgrain output of India rose from 26.1 per cent to 39.8 per cent while that of all other regions declined. The share of the West-Central region consisting of Rajasthan, Gujarat, Maharashtra and Madhya Pradesh declined sharply from 29.1 per cent to 23 per cent (Patnaik, 1991). The trends of regional concentration in foodgrain output have not been reversed in the period since, although West Bengal has seen a much higher rate of growth of foodgrain output following land reforms and other supportive government measures including a significant increase in area under irrigation. Inter-temporal fluctuations in foodgrain output have also not come down.

1.5.1.4 Factors underlying the stagnation in foodgrain output

Several factors have led to the observed decline in output growth and the subsequent decline in foodgrain availability. The growth of foodgrain production during the 1970s and 1980s was largely due to institutional efforts in raising the levels of technology used in agriculture through research and extension, investments in rural infrastructure and human capabilities, credit support, procurement at minimum support prices and the strengthening of supportive institutions like the FCI. Following the adoption of structural adjustment policies from the early 1990s, there has been a focus on expenditure reduction, resulting in decline in public investment in and other forms of support to the agricultural sector. As against an average of 3.8 per cent of the country's Net National Product (NNP) spent on rural development per year during the seventh plan period 1985 – 90, the share of spending on rural development was down to 1.9 per cent of NNP in 2000 – 01 and rose only to 2.3 per cent in 2004 – 05[10]. If infrastructure expenditure (all spending on energy and transport including urban) is added, the corresponding figures are 11.1 per cent per year for 1985 – 90, 5.8 per cent in 2000 – 01 and 6.2 per cent in 2004 – 05 (Patnaik, 2006). Patnaik estimates that in constant 1993 – 94 prices, about Rs 30,000 crore less was being spent by 1999 – 2000 compared to 1990 – 91. As a result of the decline in public investment, expansion in irrigation, growth in input usage and technological improvement, have all slowed down during the 1990s. This is further compounded by low public investment on agricultural research.

[10] Rural development spending is defined to include plan outlays of Centre and States under the five heads of agriculture, rural development, irrigation and flood control, special areas programmes, and village and small industry.

In terms of natural or environmental constraints, one of the most important constraints in recent years pertains to the availability of water. The per capita availability of water has declined from 5000 m^3 in the 1950s to 2000 m^3 at the turn of this century (Sagar, 2005). Agriculture accounts for 80 per cent of the water withdrawal and estimates suggest that the availability of water for agricultural use is likely to decline by 20 per cent by 2020 (ibid.). A major challenge therefore comes from the rain-fed ecosystem and the over-exploitation of groundwater resources. This has been affecting the ecological balance of areas like Rajasthan and Gujarat and has serious implications for the production of irrigated crops.

1.5.1.5 Regulating the uneven spatial distribution of foodgrain – the importance of the PDS

The problem of highly uneven regional distribution of foodgrain output across the States in India is further accentuated by the poor integration of markets across the country. This suggests that there are serious limitations to private trade as a mechanism for ensuing food security. It also implies that the State must play a key role in ensuring food security through appropriate food management policies including intervention in foodgrain markets. The PDS is an important policy instrument in this context. It has the critical function of providing foodgrain to people in foodgrain deficit areas at affordable prices[11].

Kerala provides a particularly clear example of the importance of the PDS in ensuring the physical availability of foodgrain. For the year 1999 – 2000, the per capita net production of cereals in Kerala was 58.8 grams per day per person, whereas consumption was 324.1 grams per day per person. However, the per capita net availability of cereals, including the PDS grains supplied by the Centre but exclusive of net imports from outside of Kerala through private sources, was 250.4 grams per day per person[12]. The balance was presumably met through imports and drawing down of stocks. This suggests that much of the deficit of cereal production to consumption was made up by the distribution of PDS grains with the remaining deficit being taken care of by private trade. Thus, it is patent that the PDS has a significant role to play in ensuring food and nutrition security in India in terms of physical availability at the very least. Other nutrition programmes such as the MDMS and the ICDS address the need for a lifecycle approach to food and nutrition security.

In sum, foodgrain production is a vital element to ensure food and nutrition security in India. Moreover, domestic production and food self-sufficiency have been shown to play an important role in stimulating future food production in the country as well as making sure that India does not fall foul of variable international prices and, most importantly, does not become dependent on foreign sources for such vital commodities. It is therefore important that the agricultural sector receive adequate investment and stimulation to increase production and productivity of foodgrain. Availability of foodgrain, here examined in the physical sense, is a key element in ensuring food and nutrition security. Without sustained increases over time in domestic foodgrain production, this is an impossible task.

1.5.2 Access

Aside from availability, a central aspect of food and nutrition security is the ability of individuals to have access to available food stocks. The mere availability of food in the country is

[11] The PDS is taken up for detailed discussion in Chapter 3 of this Report.

[12] All figures calculated using NSSO 55th round data and Census 2001.

obviously not sufficient to ensure access to food for all. Economic access of a household to adequate food depends on its purchasing power including the implicit value of its own production if any. Access to food is primarily a matter of purchasing power, and is therefore closely linked with the issues of access to productive assets and livelihood opportunities. Within the household as well as in the larger community, access is also characterised by gender inequality. Caste too plays a role in determining both physical and economic access.

One of the key indicators used by many scholars and commentators to measure access to food in India is that of foodgrain consumption. Data on physical quantities of cereals, pulses and other key items of food consumed by a household over a definite time period is available at regular intervals of time from large-scale sample surveys carried out by the National Sample Survey Organization (NSSO). Based on standard conversion formulae, the calorie and protein equivalents of these physical quantities are also available from the NSSO. Since household size is also available, per capita per day consumption of key food items as well as per capita per day calorie and protein intakes can also be worked out. In fact, NSSO provides the distribution of households by monthly consumer expenditure and the associated mean levels of intake of key food items and calorie and protein intakes. Using a medically specified norm, it is possible to work out the percentage of households in rural or urban areas failing to meet the specified norm, say, in terms of calorie intake. This enables one to calculate the percentage of the undernourished population to total at various points in time.

The NSSO data reveal that the per capita consumption of cereals has been declining since the early 1970s. Between 1972 – 73 and 2004 – 05, the share of cereals in total consumer expenditure reportedly fell from 41 per cent to 18 per cent in rural areas and 23 per cent to 10 per cent in urban areas. The per capita monthly consumption of cereals declined between 1993 – 94 and 2004 – 05 from 13.4 kg to 12.1 kg (9.7 per cent) in rural areas and from 10.6 kg to 9.9 kg (6.6 per cent) in urban India.

Three significant propositions figure in the attempts to explain the phenomenon of declining demand for cereals. Some argue that declining demand for cereals is due to dietary diversification. An alternative view is that declining demand for foodgrain is due to loss of purchasing power by the poor largely due to deteriorating livelihood security. This view is consistent with the view that declining demand for foodgrain is due to rising foodgrain prices consequent to the adoption of Structural Adjustment Policies (SAPs) which involve deflationary macroeconomic policies and the opening up of the agricultural sector.

1.5.2.1 Declining demand and dietary diversification

The theoretical basis for arguing for dietary diversification comes from two laws that describe certain changes that occur following economic development of an area. The first is Engel's Law, which states that as income increases, beyond a point, the share of expenditure on food declines. The second is Bennett's Law, which states that as income increases, consumers typically switch to a more expensive diet, substituting quality for quantity. This would suggest that the consumption of vegetables, fruit, milk and meat should increase.

Basing themselves implicitly or explicitly on these 'laws', some scholars have argued that the striking decline in cereal consumption can be attributed to changes in consumer tastes and preferences towards superior non-cereal foods, particularly milk and milk products, vegetables and fruits etc. as well as other non-food items. It has also been argued that –

> The decline in the cost of obtaining access to non-foodgrain items would

> raise the real income for large sections of rural consumers; the decline in consumption on account of reduced physical labour would be associated with freedom from drudgery; higher nutritional efficiency would be associated with improved health and environment; and even the reduced dependence of rural workers on cooked meals from the rural rich should be welcome, as it would enhance human dignity. It is thus interesting – though it may appear paradoxical – that, up to a point a reduction in the intake of foodgrain on certain counts should in fact be associated with improvement in human welfare (Rao, 2000).

As against the attribution of the declining demand for foodgrain to dietary diversification arising from rising incomes or lower energy requirements of the population on account of improvements in infrastructure, mechanisation, improved access to health and so on, other scholars have suggested that, in the case of the poor households, the decline represents a severe nutritional crisis.

Utsa Patnaik argues that the thesis of dietary diversification based on Engel's law invoked to explain declining cereal intakes is based on a mistaken interpretation of Engel's law which has led to the belief amongst many scholars as well as bureaucrats that there is nothing wrong if we see falling availability/absorption of foodgrain per head. "It is a misconception because Engel was referring to the fall in the share of food expenditure for the direct consumption of grains as incomes rises, and not to the total absorption of grains which includes both direct use as well as indirect use as feed for livestock (to produce milk, eggs, meat and so on), and as industrial raw material" (Patnaik, 2004)[13].

The second point made by some commentators is that the decline in calorie intake levels is not a reflection of a decreasing calorie (energy) requirements arising from increasingly sedentary lifestyles. This may be a problem amongst the urban upper classes but on the whole the general decline observed with regard to average cereal consumption cannot be attributed to such presumed lower energy requirements. It is important to note that despite increasing mechanisation of agriculture, improvement of infrastructure such as roads and public transport, the levels of such improvement are not manifestly high. Nor have they eliminated much of the drudgery associated with current agricultural practices[14].

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[13] Defining absorption to include direct consumption of foodgrain as well as grain converted into processed foods, animal feed, industrial products etc., Patnaik points out that China with about double India's per capita income absorbed 325 kg per capita of foodgrain in the mid-1990s compared to India's less than 200 kg. Mexico absorbed 375 kg per capita, high income Europe absorbed over 650 kg per capita and USA absorbed the maximum, 850 kg per capita (Patnaik, 2004).

[14] If one examines the progress of farm mechanisation we can see that there has been a significant increase in the number of tractors per 1,000 hectares from 0.7 in 1971 – 72 to 13.8 in 2000 – 01. The number of power tillers per 1,000 hectares increased from 0.010 in 1971 – 72 to 0.65 in 2000 – 01. However, these figures also make it clear that while mechanisation is certainly occurring, the level of mechanisation is still very low. A counter-argument that could be made is that these figures just show the number of tractors and power tillers owned but says nothing about the extent of use of these machines. It is a common phenomenon across rural India that during harvest seasons smaller farmers often hire in tractors and tillers from the owners of these machines to carry out their work. However, even allowing for this, given the low absolute numbers of these machines, their utilisation would be constrained by their limited availability. Moreover, to the extent that access to fuel, fodder and other resources which earlier were common property resources have become both more difficult and commercialised, the rural poor will clearly not require less energy or less income to meet the most minimum of needs. Thus, the argument made that calorie consumption levels are declining due to decreasing energy requirements does not appear self-evident. One would need more direct evidence on activity levels of various segments of the rural population to arrive at definite conclusions in this regard, as pointed out by Deaton and Drèze (2008), who are sympathetic to the hypothesis that reduced calorie intakes may reflect decreased energy requirements, on account of both reduced effort levels and improved health status.

Having noted that the declining demand for foodgrain in rural India may not be a simple reflection of increasing welfare of the population nor easily explained by dietary diversification and/or decreasing energy requirements, we now turn to the issue of livelihood security.

1.5.2.2 Livelihood security and its impact on access to food – the role of poverty

One of the key underpinnings of livelihood security and its relationship to food security is the concept of sustainable livelihoods. Chambers and Conway propose the following definition of a sustainable livelihood: "A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living: a livelihood is sustainable which can cope and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation; and which contributes net benefits to other livelihoods at the local and global levels and in the short and long term (Chambers and Conway, 1991). In order for such a state to be achieved, Chambers and Conway suggest that the following four conditions have to be met: (i) environmental sustainability, (ii) social sustainability, (iii) adequacy of livelihood and (iv) net livelihoods.

Drinkwater and McEwan argue that it is misleading to treat food security as a fundamental need, independent of wider livelihood considerations. Further, they state that livelihoods can be made up of a range of on-farm and off-farm activities, which together provide a variety of procurement strategies for food and cash. Thus, each household can have several possible sources of entitlement, which constitute its livelihood. These entitlements are based on the household's endowments and its position in the legal, political and social fabric of society (Drinkwater and McEwan, 1992). The risk of livelihood failure determines the level of vulnerability of a household to income, food, health and nutritional insecurity. Therefore, livelihoods are secure when households have secure ownership of, or access to, resources and income earning activities, including reserves and assets, to offset risks, ease shocks and meet contingencies (Chambers, 1989).

Unfortunately, not all households are equal in their ability to cope with stress and repeated shocks. Poor people balance competing needs for asset preservation, income generation and present and future food supplies in complex ways (Maxwell and Smith, 1992). People may go hungry up to a point to meet another objective. For example, De Waal (2007) found that during the 1984 – 85 famines in Darfur in Sudan, people chose to go hungry to preserve their assets and future livelihoods. People will tolerate a considerable degree of hunger to preserve seeds for planting, to cultivate their own fields or to avoid selling animals. Corbett (1988), in exploring the sequential ordering of behavioural responses employed in periods of stress, found that in a number of African and Asian countries, preservation of assets takes priority over meeting immediate food needs until the point of destitution.

Thus, food and nutrition security are subsets of livelihood security; food needs are not necessarily seen as more important than other basic needs or aspects of subsistence and survival within households. Food-insecure households juggle among a range of requirements, including immediate consumption and future capacity to produce. Livelihood security or access to adequate livelihoods makes up one of the ways to combat this problem. The three actions of livelihood promotion, livelihood protection and livelihood provisioning, therefore, play a key role in the ensuring of livelihood and ultimately food security.

In India today, we are facing a major crisis of unemployment, which has been reinforced by

declining rural development expenditure[15] and decreasing agricultural growth rates. Rural employment grew at a rate in excess of 2 per cent per annum between 1987 – 88 and 1993 – 94, but grew far more slowly at 0.66 per cent between 1993 – 94 and 1999 – 2000. There has been an increase in the rate of growth of rural employment (1.97 per cent) between 1999 – 2000 and 2004 – 05, as seen from the 55th and 61st rounds of the NSSO, but this has gone along with an increase in self-employment and in informal sector employment, with negative implications for quality and terms of employment and average earnings. All this suggests a severe contraction in the availability or adequacy of livelihood opportunities in the rural sector. This has also severely impacted upon households' entitlement to food, particularly through constraining the choices open to them to transform their original endowment set into an entitlement set containing enough food.

As Nira Ramachandran (2004) states, the long-term solution to the problem of food security must necessarily be sought through sustainable livelihoods, "The strategy to overcome this problem includes short-term interventions to raise the purchasing power of the poor through endowments of land and non-land assets, and by generating employment opportunities as well as long term growth-mediated interventions to improve food availability and raise incomes". One of the important steps to mitigate this crisis of employment in the rural sector has been the successful inception of the NREGA, although allocations in this regard have been very inadequate.

Access to food is ultimately tied up with access to either decently paid wage employment or to ownership of productive assets that can generate a decent level of earnings. These involve fundamental questions of political economy including the need for redistributive land and asset reforms. Meanwhile, it is important to note that while access to earnings through self or wage employment can enable access to food, it cannot ensure food and nutrition security if effective biological utilisation of food does not occur. The reference here is to the absorption aspect of food security. We thus find, for instance, that States like Kerala and Tamil Nadu, with much lower levels of per head food intake and hence of calorie intake, perform much better in terms of nutritional indicators than States like Bihar or Orissa which show much higher levels of food intake even for corresponding expenditure classes (see Chapter 2). Absorption or effective biological utilisation of food depends crucially on such factors as access to safe drinking water, sanitation and hygiene. Let us turn to a brief discussion of this dimension of food security in the Indian context.

1.5.3 Absorption

Along with efforts to enhance availability and access to foodgrain, it is also necessary to address the problem of absorption of food. As Tripathy states, "[C]reating additional employment opportunities to increase income of some of the vulnerable poor may be a necessary condition to improve access to food but not a sufficient condition to substantially reduce hunger and malnutrition" (Tripathy, 2004).

The indicators of absorption are outcome indicators that indicate the health and nutrition status of the population. India houses a huge population of malnourished and several studies have established that high levels of malnutrition have a negative impact on productivity and economic growth.

[15] Utsa Patnaik (2004) calculated the proportion of rural development expenditure which includes expenditure on agriculture, rural development, special areas programme, irrigation, flood control, village industry, energy and transport. She found that, as a proportion of Gross Domestic Product (GDP), this had declined from 11.7 per cent in 1991 – 92 to 5.9 per cent in 2000 – 01.

According to UNESCO's Global Monitoring Report, 2007, 47 per cent of India's children are malnourished. As per the latest round of NFHS-3, 39 per cent of rural women in the 15 – 49 age group suffer from chronic energy deficiency and 58 per cent are anaemic. Among rural children in the 6 – 35 months category, 81 per cent are anaemic and 41 per cent are stunted, 49 per cent are underweight and 20 per cent suffer from wasting – all indicators of chronic and acute undernutrition. Stunted growth is a primary manifestation of malnutrition in early childhood including malnutrition during fetal development brought on by a malnourished mother and the effects are irreversible. Infant mortality rates (IMR) have shown a decline but are still on the high side. The NFHS-3 estimate of infant mortality is 57 deaths per 1,000 live births, compared with the NFHS-2 estimate of 68 deaths per 1,000 live births and the NFHS-1 estimate of 79. Still, more than one in 18 children die within the first year of life, and more than one in 13 die before reaching age five. Infant and child mortality rates are higher in rural areas. In 2001 – 05, the IMR was 50 per cent higher in rural areas (62 deaths per 1,000 births) than in urban areas (42 deaths per 1,000 births). Clearly, concerted efforts are needed to break the vicious circle (mother – child – mother) of malnutrition among the poor.

The high levels of malnutrition are pointers to the poor state of maternal and child healthcare services in the country. Only 44 per cent of children in 12 – 23 months category were reported to be fully vaccinated, and five per cent had not received any vaccination (NFHS-3). As Sen (2003) and others point out, aspects such as health and sanitation facilities are the key factors that affect the absorption of food. Ill health or endemic disease can perpetuate undernourishment. Morbidity, for instance, reduces the ability of a person to take food. Thus some of the important non-food factors that affect undernutrition and malnutrition are access to health services, access to quick and effective medical attention, knowledge of nutrition, appropriateness or otherwise of nutrition practices pertaining to dietary patterns, childcare, sanitary arrangements, provision of safe drinking water as well as water for other needs and eradication of infectious epidemics. The India Infrastructure Report 2007 highlights the lack of adequate infrastructure and personnel at public healthcare facilities as major problems on the rural health infrastructure front. However, in the light of data constraints and the limited scope of the present exercise, this report will focus on the problems of access to safe drinking water and sanitation facilities on the health infrastructure front.

Water-related diseases are the single largest cause of sickness and death in the world and disproportionately affect poor people (Chakravarty, 2004). Waterborne diseases are caused by viral or bacteriological contamination of water. The contamination can occur either due to unsanitary conditions or in homes where it is not stored and/or used properly (GoI, 2003b). The felt impacts due to the unavailability of safe drinking water and sanitary facility are multifold: (i) It increases exposure to infections such as diarrhoea and worm infestation; (ii) It leads to unnecessary loss of energy and time particularly if access to water and sanitary facilities are located far away from homes; and (iii) It leads to problems of toxicity such as contamination of water with arsenic and fluoride due to over-exploitation of water resources (ibid.).

In India there are significant inter-State variations in terms of sanitation and water facilities. Dealing first with sanitation facilities, we see that access to toilet facilities is much poorer in rural areas and amongst the Scheduled Caste and Scheduled Tribe households (National Human Development Report, 2001). According to data from the Census of 2001, 64 per cent of all households and 78 per cent of rural households have no access to toilet facilities.

At the State level, the data indicates that the proportion of households having access to toilet facilities within the premises is much lower than the national average in larger, more populated and poorer States. These include Andhra Pradesh, Bihar, Madhya Pradesh, Orissa, Rajasthan, and Uttar Pradesh, in all of which the figure is above 80 per cent. This is in contrast to States like Kerala where 81 per cent of household have access to toilet facilities.

According to the Census, if a household has access to drinking water supplied from a tap or a hand pump or a tube well situated within or outside its premises, it is considered as having access to safe drinking water. The figures for access to safe drinking water are much better than that of access to sanitary facilities. Almost 73 per cent of households in the rural areas have access to safe drinking water[16] (Census, 2001).

India's finite and fragile water resources are stressed and depleting while different sectoral demands are rising. At Independence, the per capita water availability was over 5,000 cubic metres per year. By 2002, this figure has declined to 2,000 cubic metres per year. The actual usable quantity is around 1,122 cubic metres per year. High extraction of ground water has given rise to compounded arsenic and fluoride contamination and saline ingress (GoI, 2003b).

All this, coupled with poor primary healthcare facilities and infrastructure, does not bode well for the state of food insecurity in rural India.

1.6 Aims and Outline of This Report

There are essentially three main tasks that this report seeks to address. The first task, addressed in the introductory chapter, is to outline the development of the term 'food security' and its use as a conceptual organising principle to examine various problems. As part of this exercise, we have also tried to highlight the key issues that dominate the debate on food and nutrition security studies in India.

The second task, addressed in Chapter 2, looks at the development of a food insecurity index with a set of indicators, which describes the relative positions of the Indian States in terms of their food and nutrition insecurity status. The choice of indicators and the relative position of the States under each have been discussed in detail. Maps have also been produced showing the relative position of the States at two different points of time for each indicator and for the composite food insecurity index combining the set of indicators, highlighting the performance in terms of improvement or deterioration. This is a follow up exercise from the FIARI.

The third task, addressed in the three chapters that follow (Chapters 3, 4, 5), has been as indicated earlier, to look at measures taken by the State towards provisioning for food security, their impact and how they can be improved. The State[17] is an important actor in maintaining food and nutrition security as many of the requirements for sustaining a food and nutritionally secure population are directly under State control such as the provision of clean and safe drinking water, the provision of

[16] In contrast to its position in terms of sanitary facilities, Kerala fares the worst in terms of access to safe drinking water (23.4 per cent of households) due to its reliance on wells, which are not considered a safe source of water. This is of course misleading and reflects the weakness of the measure. In Kerala, the habit of boiling water before drinking is universal, and therefore recourse to groundwater need not indicate lack of access to safe drinking water.

[17] Although the State may be the key actor in this sense, other actors and institutions are also involved, including civil society at large (not confined to 'NGOs') and the private sector.

adequate healthcare facilities, the provision of sanitation and sewage facilities, the provision of public investment for developing key infrastructure and ensuring the physical and economic access of vulnerable people to food. The State has sought to address the problem of chronic hunger and food insecurity both through policies aimed at increasing food output and by anti-poverty programmes aimed at improving access through enhancing the purchasing power of the poor. Several schemes of food distribution are of special importance in this regard. The PDS, ICDS and the MDMS are among the key food delivery schemes in operation. This Report does not cover the entire gamut of issues in this regard, but focuses specifically on the three components of the public food delivery system mentioned here.

The sixth and final chapter presents our conclusions and policy suggestions to continue to strive towards the achievement of universal food and nutrition security in India.

The report is therefore structured in three parts: Part I (Chapters 1–2) deals with the understanding of food and nutrition security, the key issues in the Indian context, the prevailing situation in India and the relative position of the different States on the food insecurity scale developed on the basis of a chosen set of indicators. Following from that, Part II (Chapters 3–5) focuses on the public food delivery systems and their performance in the backdrop of the State's role in ensuring food and nutrition security. Part III (Chapter 6) is devoted to conclusions and recommendations.

Chapter 2

Mapping Food and Nutrition Insecurity

This chapter is devoted to an updating of the attempt made in FIARI (MSSRF-UNWFP, 2001) to develop an index of rural food and nutrition insecurity, for India and its major States. The focus in this Report is on chronic food insecurity. Issues such as sustainability and transitory food insecurity are not dealt with. Further, the main concern of this Report is with describing and analysing the current state of food and nutrition insecurity in India. Mapping the relative position of the States on a food insecurity scale on the basis of a select set of indicators is part of this larger exercise.

New data has become available since the previous exercise. The FIARI had made use, for the most part, of data from the 50th round of the NSSO, the National Family Health Survey of 1992 – 93 (NFHS-1) and the Census of India 1991. Since then, data from the 55th and 61st 'full sample' rounds of the NSSO as well as data from two further rounds of the NFHS – namely, NFHS-2 (reference year 1998 – 99) and NFHS-3 (reference year 2005 – 06) and the Census of India 2001 have become available. The current exercise, utilises data from these sources and attempts to draw a comparative picture between two points of time. There is also a departure from the previous exercise with respect to the choice of indicators for the construction of the index. In the FIARI exercise, nineteen indicators had been utilised. Some of these indicators themselves were indexes, constructed by combining several indicators in specific ways. In the current exercise, a smaller number, six in one variant and seven in another have been chosen. Unlike in the FIARI exercise, the current exercise focuses more on outcome indicators rather than on input variables[18]. The final choice was made after trying out, based on a priori reasoning, different permutations and combinations with a larger basket of indicators. The picture that emerged with the larger basket of indicators was found to be effectively captured with the smaller set that has been chosen in the current exercise.

The indicators that have been chosen to reflect the status of food and nutrition insecurity in rural India, the rationale for the choices made and the status of various States with respect to the chosen indicators of food and nutrition insecurity are discussed in this chapter. A composite index of food and nutrition security is computed and the relative position of various States with respect to this index is also discussed.

2.1 Choice of Indicators of Food and Nutrition Insecurity

As already mentioned, a total of nineteen indicators were utilised in the FIARI to construct

[18] As Deaton and Drèze (2008) have argued, outcome indicators, though not without problems, may be better pointers to food security status than input indicators.

an index of food and nutrition insecurity. These consisted of five indicators of food availability, eight pertaining to access and the remaining six relating to absorption. The five indicators of food availability used are:

(i) Deficit of food production over consumption,
(ii) Instability in cereal production,
(iii) Environmental Sustainability Index,
(iv) Number of people affected by floods, cyclones, heavy rains and landslides and
(v) Percentage of area affected by drought to total geographic area.

The eight access related indicators are:

(i) Average per consumer unit per day calorie intake (Kcal) of the lowest decile,
(ii) Percentage of population consuming less than 1,890 Kcal per consumer unit (cu) per day,
(iii) Percentage of the population BPL,
(iv) Percentage of persons in labour households to the total population,
(v) Rural infrastructure index,
(vi) Juvenile Sex Ratio (females per thousand males in 0 – 9 years),
(vii) Percentage of literate females to total female population and
(viii) Percentage of Scheduled Caste and Scheduled Tribe population to total population.

The six absorption related indicators used are:

(i) Life expectancy at age one,
(ii) Percentage of population with Chronic Energy Deficiency (CED),
(iii) Percentage of severely stunted children under the age of five,
(iv) Percentage of severely wasted children under the age of five,
(v) Infant Mortality Rate (IMR) and
(vi) Health infrastructure index.

There is no attempt made in the FIARI index construction to assign weights to each of the nineteen indicators (of which some are themselves indices constructed from other primary indicators). Instead, all indicators carry the same weight. The assignment of five indicators to reflect availability, eight to represent access and six to reflect absorption implies implicit weights of 5/19, 8/19 and 6/19 respectively to the three aspects of availability, access and absorption.

In the present exercise, a number of the indicators used in FIARI have been dropped. Of the five availability indicators used in FIARI, it was initially decided to retain the indicator of deficit of production over consumption and drop the others since they dealt with issues of sustainability and transitory food insecurity. Subsequently, this indicator was also dropped after experimenting with it. A modified version of this indicator, bringing in the impact of PDS in meeting, in part, the deficit of production in relation to consumption, was tried out. A more comprehensive measure of State level availability of foodgrain would have required data on net import of grain into a State on private account as well as change in the amount of privately held stocks. In view of the practical difficulties in securing such data and when initial exercises showed that rankings across States did not vary with the inclusion or exclusion of this variable, it was decided to drop it altogether in the final version of the Index.

Of the eight access related indicators, it was felt that indicators such as sex ratio in the age group of 0 – 9 years, the proportion of SC and ST in the population, female literacy rate and rural infrastructure index, while relevant in a broad sense, were not causally proximate enough to be included in a leaner index. Of the remaining four, the indicator of proportion of households below the

poverty line was felt to be an inappropriate indicator given the dubious basis for the estimation of the poverty line based on the methodology employed by the Planning Commission. It is well known that there is an increasing disconnect between the proportion of persons BPL as estimated using the official methodology and the proportion of population undernourished in terms of the calorific norm underlying the definition of the poverty line. The indicator 'proportion of persons in labour households to the total population' is more appropriate as an indicator of transitory insecurity. In terms of chronic food insecurity, small and marginal cultivators could often be at an even greater degree of risk than rural labour households. This leaves us with two indicators pertaining to access – 'Average per consumer unit per day calorie intake (Kcal) of the lowest decile' and 'Percentage of population consuming less than 1,890 Kcal per consumer unit per day'. Since these are similar measures, it was decided to retain the second one and drop the first.

The view taken in the present exercise is that outcome measures perhaps reflect food security status better than input indicators. The absorption related indicators in the FIARI exercise include three outcome indicators — percentage of the population with CED; percentage of severely stunted children under the age of five and percentage of severely wasted children under the age of five. In the present exercise, the outcome indicators used include percentage of severely stunted children under 3 years of age, the percentage of ever-married women in the age group of 15 – 49 years who are anaemic, the percentage of children under 3 years who are anaemic and the percentage of women in the age group of 15 – 49 years with CED. Stunting was chosen over underweight in keeping with its being an indicator of long-term or chronic food insecurity which is our focus[19]. Similarly it was decided to take the percentage of both women and children who are anaemic from the perspective of their being the most biologically vulnerable groups[20]. Anaemia is an indicator of both poor nutrition and poor health[21]. Anaemia has been on the increase in the country as a whole, especially among vulnerable categories such as children and pregnant women and is a cause for concern (Chandrasekhar and Ghosh, 2007). The choice of indicators has been influenced by data availability considerations as well. For instance LBW babies was examined as a possible choice since they face substantially higher risks of dying than do babies of normal birth weight. As per NFHS-2 (1998 – 99), 70 per cent of babies born in the three years preceding the survey were not weighed at birth. The proportion not weighed is 40 per cent in urban areas and 79 per cent in rural areas. Even for babies that were weighed, some mothers did not remember the weight. Therefore, the resulting sample of births for which weights are reported is subject to a potentially large selection bias, and the results should be interpreted with caution. As per NFHS-3, among children for whom birth weight was reported, 23 per cent had a low birth weight in rural areas, that is, they weighed less than 2.5 kg, a one per cent decline over the 24 per cent reported under

[19] It can be plausibly argued that the percentage of children underweight based on the weight-for-age data, may be used rather than the percentage stunted. We have used stunting as a criterion in the body of the Report, but have also done the exercise using underweight instead of stunting as a criterion.

[20] It may be argued, though the logic of such an argument is not obvious, that having two outcome indicators related to anaemia – percentage of ever-married women 15 – 49 years who are anaemic and the percentage of children who are anaemic, may bias the results somewhat. The exercise has also been carried out dropping the child anaemia indicator and with no major changes at least in so far as the best and worst performers are concerned.

[21] Iron deficiency in its most severe form results in anaemia – Iron Deficiency Anaemia (IDA) – and since haemoglobin concentration is relatively easy to determine, the prevalence of anaemia has often been used as a proxy for IDA (WHO, 2001).

NFHS-2. In view of this data problem, it was decided not to take LBW of babies as an indicator.

Besides these outcome indicators, two input indicators have been included in the index of food and nutrition insecurity presented in this Report. One is the percentage of households without toilets within the premises. This is available from the Census of India for all the States. The other is the percentage of households with access to 'safe' drinking water, again available from the Census of India for all the States[22]. These two indicators relate to the absorption aspect of food security. They are crucial for human well-being, a fact analysed in detail in the UNDP Human Development Report 2006.

Access to safe drinking water was also used as an indicator in the FIARI. Water and sanitation related infections account for between 70 – 80 per cent of the burden of disease in the country (Tenth Five Year Plan, 2002 – 07). Halving the population without access to safe drinking water by 2015 is a target under the UNMDG. The case for access to toilets is likewise echoed in the 2006 Human Development Report–"Toilets may seem an unlikely catalyst for human progress – but the evidence is overwhelming".

To recapitulate briefly, we have chosen the following seven indicators to assess the chronic food and nutrition insecurity situation in the rural areas across the major States of the country:

1) Percentage of population consuming less than 1,890 Kcal/cu/diem
2) Percentage of households not having access to safe drinking water
3) Percentage of households not having access to toilets within the premises
4) Percentage of ever-married women (15 – 49 yrs) who are anaemic
5) Percentage of women (15 – 49 yrs) with CED
6) Percentage of children in the age group 6 – 35 months who are anaemic
7) Percentage of children in the age group 6 – 35 months who are stunted.

Out of the seven indicators chosen, the first three indicators are process or input indicators and the last four are outcome indicators. We consider each indicator in some detail here.

2.1.1 Percentage of population consuming less than 1,890 Kcal /cu/diem

The calorie, a unit of energy, has always been considered as the main measure of food adequacy and is the basis of poverty measurement in India[23]. What is the calorie level that can be considered adequate for a healthy life? The answer is not clear. Actual calorific requirements of an individual depend on factors such as gender, age, body–weight and nature of work, all of which vary across individuals. Fixing a norm, therefore, requires a detailed analysis of the population being studied. The FAO accordingly assigns minimum energy requirement levels to different countries.

The government of India, in setting the poverty line, applied a norm, based on the Indian Council of Medical Research (ICMR) recommendations, of 2,400 Kcal per capita for rural India (GoI, 1993). In FIARI (p.37), the figure of 1,890 Kcal per capita per day, 70 per cent of the international norm of 2,700 Kcal used by FAO was taken as a measure of the extent of food inadequacy, and the percentage of rural population accessing less than this figure was included as an indicator in the index of food and nutrition insecurity. This is closest to the minimum dietary energy requirement of 1,820 Kcal fixed by FAO for India. The minimum calorie requirement calculations are based on the

[22] This indicator is not without problems, given the somewhat arbitrary definition of 'safe drinking water' adopted in the Census, a point to which we revert later.

[23] There are other important necessary nutrients but when the calorie intake is low, determining the use of proper proteins is not possible and nutritional assessment is made by treating calories as the single largest item (Sengupta and Joshi, 1978).

age-sex composition, the lowest acceptable weight for the typical height of the group in a country and the light activity norm (FAO, 2000). A person consuming anything below this bare minimum level, it is safe to say, is likely to face long-term ill effects of malnourishment.

The percentage of rural population obtaining less than 1,890 Kcal per capita per day can be readily worked out for major States and for India as a whole from NSSO data on per capita calorie intakes of rural households and was therefore chosen. FIARI had made use of data for 1993 – 94. In the present Report, we are in a position to make use of data from the 55th and 61st rounds of the NSSO for reference years 1999 – 2000 and 2004 – 05 as well.

2.1.2 Percentage of households not having access to safe drinking water

Water is defined as safe if it is free from biological contamination (guinea worm, cholera, typhoid, etc.) and chemical contamination (excess fluoride, brackishness, iron, arsenic, nitrate, etc.). Besides playing a vital role in nearly every function of the body, from protecting the immune system to helping in the removal of waste matter, water is crucial for our nutrition. Access to safe water is thus a fundamental human need and should be considered a basic human right. It has been argued that as consumption of safe water in adequate quantities ensures the physical and social health of all people and plays a crucial role in their nutritional well-being, providing safe drinking water to all communities should be the basic starting point to achieve the nutrition targets (Meenakshisundaram, 2004). Access to safe drinking water is crucial for ensuring effective biological utilisation of food taken by an individual. It is a key element of the absorption aspect of food and nutrition security.

According to a Report of the National Commission on Population (2003) on 'Strategies to address unmet needs for drinking water supply and sanitation', as per an estimate, 1.5 million children below age five die and 200 million human days are lost every year due to water-related diseases. Most deaths occur due to water-related diseases, such as diarrhoea and jaundice and unless cases of these two diseases are reduced, the IMR and morbidity rate cannot be reduced. One of the basic requirements is therefore to have a large conglomeration approach to address adequately the unmet needs of basic services/goods such as primary healthcare, nutrition, safe drinking water and proper hygiene and sanitation.

Data on percentage of households without access to a safe source of drinking water is available from the Census of India for the years 1991 (used in FIARI) and 2001 for India and various States separately for both rural and urban areas. While we will use this data since it is the only one available covering the entire country and its States, it must be kept in mind that the definition of 'safe source of drinking water[24] , used in the data source as stated earlier, is not entirely satisfactory.

2.1.3 Percentage of households without access to toilets within the premises

The World Health Organization (WHO) defines sanitation as safe management of human excreta including the provision of latrines and the promotion of personal hygiene. Environmental sanitation is a broader term, encompassing excreta disposal, solid waste management, wastewater disposal, vector control and drainage. Personal hygiene includes practices such as washing hands with soap after defecation and before contact with food, and in a broader sense, extends to the

[24] As per the Census of India, if a household has access to drinking water supplied from a tap, hand-pump/tube well within or outside the premises, it is considered as having access to safe drinking water. Such access may be more notional than real where the concerned source has either dried up or is not functioning. Besides, water from open wells, boiled and drunk, would also be safe by any reasonable definition.

collection, storage and handling of safe water (Krishnakumar, 2003).

The higher incidence rates of infection in an undernourished child could be accounted for by the poor sanitation and environmental hygiene in the household. Poor sanitation can cause and prolong communicable diseases leading to poor nutrition. Children, who are malnourished, also tend to come from families with least access to potable water, sanitation and healthcare services (NFHS, 2007). Thus, higher incidence rates of infection in an undernourished child could well be accounted for by the poor hygienic environment that the child lives in (Sagar and Qadeer, 2004). This has a direct impact on the biological absorption of food in the body. The percentage of households without access to toilets is thus a plausible indicator of food and nutrition insecurity, capturing as it does an important aspect of the dimension of absorption.

Data on this indicator for India and the various States is available from the population censuses of 1991 (used in FIARI) and 2001.

2.1.4 Anaemia among (a) ever married women (15 – 49 years) and (b) children (6 – 35 months)

In Indian settings, iron deficiency is known to be the major cause of anaemia (Indian Medical Association, 2005). It must, however, be noted that infectious diseases in particular, such as malaria, tuberculosis and HIV/AIDS are important factors contributing to the high prevalence of anaemia in many populations. Nutritional deficiencies besides iron, such as folate, vitamin B12 and vitamin A, can also cause anaemia, although the magnitude of their contribution is unclear. On the whole, high levels of anaemia may be seen as an indicator of poor health and nutrition.

Two important outcome measures of food and nutrition insecurity that we have chosen to use in this Report are the percentage of ever-married women in the age group of 15 – 49 years with anaemia and the percentage of children in the age group of 6 – 35 months who are anaemic. The first measure captures anaemia among both adolescent girls and women in the fertile age group. The second measure is a critical indicator in a lifecycle approach to food and nutrition security.

Data on both indicators are available for India and the States for rural areas for two different points in time from the second and third rounds of the NFHS pertaining to reference years, 1998 – 99 (used in FIARI) and 2005 – 06.

2.1.5 Percentage of women (15 – 49 yrs) with CED

A typical and frequently used indicator of poor nutrition is the Body Mass Index (BMI). The BMI is defined as the ratio of weight of a person to the square of the person's height, with the weight normally measured in kilograms and the height in metres. BMI is known to be a good predictor of the risk of morbidity and mortality (Floud, 1992; Fogel, 1997). A level of BMI below 18.5 thus measured indicates a state of CED. We have chosen as an indicator of food and nutrition insecurity the percentage of women with CED. One reason for choosing this indicator is that female health has a significant lifecycle impact; very often children tend to be malnourished because their mothers are. Women's health is of particular concern in India due to the economic, social and cultural dimensions of entrenched gender inequality (Ramachandran, M, et. al., 2006). The second reason for choosing this indicator is that we have all India and State level data for this indicator from all the three rounds of the NFHS.

2.1.6 Percentage of children (0 – 35 months) who are stunted

Growth stunting, defined as height for age below the fifth percentile on a reference growth curve, is traditionally used as an indicator of

nutritional status in children. Growth stunting is a population-based indicator and can indicate the prevalence of malnutrition or nutrition-related disorders among an identified population of children. Growth stunting results from prolonged or repeated episodes of nutritional deficiency. While short stature in any individual child may reflect normal genetic variation and not chronic malnutrition, the growth stunting rate for a population of children can provide evidence of the extent to which children in that population are experiencing long-term nutritional deficiencies and suffering from other negative consequences (fatigue, dizziness, frequent headaches, frequent colds and infections, and difficulty in concentrating) of not getting enough to eat (FRAC, 1995).

Child weight and height performance can be viewed as the output of a 'health production function' whose inputs also include elements such as nutritional intakes, exposure to infections and healthcare. Human population responds to chronic hunger and malnutrition by decreasing body size, known in medical terms as stunting or stunted growth. This process starts *in utero* if the mother is malnourished and continues through approximately the third year of life. Once stunting has occurred, improved nutritional intake later in life cannot reverse the damage. Limiting body size as a way of adapting to low levels of energy (calories) adversely affects health in three ways:

- Premature failure of vital organs occurs during adulthood. For example, a 50 year old individual might die of heart failure because his/her heart suffered structural defects during early development.
- Stunted individuals suffer a far higher rate of disease and illness than those who have not undergone stunting.
- Severe malnutrition in early childhood often leads to defects in cognitive development.

The presence of stunting in children indicates early malnutrition. Stunting reflects growth impairment caused by either a past episode (or episodes) of acute malnutrition or a routinely limited diet over an extended period, even where current nutrition is adequate. It is an indicator of chronic malnutrition. The percentage of children (6 – 35 months) who are stunted is included as a measure of chronic food and nutrition insecurity.

2.2 Composite Index of Food and Nutrition Insecurity

With the selected seven indicators, of which the first three are input indicators and the last four are the outcome indicators, we have obtained a composite index of food and nutrition insecurity in rural India. The index is intended as a summary measure of a complex, multidimensional concept, which cannot be captured by a single indicator alone. There is inevitably an element of judgment or arbitrariness when an index is constituted from a number of indicators.

One important question is that of weights to be attached to each of the individual indicators when combining them to form a single index. This often introduces a certain amount of subjectivity into the analysis. Prior theoretical considerations can be invoked in some contexts to assign different relative weights to the various indicators entering into the construction of the index. Alternatively, a simple rule such as assigning equal weight to each indicator can be followed. While there is inevitably some loss of information when an index is constructed from a number of indicators, one of the merits of a single index to summarise a complex phenomenon or process is that, in the context of policy-making, it is a more readily comprehended decision-support tool.

We have followed the convention adopted in FIARI of assigning equal weights to all the indicators, after normalising the individual indicators through the use of a relative distance measure. Thus, in comparing the different States, for any given indicator, we take the difference between the value of the indicator and the minimum value as a proportion of the difference between the maximum and the minimum values.

2.2.1 Methodology of indexing

The seven indicators that have been considered for obtaining the final food and nutrition insecurity index are all unidirectional in the sense that a higher value of the indicator implies a higher level of food insecurity. The individual indicators chosen for working out composite indices are measured in different units and hence, in general, are not directly additive. It therefore becomes necessary to convert them to some standard 'units' so that the initial scale chosen for measuring the indicators do not bias the results. One way of doing this in an inter-State comparison exercise is to express the performance of each State with respect to each individual indicator as a value between 0 and 1 by applying the following formula:

$$\text{Index} = \frac{(\text{actual value} - \text{minimum value})}{(\text{maximum value} - \text{minimum value})}$$

Among the States being compared, the most insecure State with respect to any particular indicator will have a 'dimension index' value of 1 while the least insecure State will have a value 0. The States have been placed into one of five categories based on the level of food and nutrition insecurity. A map has been obtained for each indicator and also the final composite index, for two different points of time. This will help assess the relative change in position of the States with regard to these indicators.

2.2.2 Mapping methodology

The 19 States have been classified into five typologies based on the level of insecurity using the equal class intervals for enabling comparison of the maps at two different time points. The States in darker shade of red indicate very high level of insecurity with regard to that particular variable and the lighter shades of red indicate relatively lower levels of insecurity, with the least red indicating the least insecure.

2.3 Food and Nutrition Insecurity in Rural India

The seventeen States with population of 20 million or more as per Census 2001, are categorised as major States by the NSSO and we have included the same in the study. In addition, it was decided to include Himachal Pradesh as well as Jammu and Kashmir as three-fourth or more of their population of about 10 million is rural (Himachal Pradesh – 90 per cent and J&K – 75 per cent), taking the total number of States considered to nineteen[25].

Data for Jharkhand and Chhattisgarh have been used wherever available. It has to be noted that these States were formed only in 2000 and comparative data for the earlier period is not available for these States, which were part of Bihar and Madhya Pradesh respectively[26].

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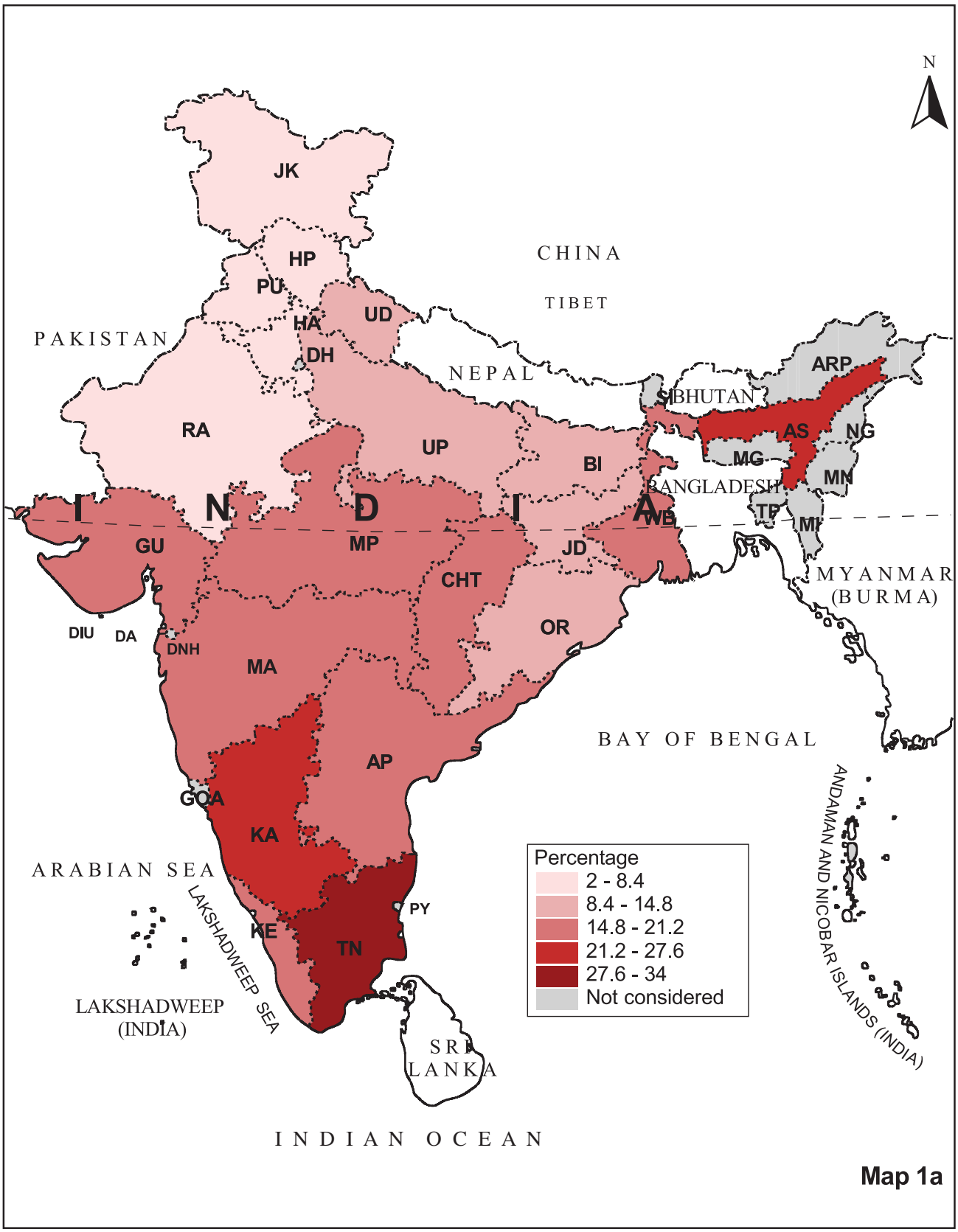
[25] Among the Northeastern States, while Assam is included in the list of 17, the population of the other States precluded their inclusion. In view of the sensitiveness of the region and the specific problems prevailing there, we feel it would be useful to prepare a separate Report on the food security situation in the Northeast.

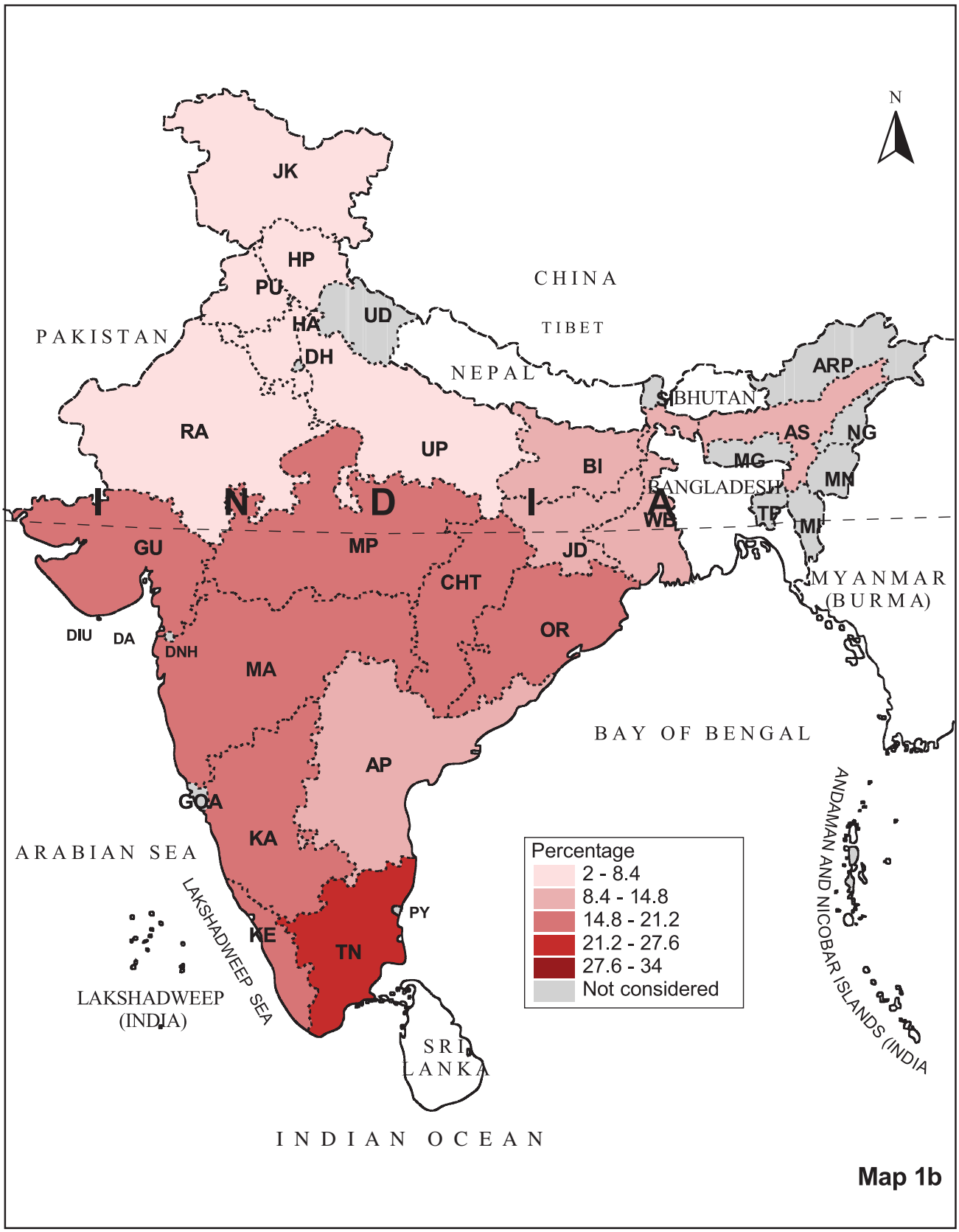
[26] Evidence on the basis of currently available data (2004 – 06 period) clearly shows that both Bihar and Madhya Pradesh do better without Jharkhand and Chhatisgarh and the latter two States emerge as the most food insecure during this period. The picture it can be expected, will not change much even if the data for the previous period were available. Attempt has therefore not been made to calculate the same from unit-level data.

Percentage of Population Consuming less than 1890 Kcal in Rural India (1999 – 2000)



Map 1a

Percentage of Population Consuming less than 1890 Kcal in Rural India (2004 – 2005)



The abbreviations (ABB) used for the States in the tables that follow are listed here:

States	ABB	States	ABB	States	ABB
Andhra Pradesh	AP	Himachal Pradesh	HP	Maharashtra	MA
Assam	AS	Jammu and Kashmir	J&K	Orissa	OR
Bihar	BI	Jharkhand	JD	Punjab	PU
Chhattisgarh	CHT	Karnataka	KA	Rajasthan	RA
Gujarat	GU	Kerala	KE	Tamil Nadu	TN
Haryana	HA	Madhya Pradesh	MP	Uttar Pradesh	UP
				West Bengal	WB

The latest data set used comprises the 61st Round of NSSO, NFHS-3 (2005 – 06) and Census 2001 (reference year 2004 – 05). Earlier data pertaining to the 50th and 55th rounds of NSSO, NFHS-2 and Census 1991 (reference year 1998 – 2000) are used for purposes of drawing a comparison in status and examining the change over time.

In the discussion which follows, we shall refer both to the current status of various States in respect of each of the indicators and the comparative picture over the last decade or so.

2.3.1 Percentage of population consuming less than 1,890 Kcal/cu/diem

The percentage of rural population reporting a calorie intake less than 1,890 Kcal per cu per diem

Table 2.1 Percentage of Population Consuming less than 1,890 Kcal/cu/day (Rural, 1993 – 94, 1999 – 2000, 2004 – 05)

States	1993 – 94	1999 – 2000	2004 – 05
Andhra Pradesh	14.1	17.3	12.5
Assam	13.3	21.8	8.9
Bihar	14.1	13.7	10.0
Chhattisgarh	*	*	16.2
Gujarat	20.4	20.1	17.1
Haryana	8.7	7.2	7.8
Himachal Pradesh	5.3	2.5	2.8
Jammu and Kashmir	0.8	2.2	2.4
Jharkhand	**	**	13.8
Karnataka	17.4	21.7	20.5
Kerala	23.7	18.7	17.5
Madhya Pradesh	12.2	18.7	16.0
Maharashtra	21.9	17.9	19.7
Orissa	10.4	11.1	15.4
Punjab	6.3	7.1	6.4
Rajasthan	4.2	4.6	5.2
Tamil Nadu	28.2	33.7	23.4
Uttar Pradesh	8.0***	8.5***	8.0
West Bengal	7.4	15.0	11.9
All India	**13.4**	**15.1**	**13.2**

Notes: *Included in Madhya Pradesh; ** Included in Bihar; *** Includes present day Uttarakhand

Source: NSSO, 50th, 55th and 61st Round

as per the NSSO rounds pertaining to 1993 – 94, 1999 – 2000 and 2004 – 05 is shown in Table 2.1 for India, and the States under comparison in this Report.

Overall, for rural India as a whole, there is a marginal reduction in the percentage of persons reporting a calorie intake less than 1,890 Kcal per diem per consumer unit from15.1 in 1999 –2000 to 13.2 in 2004 – 05, which is marginally less than the figure of 13.4 per cent reported in 1993 – 94. Taking the period of reforms as a whole, one does not see a reduction in the depth of nutritional deprivation in rural India. Considered against the background of relatively high growth rates of GDP of the Indian economy during this period, this is clearly a matter of concern.

In 2004 – 05, the States of Tamil Nadu, Karnataka, Maharashtra, Kerala, Madhya Pradesh, Gujarat and Orissa report figures above the national average. Between 1999 – 2000 and 2004 – 05, eleven States, namely, Andhra Pradesh, Assam, Bihar, Gujarat, Karnataka, Kerala, Madhya Pradesh, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal show a decline in the percentage of persons with a calorie intake less than 1,890 Kcal per consumer unit, with improvements in Bihar (including Jharkhand) and Gujarat being marginal, and only that in Assam being substantial. Over the longer period of 1993 – 94 to 2004 – 05, the States of Karnataka, Orissa and Madhya Pradesh show significant increase in the percentage of population suffering acute calorie deprivation.

The persistence of calorie deprivation across the country is important to reckon with, in the context of the claims made from time to time that dietary diversification is taking place across all expenditure groups and that this reflects a general welfare improvement among all sections of the population. Such a view is clearly overly simple and is not sustained by the evidence we have here of the percentage of population that is not even getting access to the minimum required level.

Further, the fact that calorie deprivation is increasing during a period when the proportion of the rural population below the poverty line as estimated by the Planning Commission, at least in theory, based on a calorie norm of 2,400 Kcal per capita per day, is claimed to be declining rapidly, highlights the increasing disconnect between official poverty estimates and calorie deprivation, even though the former are, by definition, based on a calorie norm. There is clearly a strong case for questioning the official poverty estimates, not just on the basis of recall periods being uniform or otherwise, but on more fundamental grounds (Patnaik, 2006).

% of population with per capita daily calorie consumption less than 1,890 Kcal	Category with respect to (w.r.t) food insecurity
2.0 – 8.4	Very low insecurity
8.4 – 14.8	Low insecurity
14.8 – 21.2	Moderate insecurity
21.2 – 27.6	High insecurity
27.6 – 34.0	Very high insecurity

The results of this exercise are shown in Table 2.1A and in Maps 1a and 1b for the years 1999 – 2000 and 2004 – 05.

Table 2.1 A Distribution of Select States by level of Food Insecurity based on percentage of persons consuming less than 1,890 Kcal/cu/day

Level of insecurity	1999-2000	2004-05
Very low	HA, HP, J&K, PU, RA	HA, HP, J&K, PU, RA, UP
Low	BI, OR, UP	AP, AS, BI, JD, WB
Moderate	AP, GU, KE, MP, MA, WB	CHT, GU, KA, KE, OR, MA, MP
High	AS, KA	TN
Very High	TN	None

Based on the interval within which the proportion of persons falling below the 1,890 kcal per capita per day norm is located, the States have been divided into five categories as follows:

In terms of insecurity levels, there has been some improvement between 1999 – 2000 and 2004 – 05. No State comes under the very highly food insecure, category. The States of Andhra Pradesh, Assam, Karnataka, Tamil Nadu, West Bengal and Uttar Pradesh have moved to a less insecure status over the same period, while the other States show no change in their food insecurity category. Only the State of Orissa has moved to a more food insecure category between 1999 – 2000 and 2004 – 05.

2.3.2 Percentage of households not having access to safe drinking water

As per the Census of India, if a household has access to drinking water supplied from a tap or hand-pump or tube well within or outside the premises, it is considered as having access to safe drinking water. This is a somewhat problematic definition. For instance, drinking water in Kerala, mostly from wells, is generally not very unsafe, and in any event, not more unsafe than water in other States. More importantly, there is a long tradition of drinking boiled water in Kerala. Yet, going by official data, Kerala has the highest percentage of households without access to 'safe' drinking water, the figure being 83 per cent. This is because the principal source of drinking water in Kerala is the open well, which, by Census definition, is not considered as a source of safe drinking water. Needless to say, this indicator is likely to be misleading as an indicator of food absorption – pertaining to the efficiency of biological utilisation of food intake – in the case of Kerala. Nevertheless, since it is a good summary input indicator capturing the absorption aspect of food security in the case of most other States, and the relevant data are available from the Censuses, we have included it in the index of food and nutrition insecurity. Table 2.2 presents data on percentage of households without access to safe drinking water for India and the States under comparison for the years 1991 and 2001. Around 26.8 per cent of the households in rural sector of India do not have access to safe drinking water.

Table 2.2 Percentage of Rural Households without Access to Safe Drinking Water

States	1991	2001
Andhra Pradesh	51.0	23.1
Assam	56.7	43.2
Bihar	43.5	13.9
Chhattisgarh		33.8
Gujarat	40.0	23.1
Haryana	32.9	18.9
Himachal Pradesh	24.5	12.5
Jammu and Kashmir	NA	45.1
Jharkhand		64.5
Karnataka	32.7	19.5
Kerala	87.8	83.1
Madhya Pradesh	54.4	38.5
Maharashtra	46.0	31.6
Orissa	64.7	37.1
Punjab	07.9	03.1
Rajasthan	49.4	39.6
Tamil Nadu	35.7	14.7
Uttar Pradesh	43.4	14.5
West Bengal	19.7	13.0
All India	**44.5**	**26.8**

Source: Census of India

Going by the Census data, it would appear that there has been considerable improvement in access to safe drinking water across most States.

States such as Orissa, Bihar and Uttar Pradesh show very impressive improvement over the decade from 1991 to 2001. But Bihar's figure for 1991 included Jharkhand and 64.5 per cent of the rural households in Jharkhand did not have access in 2001. Kerala remains an outlier for reasons discussed earlier, with the percentage of households not having access to safe drinking water being in excess of 80 per cent in both 1991 and 2001. The general improvement is also accompanied by a reduction in the range of variation across States, a reduction that is especially significant when Kerala is excluded. While the overall improvement in access may indeed reflect the realities on the ground to some extent, it must also be noted that access does not necessarily imply adequacy of access for a household. It is well known that there is an emerging crisis in access to safe drinking water in both rural and urban areas. There are many factors underlying this, such as sources going dry, quality problems, systems becoming defunct due to poor maintenance and rising demand from commercial users. The tendency towards commercialisation and privatisation of water also poses a threat to sustainability of drinking water supply.

Based on the interval within which the percentage of habitations without access to safe drinking water in a State falls, the States have been divided into five categories as follows:

% of HHs without access to safe drinking water	Category w.r.t food insecurity
3 – 20	Very low insecurity
20 – 37	Low insecurity
37 – 54	Moderate insecurity
54 – 71	High insecurity
71 – 88	Very high insecurity

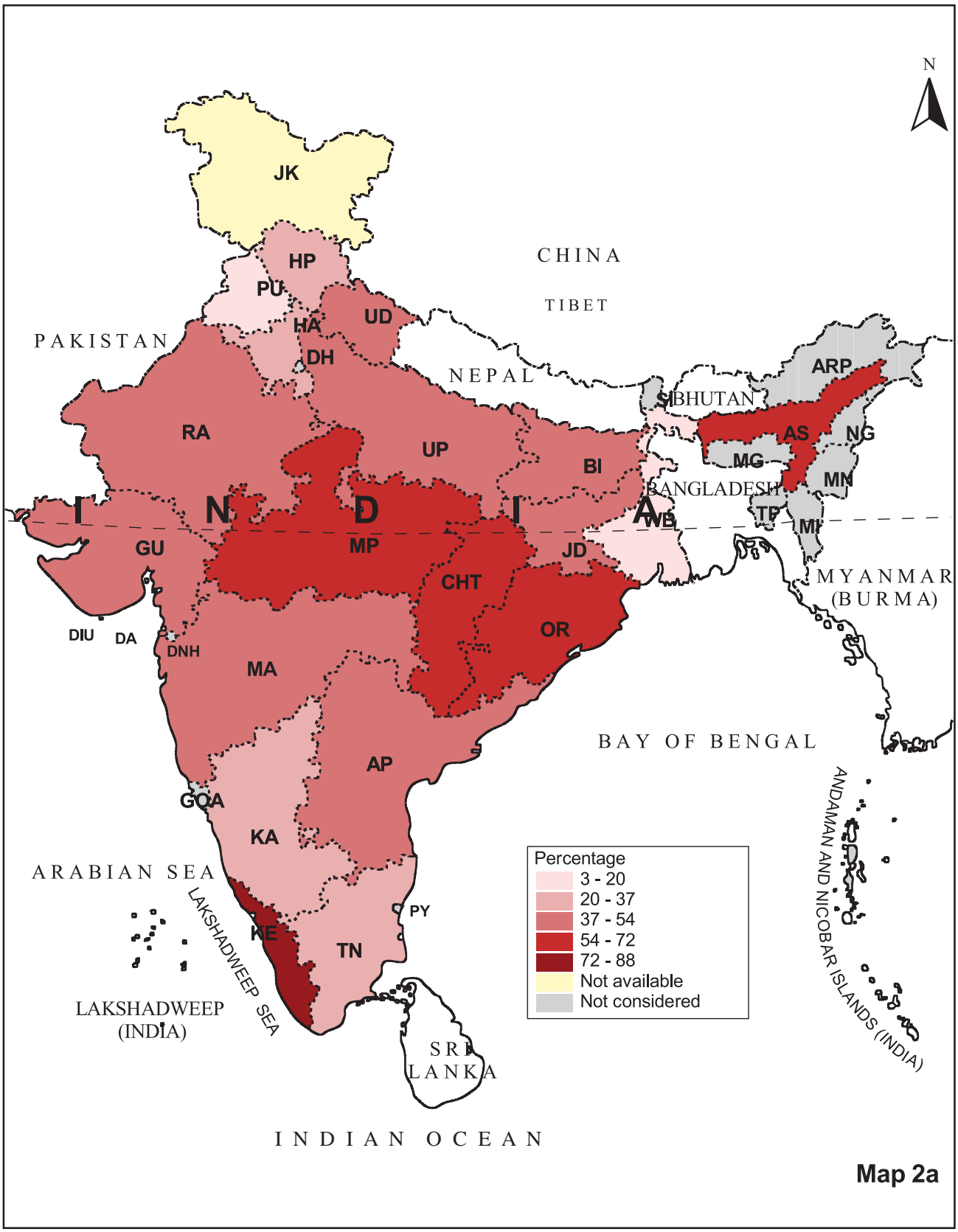
The results of this exercise are shown in Table 2.2A and in Maps 2a and 2b, for the years 1991 and 2001.

Table 2.2A Distribution of Select States by level of Food Insecurity based on the Percentage of Rural Households without Access to Safe Drinking Water

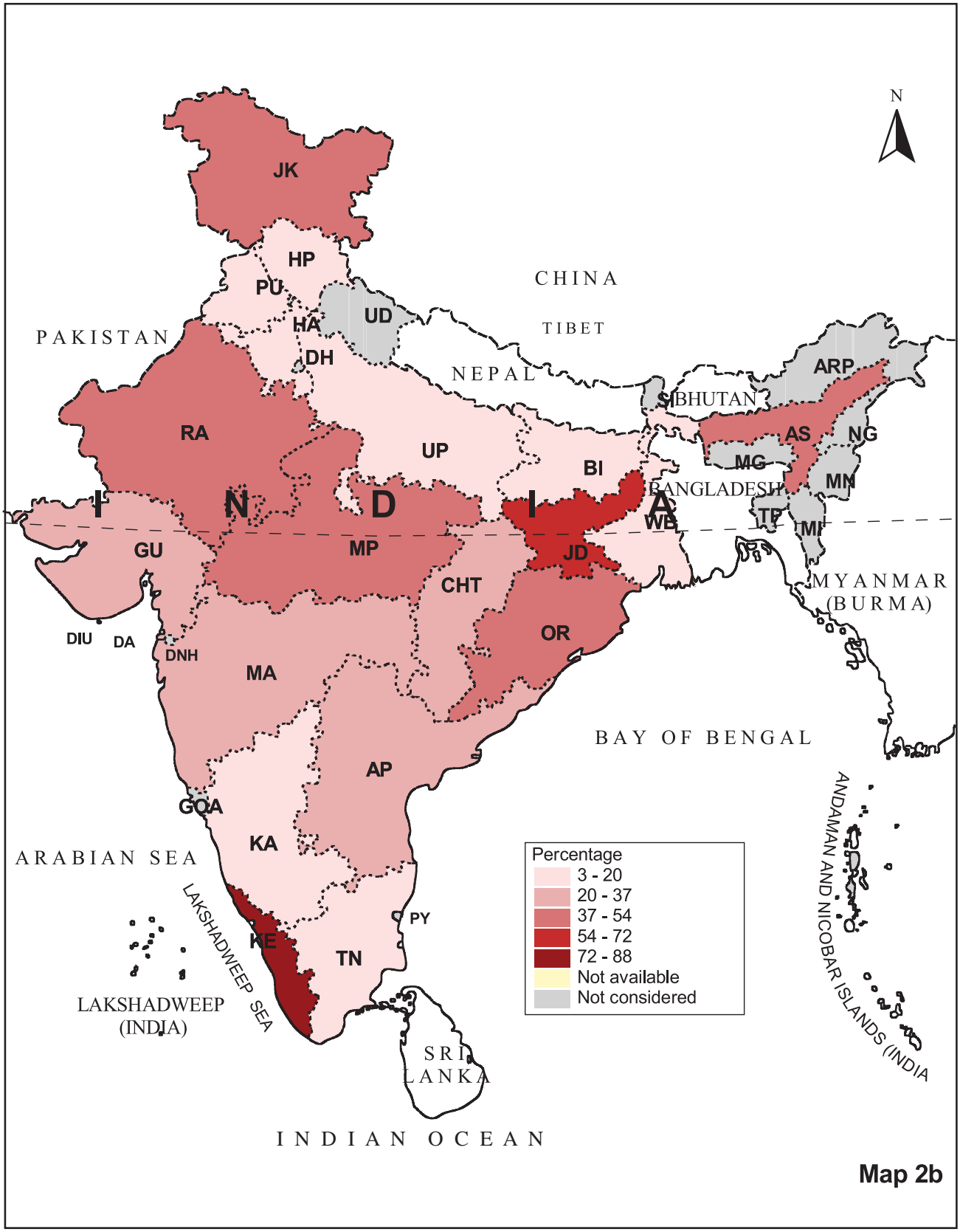
Level of Insecurity	1991	2001
Very low	PU, WB	BI, HA, HP, KA, PU, TN, UP, WB
Low	HA, HP, KA, TN	AP, CHT, GU, MA
Moderate	AP, BI, GU, MA, RA, UP	AS, J&K, MP, OR, RA
High	AS, MP, OR	JD
Very high	KE	KE

The situation has improved in almost all the States between the two Censuses. It is only in relation to undivided Bihar that the direction of change is uncertain. The proportion of households without access to safe drinking water for the present State of Bihar is much lower than for the undivided Bihar of 1991, but that for Jharkhand is higher. Given the numbers, it seems likely that the proportion would have come down for undivided Bihar as a whole. The States that have remained in the same category in both 1991 and 2001 are Kerala, Rajasthan, Punjab and West Bengal. Of these, the latter two have been the most secure in terms of access to safe drinking water in both periods. Rajasthan has remained in the

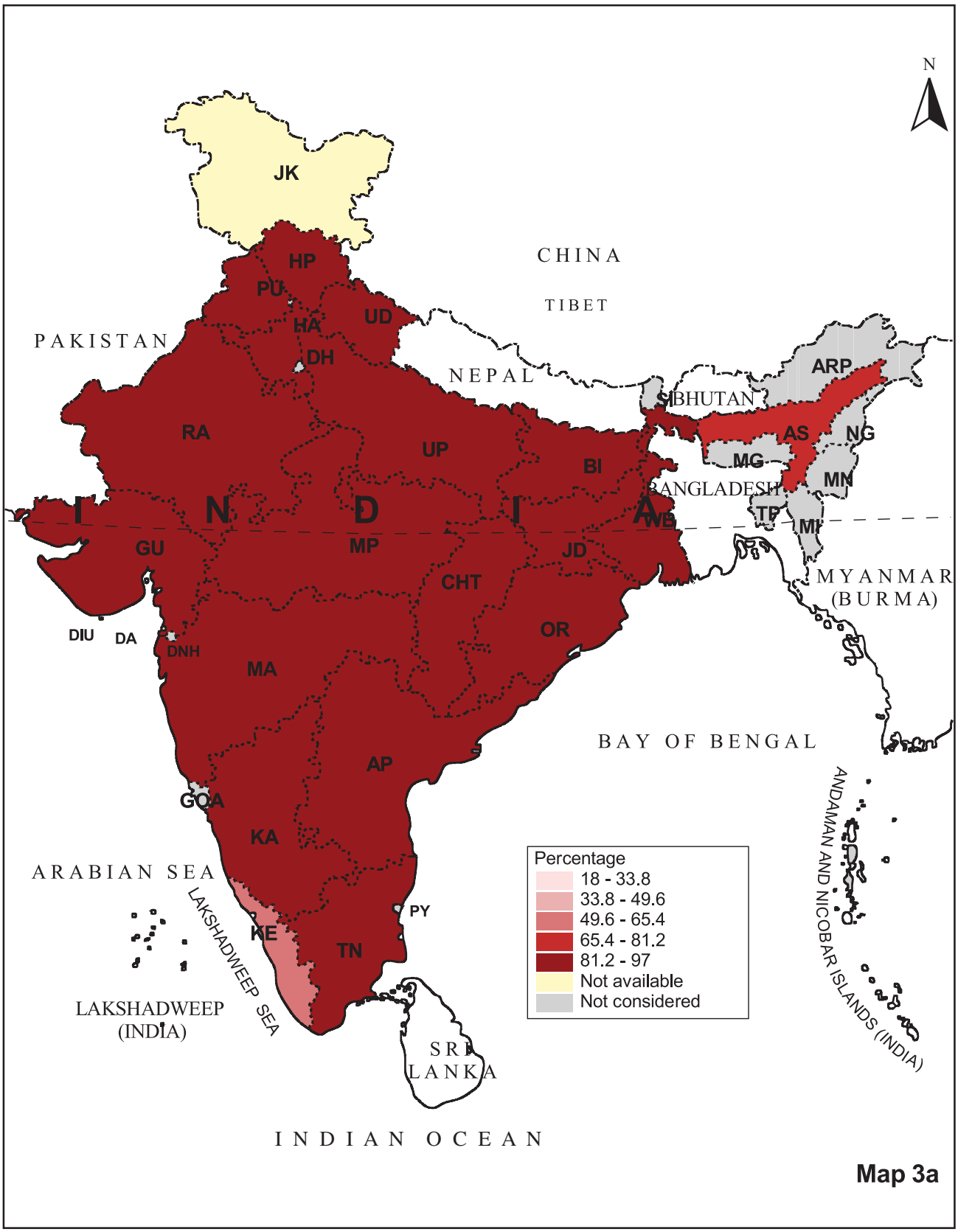
Percentage of Households without Access to Safe Drinking Water in Rural India (1991)



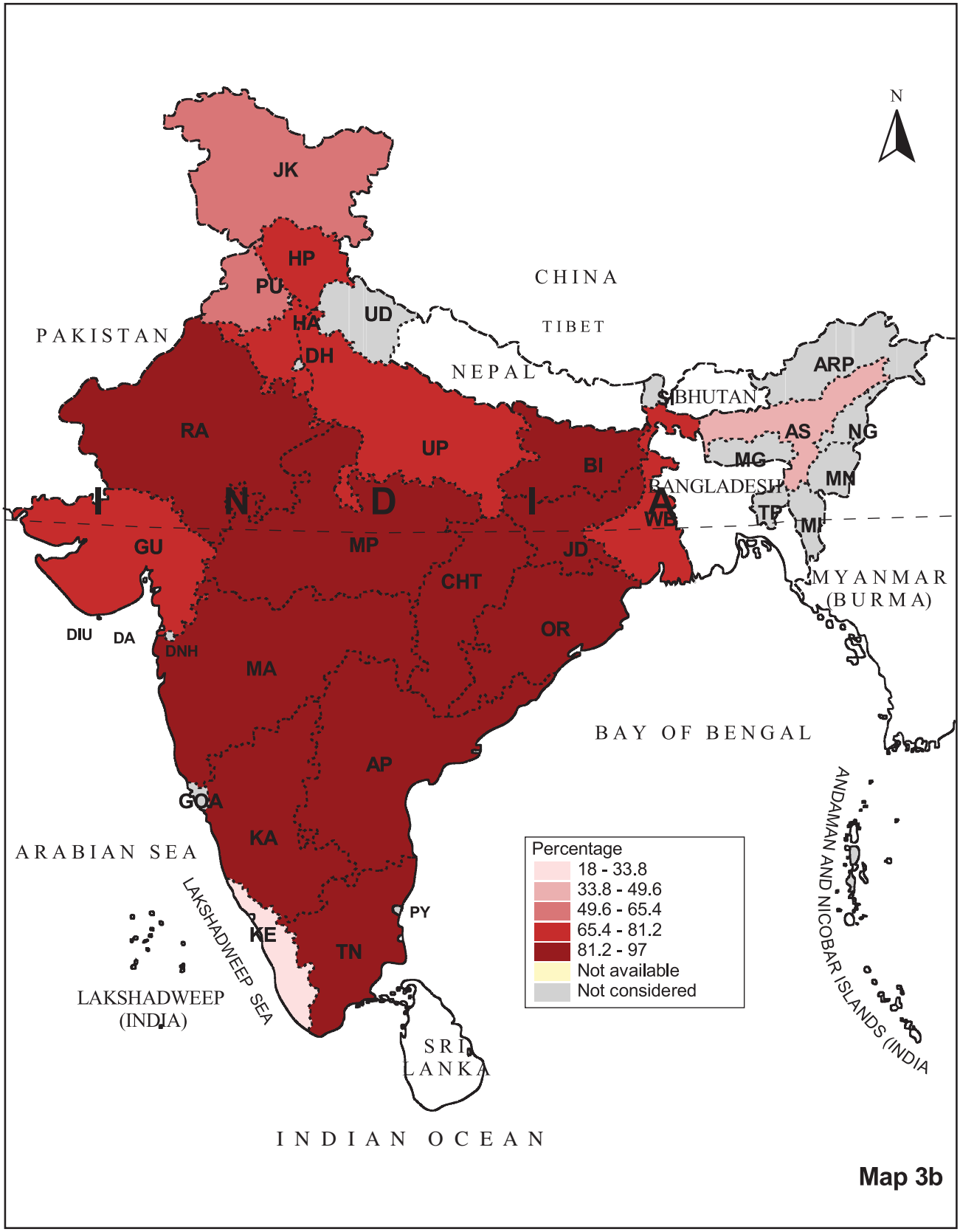
Percentage of Households without Access to Safe Drinking Water in Rural India (2001)



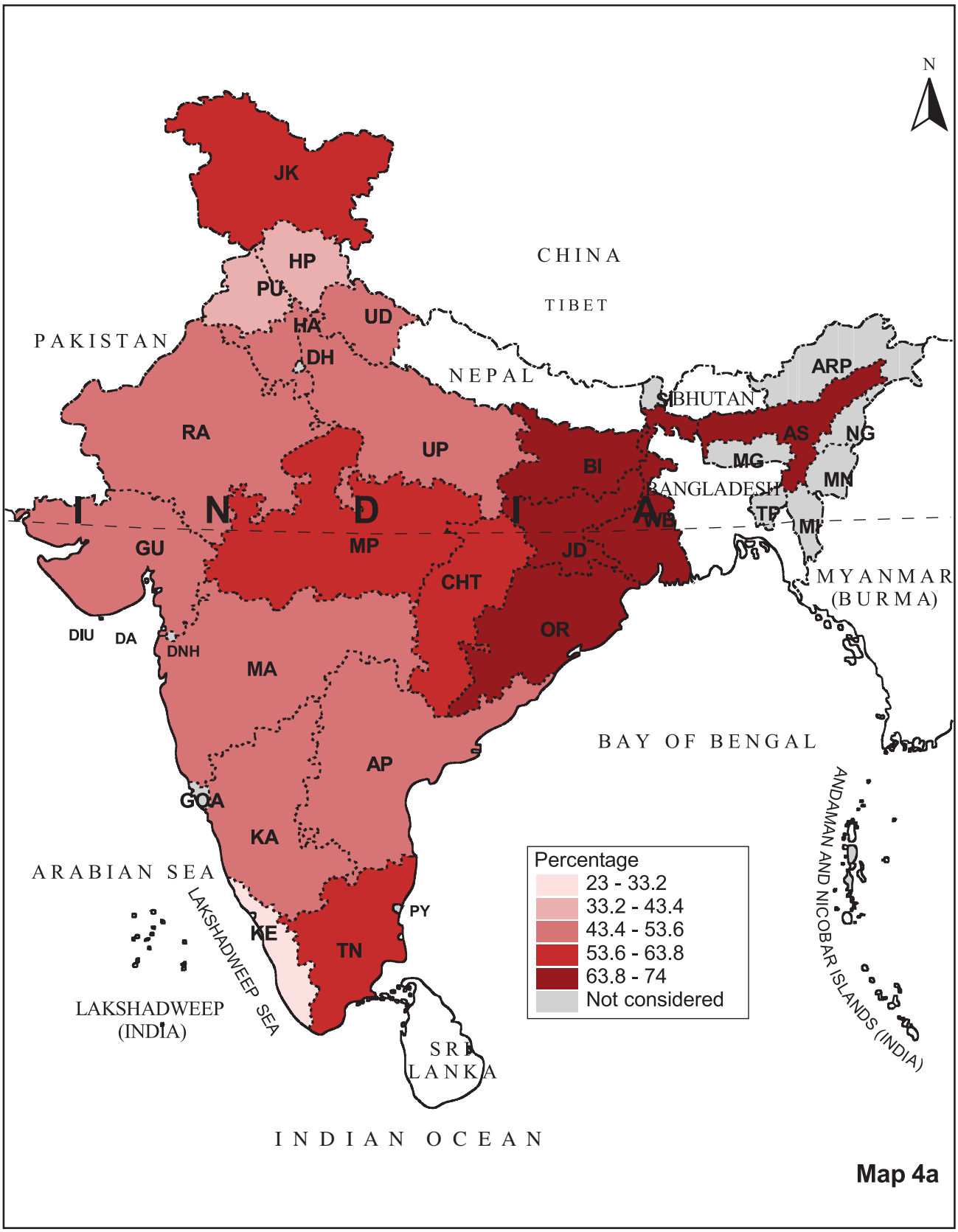
Percentage of Households without Access to Toilets in Rural India (1991)



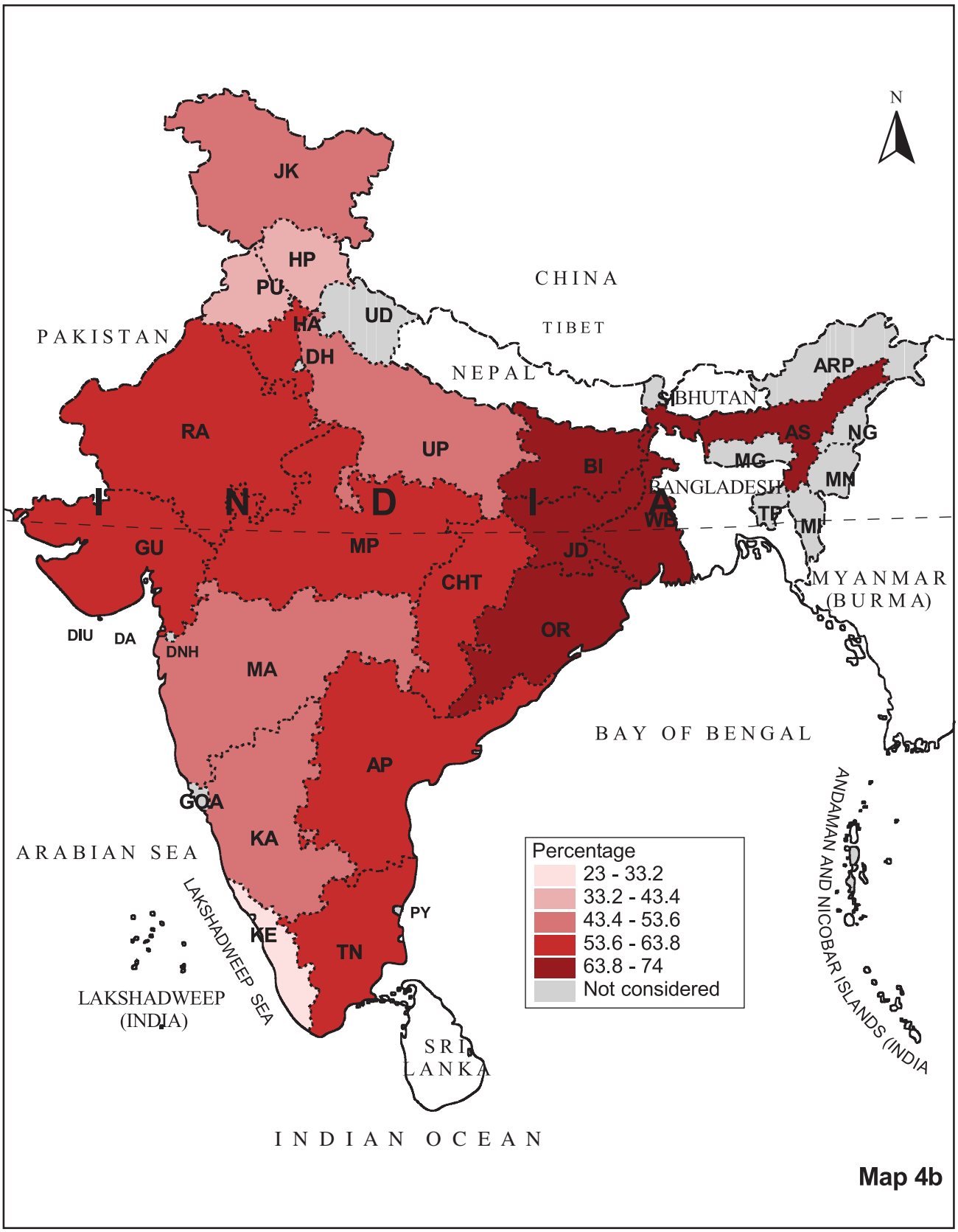
Percentage of Households without Access to Toilets in Rural India (2001)



Percentage of Women with Anaemia in Rural India (1998 – 1999)



Percentage of Women with Anaemia in Rural India (2005 – 2006)



Map 4b

category of a moderate level of insecurity. Kerala's apparently poor performance has to be tempered with the recognition that the indicator is misleading for Kerala, where water supply from wells, without piping, is boiled before drinking. All other States have moved to a lower level of insecurity between 1991 and 2001, as measured by the percentage of rural households deemed to have access to safe drinking water.

2.3.3 Percentage of households not having access to toilets within the premises

A direct relationship exists between water, sanitation, health and human well-being. Consumption of contaminated drinking water, improper disposal of human excreta, lack of personal and food hygiene etc. have been the major causes of many diseases in India (GoI, 2003a). A plausible proxy indicator for the gamut of issues pertaining to sanitation and hygiene is the percentage of households with access to a toilet within the premises. Tables 2.3 shows data on this indicator for rural areas of India and select States. The data are from the two successive decennial population Censuses of 1991 and 2001.

While in the case of access to 'safe' drinking water, as defined by official sources, Kerala was an outlier with a very high proportion of the population deprived of access, it is quite the opposite situation when it comes to access to a toilet within the premises. Kerala is again an outlier, but one with a degree of access much higher than the national average, in both 1991 and 2001. In fact, Kerala reaches a reasonably high degree of coverage in 2001 at 82.33 per cent, increasing rapidly from just 44.47 per cent in 1991. Its high levels of literacy and general social awareness have no doubt played a role in this.

Table 2.3 Percentage of Rural Households not having access to a toilet within the premises

States	1991	2001
Andhra Pradesh	93.38	81.85
Assam	69.47	40.43
Bihar	95.04	86.09
Chhattisgarh		94.82
Gujarat	88.84	78.35
Haryana	93.47	71.34
Himachal Pradesh	93.58	72.28
Jammu and Kashmir		58.20
Jharkhand		93.43
Karnataka	93.15	82.60
Kerala	55.93	18.67
Madhya Pradesh	96.36	91.06
Maharashtra	93.36	81.79
Orissa	96.42	92.29
Punjab	84.21	59.09
Rajasthan	93.35	85.39
Tamil Nadu	92.83	85.64
Uttar Pradesh	93.56	80.77
West Bengal	87.69	73.07
All India	**90.52**	**78.08**

Source: Census of India

The country has in place a rural sanitation programme, a key objective of which is to progress towards universal rural coverage in respect of providing a toilet in every household. However, the level of coverage and the rate of its growth at the rural level, except, as already noted, for Kerala, have been quite low. Coverage has been growing at approximately one percentage point annually over the last decade. This has been due to a multiplicity of factors including low awareness of the potential health benefits (and therefore, economic benefits) of better hygiene practices, perception of the costs of having a household toilet as being very high and in most cases unaffordable, the sheer convenience

(at least for men) of open defecation (vis-à-vis an enclosed space) and inadequate promotion of awareness. Even where toilets were in use, generally only women used them regularly. Men and children continued with open defecation[27]. Even the 'advanced' State of Punjab does poorly with respect to this indicator, as does Tamil Nadu. In fact, the three Southern States other than Kerala, as well as industrially advanced Gujarat and Maharashtra, all do badly, and are not much ahead of the so-called *OBiMaRU* States of Orissa, Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. West Bengal, Haryana and Himachal Pradesh, though performing better than their more illustrious counterparts in the West and the South, do not do much better. Assam is the only State within some distance of Kerala, which is interesting and perhaps merits deeper sociological investigation.

Based on the interval within which the percentage of households without access to toilets in a State falls, the States have been divided into five categories as follows:

% of HHs without access to toilets within the premises	Category w.r.t food insecurity
18.0 – 33.8	Very low insecurity
33.8 – 49.6	Low insecurity
49.6 – 65.4	Moderate insecurity
65.4 – 81.2	High insecurity
81.2 – 97.0	Very high insecurity

The results of this exercise are shown in Table 2.3A and in Maps 3a and 3b, for the years 1991 and 2001.

Table 2.3A Distribution of Select States by level of Food Insecurity based on the Percentage of Households without Access to Toilets

Level of Insecurity	1991	2001
Very low		KE
Low		AS
Moderate	KE	J&K, PU
High	AS	GU, HA, HP, UP, WB
Very high	AP, BI, GU, HA, HP, KA, MA, MP, OR, PU, RA, TN, UP, WB	AP, BI, KA, MA, MP, OR, RA, TN, JD, CHT

There is an overall improvement in all States between the two Censuses. Some States like Assam, Gujarat, Haryana, Himachal Pradesh, Kerala, Punjab, Uttar Pradesh and West Bengal have shown enough improvement to move to the next lower level of insecurity on the relative scale. Other States like Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan and Tamil Nadu have shown some improvement but not enough to move to the next lower insecurity category.

2.3.4 Percentage of ever-married women (15 – 49 years) who are anaemic

Anaemia is an important nutritional problem affecting all segments of the population in general and children and women (especially pregnant women) in particular[28]. Evidence on the incidence

[27] As it is difficult to demonstrate health benefits in the short run, it is important that the various other advantages of having a toilet are equally emphasised: safety and dignity of women; safety and security of children; prestige of family; reducing pollution in the community; national pride etc.

[28] Anaemia in India is essentially due to iron deficiency although in children and pregnant women, folate deficiency also plays a part. The amount of iron to be absorbed from daily diet is quite small. It is in the neighborhood of 1 – 3 mg depending upon the sex and the physiological status of a person. Since there is limited capacity to absorb dietary iron, diet should contain 10 – 25 fold in iron required daily. Although our diets contain fairly good amount of iron, its absorption is very poor (2 – 3 per cent). Anaemia can be aggravated by environmental factors that lead to blood loss, e.g. hookworm infestation.

of anaemia among specified sections of the population, comparable across time and States, is available based on large-scale sample surveys, at least since the first national family health survey (NFHS-1) for reference year 1992 – 93. Such data is available for three distinct points in time, namely 1992 – 93, 1998 – 99 and 2005 – 06.

Table 2.4 Percentage of Rural Women with Anaemia (15 – 49 yrs)

States	1998 – 99	2005 – 06
Andhra Pradesh	50.60	63.70
Assam	69.90	69.50
Bihar	63.90	68.20
Chhattisgarh		59.40
Gujarat	51.30	59.20
Haryana	47.50	56.90
Himachal Pradesh	40.70	41.20
Jammu and Kashmir	59.90	53.60
Jharkhand		73.70
Karnataka	46.00	52.50
Kerala	23.40	32.40
Madhya Pradesh	57.00	61.00
Maharashtra	51.20	51.10
Orissa	64.10	64.00
Punjab	42.50	37.40
Rajasthan	49.10	54.90
Tamil Nadu	59.10	53.90
Uttar Pradesh	49.40	49.83
West Bengal	64.20	65.60
All India	**53.90**	**58.20**

Note: The data has been sourced from the Fact Sheets and not the printed reports and there may be marginal differences between the two sources.

Source: NFHS-2 & 3

The data pertaining to anaemia among ever-married women in the age group of 15 – 49 years from the surveys of 1998 – 99 and 2005 – 06 have been brought together for rural areas of India and select States in Table 2.4.

More than fifty per cent of the women in rural India were reported anaemic in 1998 – 99. While this itself is rather high, and reflects poorly on the status of women's health as well as food and nutrition security in India, it is very disturbing that the figure for rural India in 2005 – 06 is even higher at 58.2 per cent. Moreover, only three States showed improvement between 1998 – 99 and 2005 – 06, namely Jammu and Kashmir, Tamil Nadu and Punjab. On the other hand, eight States (Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh and Rajasthan) showed increase in the incidence of anaemia among women in the reproductive age group. The remaining States of Assam, Himachal Pradesh, Maharashtra, Orissa, Uttar Pradesh and West Bengal showed only marginal changes. The range of variation across States declined because of a significant worsening in Kerala, where the percentage of women with anaemia in the age group of 15 – 49 years increased by 9 percentage points from 23.4 in 1998 – 99 to 32.4 in 2005 – 06. However, there was a marginal increase in the highest reported figure, with Jharkhand overtaking Assam as the State with the maximum percentage of women with anaemia at 73.7 per cent to Assam's 69.5 per cent. The results from NFHS-3 with respect to anaemia among women in the age group of 15 – 49 years confirm that the reported high rates of economic growth find no reflection in terms of improvement in nutritional outcomes. In fact, the situation with respect to anaemia among women in the age group of 15 – 49 years has worsened over the period of economic reforms.

Based on the interval within which the percentage of women with anaemia in a State falls,

the States have been divided into five categories as follows:

% of woman with any anaemia	Category w.r.t food insecurity
23.0 – 33.2	Very low insecurity
33.2 – 43.4	Low insecurity
43.4 – 53.6	Moderate insecurity
53.6 – 63.8	High insecurity
63.8 – 74.0	Very high insecurity

The results of this exercise are shown in Table 2.4A and in Maps 4a and 4b, for the years 1998 – 99 and 2005 – 06.

Table 2.4A Distribution of Select States by level of Food Insecurity based on the Percentage of Women with Anaemia

Level of insecurity	1998 – 99	2005 – 06
Very low	KE	KE
Low	HP, PU	HP, PU
Moderate	AP, GU, HA, KA, MA, RA, UP	J&K, KA, MA, UP
High	J&K, MP, TN	AP, CHT, GU, HA, MP, RA, TN
Very high	AS, BI, OR, WB	AS, BI, JD, OR, WB

It is clear that Jammu and Kashmir is the only State to have moved to a less insecure category between 1998 – 99 and 2005 – 06 in terms of the percentage of women in the reproductive age group with anaemia. The improvements in Tamil Nadu and Punjab, while significant, have not been so large as to enable them to move to a less insecure category. There has been a significant worsening in the States of Andhra Pradesh, Gujarat, Haryana and Rajasthan, and these States have moved to a more insecure category.

2.3.5 Percentage of women (15 – 49 yrs) with CED

Chronic Energy Deficiency is usually measured in terms of the BMI. The BMI is defined as the mass of a person divided by the square of the person's height and is usually expressed in kg/m^2. One way to assess nutritional status in women is through use of the BMI. It tells us two things about the nutritional status of women. First, since many nutrition-related problems are linked to being 'underweight' or 'overweight', BMI gives an indication of women's health status. Second, BMI is an important indicator of the probable outcome of a woman's pregnancy. For example, a study in India, found that 41 per cent of babies born to moderately underweight women (BMIs of 16 to 17) were born underweight (less than 2,500 grams). The figure climbed to 53 per cent when the mother's BMI dropped below 16. Likewise, an obese woman runs a much higher risk of complications during pregnancy and of having a difficult delivery (FAO, 2000). A BMI of less than 18.5 kg/m^2 indicates a state of being underweight and of CED.

Data on the proportion of rural women in the age group of 15 – 49 years with CED is available for India and its States from the NFHS of 1992 – 93, 1998 – 99 and 2005 – 06. Table 2.5 brings together data on incidence of CED among women aged 15 – 49 years for the years 1998 – 99 and 2005 – 06 for India and select States.

Table 2.5 Percentage of Rural Women with CED (15 – 49 yrs)

States	1998 – 99	2005 – 06
Andhra Pradesh	43.20	37.50
Assam	27.90	39.50
Bihar	40.30	45.90
Chhattisgarh	–	45.70
Gujarat	47.70	41.90
Haryana	30.80	32.50
Himachal Pradesh	31.00	25.80
Jammu and Kashmir	30.40	26.10
Jharkhand	–	47.80
Karnataka	47.00	38.20
Kerala	19.90	14.30
Madhya Pradesh	41.80	44.98
Maharashtra	49.30	44.20
Orissa	49.90	43.70
Punjab	20.50	14.50
Rajasthan	38.70	36.50
Tamil Nadu	35.20	30.00
Uttar Pradesh	39.10	37.20
West Bengal	49.80	44.90
All India	**40.60**	**38.80**

Note: Data has been sourced from the Fact Sheets and not the printed reports and there may be marginal differences between the two sources.

Source: NFHS-2 & 3

Overall, there is a small decline in the percentage of women with CED between 1998 – 99 and 2005 – 06 for India as a whole from 40.6 per cent to 38.8 per cent. At the State levels too, only four States report a higher level of incidence of CED in 2005 – 06 as compared to 1998 – 99. These are Assam, Bihar, Haryana and Madhya Pradesh. As with the percentage of women with anaemia, Jharkhand is the worst performer in 2005 – 06 in respect of the percentage of women with CED, displacing Orissa, which was the worst performer in 1998 – 99. Jharkhand is followed by Bihar, Chhattisgarh, Madhya Pradesh, West Bengal and Orissa. Surprisingly, West Bengal, which performs a good deal better in respect of some other indicators, does poorly with respect to CED, in both 1998 – 99 and 2005 – 06. Thirteen States, including West Bengal, Orissa and Maharashtra, the three worst performers in 1998 – 99, show improvement between 1998 – 99 and 2005 – 06. Karnataka shows the biggest improvement, by 8.8 percentage points. Kerala and Punjab are the best performers in both 1998 – 99 and 2005 – 06, with Kerala marginally ahead of Punjab.

Based on the interval within which the percentage of women with CED in a State falls, the States have been divided into five categories as follows:

% of women with CED	Category w.r.t. food insecurity
14.0 – 21.2	Very low insecurity
21.2 – 28.4	Low insecurity
28.4 – 35.6	Moderate insecurity
35.6 – 42.8	High insecurity
42.8 – 50.0	Very high insecurity

The results of this exercise are shown in Table 2.5A and in Maps 5a and 5b, for the years 1998 – 99 and 2005 – 06.

Table 2.5A Distribution of Select States by level of Food Insecurity based on the Percentage of Women with CED

Level of Insecurity	1998-99	2005-06
Very low	KE, PU	KE, PU
Low	AS	HP, J&K
Moderate	HA, HP, J&K, TN	HA, TN,
High	BI, MP, RA, UP	AP, AS, GU, KA, RA, UP
Very high	AP, GU, KA, MA, OR, WB	BI, CHT, JD, MA, MP, OR, WB

Three States – Assam, Bihar and Madhya Pradesh – have moved into a more insecure category between 1998 – 99 and 2005 – 06. Haryana, despite a marginal worsening, has remained in the same category. Andhra Pradesh, Gujarat, Himachal Pradesh, Jammu and Kashmir and Karnataka have shown enough improvement to move to a less insecure category. The remaining States have shown improvement, but not enough to move to a less insecure category.

2.3.6 Percentage of children (6 – 35 months) with any anaemia

Data on the percentage of rural children below three years of age who are anaemic is available from the NFHS for the years 1998 – 99 and 2005 – 06 for India and its constituent States and Union Territories. Table 2.6 presents the relevant data for India as a whole and for select States for the two periods.

Table 2.6 Percentage of Rural Children with Anaemia (age 6 – 35 months)

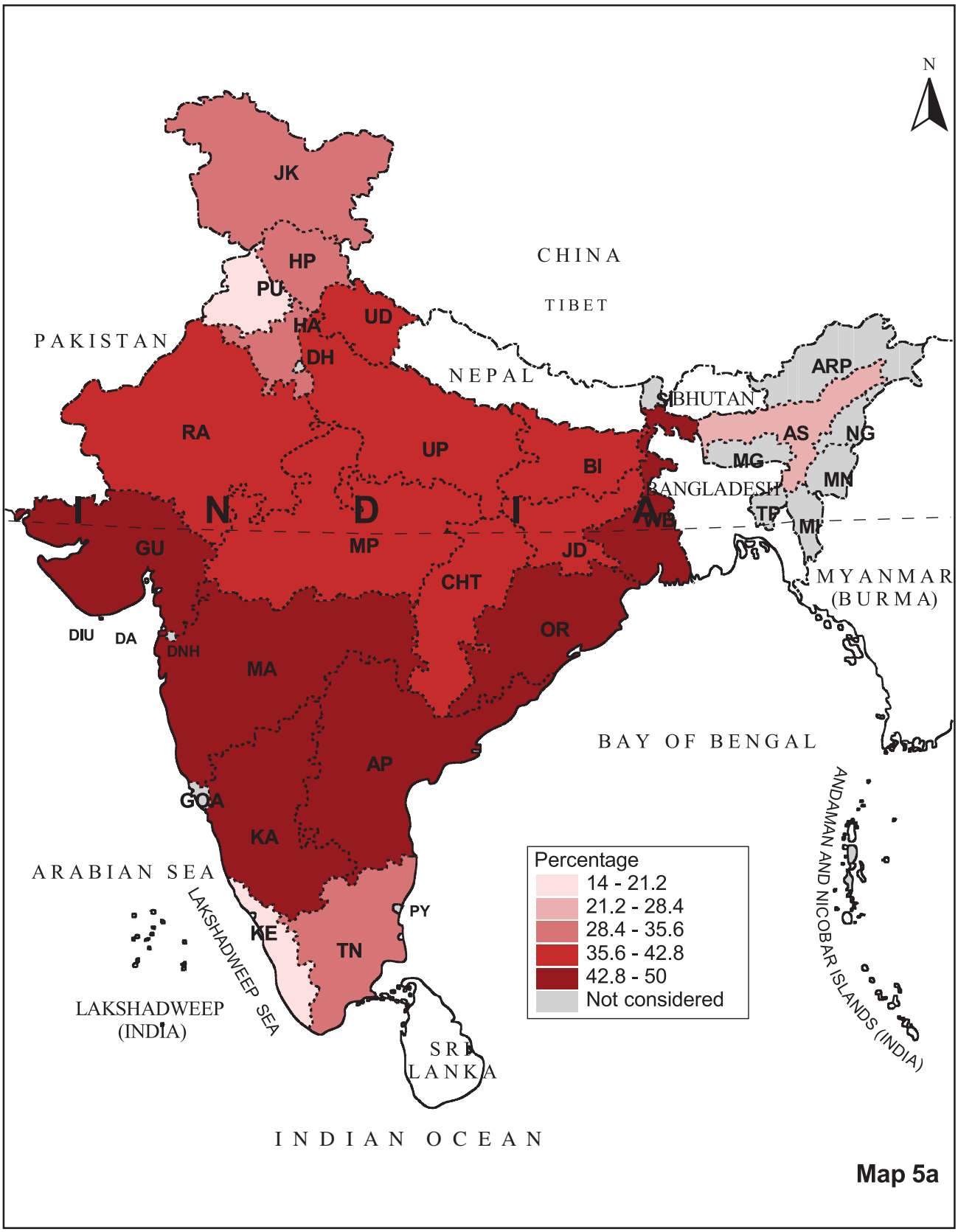
States	1998 – 99	2005 – 06
Andhra Pradesh	73.30	82.70
Assam	63.80	77.40
Bihar	81.30	89.00
Chhattisgarh	–	82.10
Gujarat	78.50	83.60
Haryana	83.00	83.30
Himachal Pradesh	70.30	59.80
Jammu and Kashmir	71.70	67.30
Jharkhand	–	80.50
Karnataka	72.70	84.30
Kerala	43.20	57.90
Madhya Pradesh	75.40	84.90
Maharashtra	78.00	76.80
Orissa	72.70	75.80
Punjab	80.90	80.00
Rajasthan	82.60	80.10
Tamil Nadu	70.50	71.00
Uttar Pradesh	73.90	85.70
West Bengal	81.50	71.90
All India	**75.30**	**81.20**

Note: Data has been sourced from the Fact Sheets and not the printed reports, and there may be marginal differences between the two sources.

Source: NFHS-2 & 3

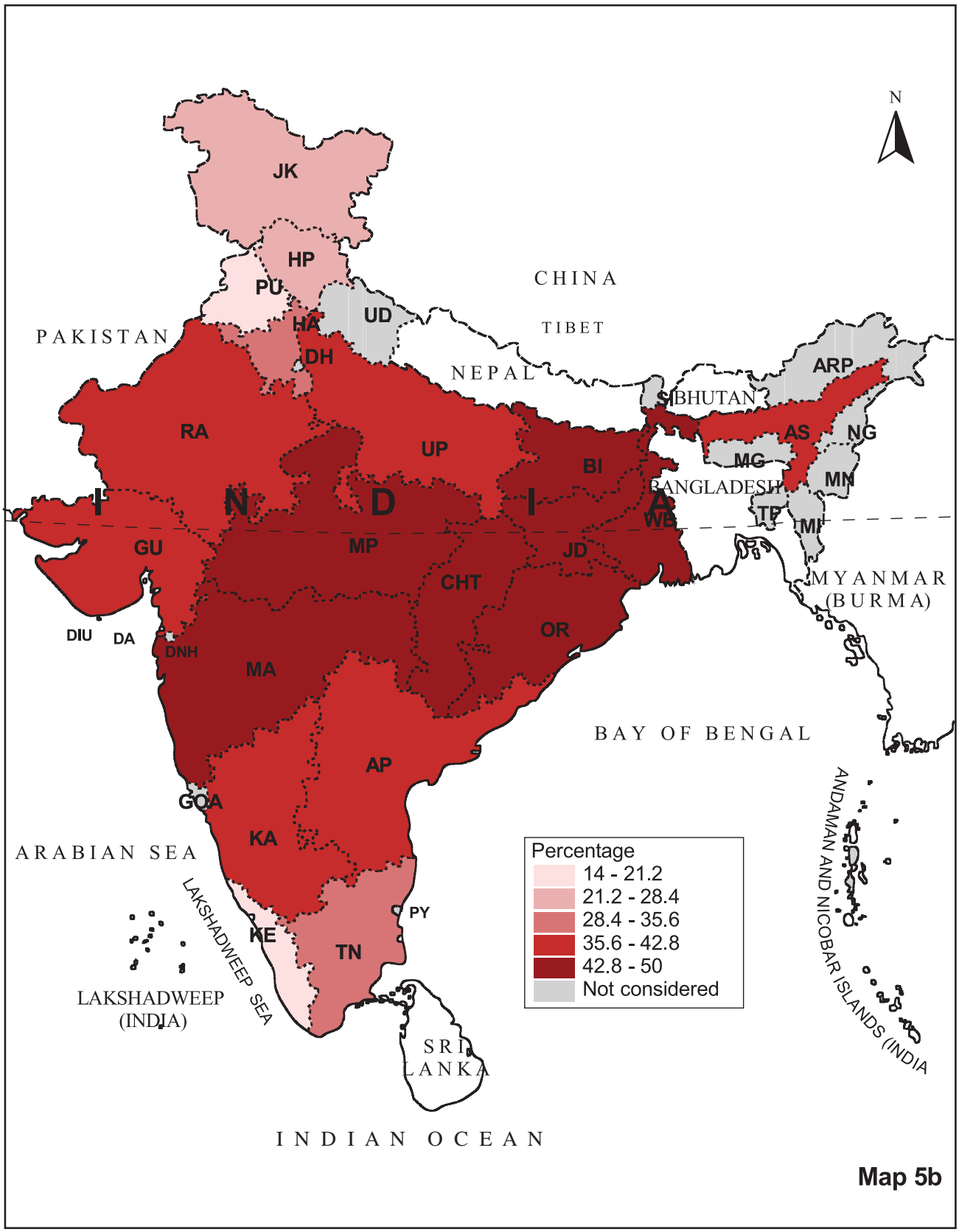
The numbers here are what one may legitimately term scandalous! The percentage of children with anaemia in India is not only shockingly high, but is even higher at 81.2 per cent in 2005 – 06, as against the already high figure of 75.3 per cent in 1998 – 99. Also, this is one indicator where, if Kerala and Himachal Pradesh are left out, all other States have uniformly very high figures. In Kerala too the situation has worsened with a 15 point increase in the percentage of rural children with anaemia. In other words, childhood malnutrition is relentless, across space and time in India. Between 1998 – 99 and 2005 – 06, only Himachal Pradesh and West Bengal showed significant decline (9 – 10 percentage points) in the percentage of children with anaemia, while the State

Percentage of Women with CED in Rural India (1998 – 1999)



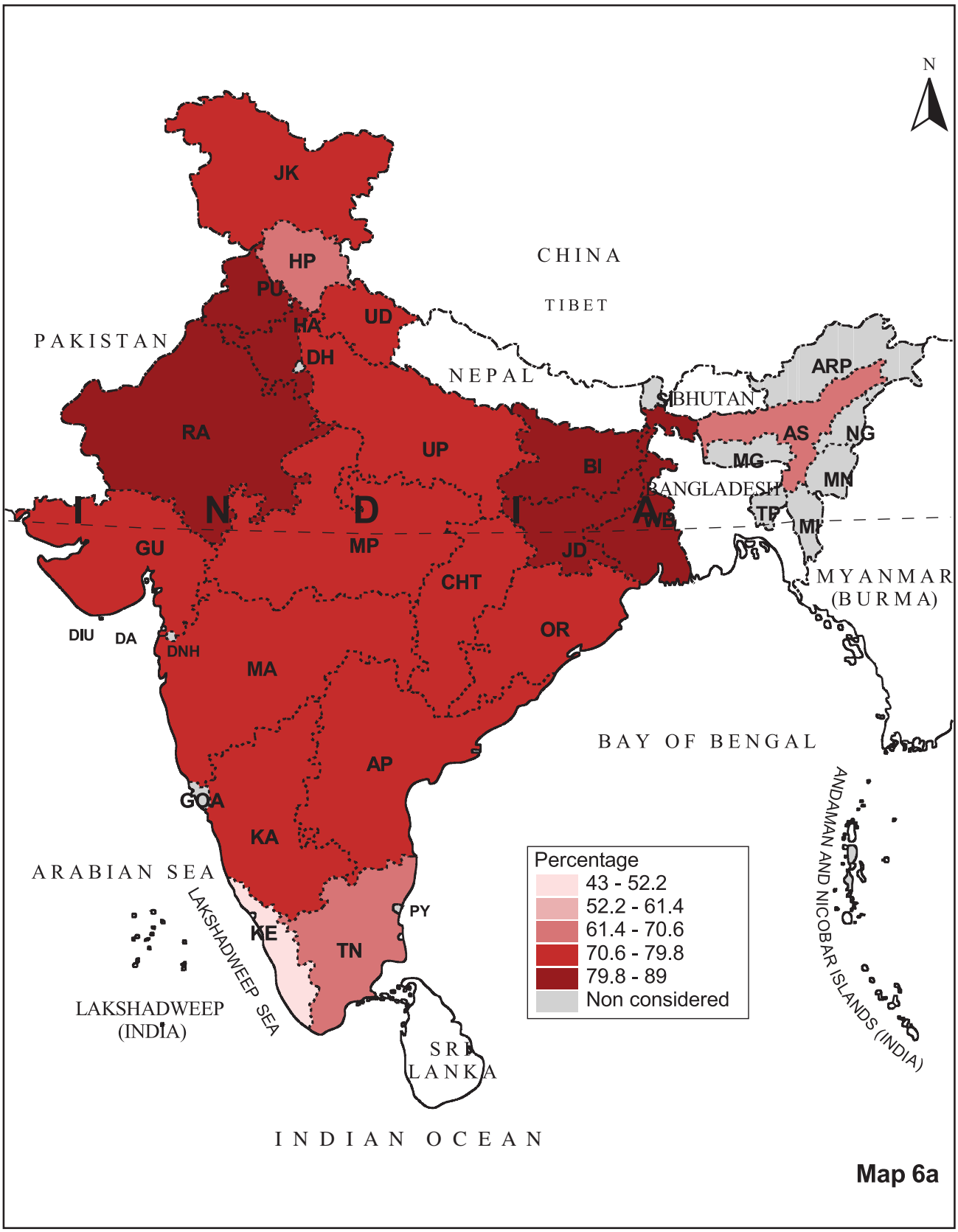
Map 5a

Percentage of Women with CED in Rural India (2005 – 2006)



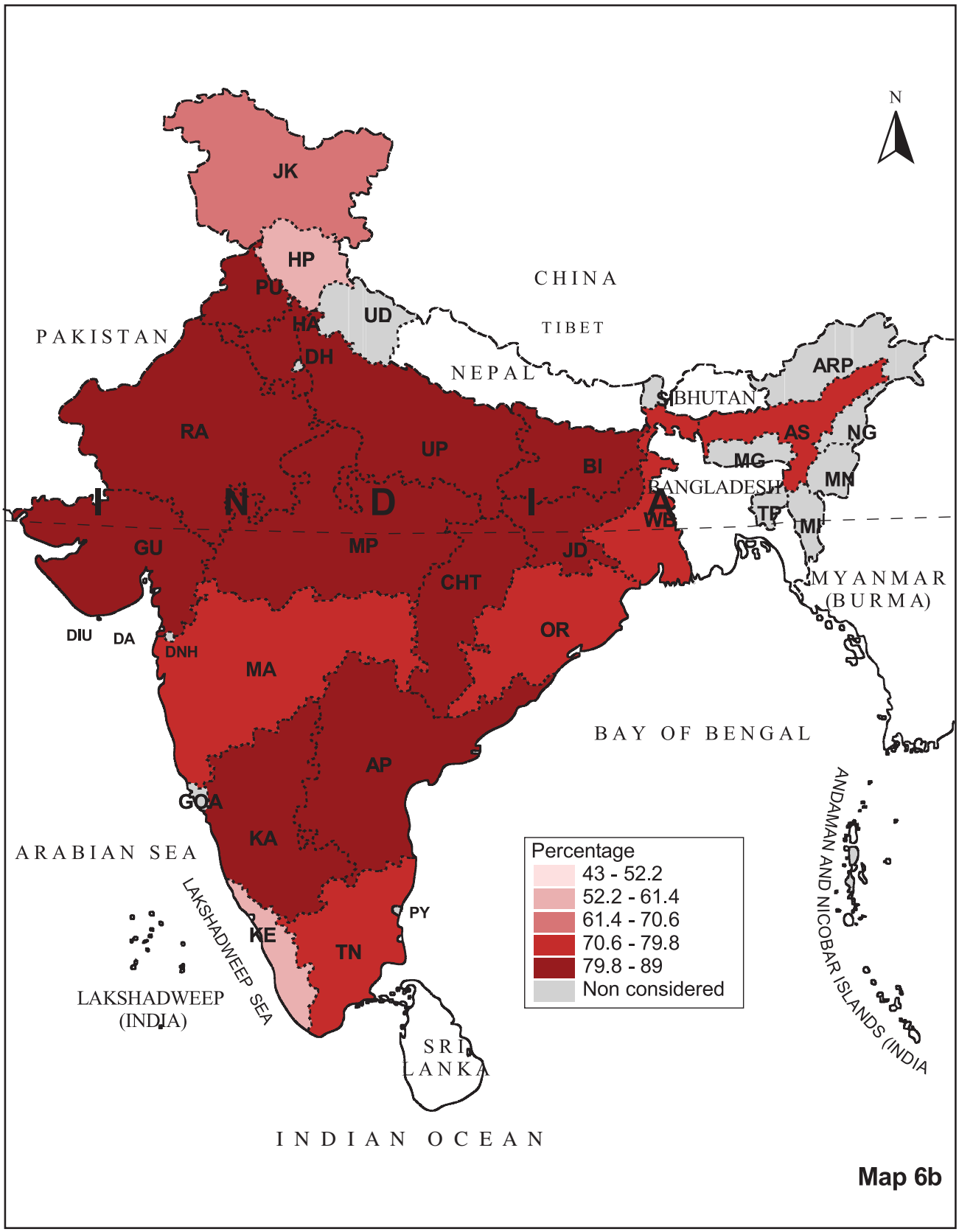
Map 5b

Percentage of Children with Anaemia in Rural India (1998 – 1999)

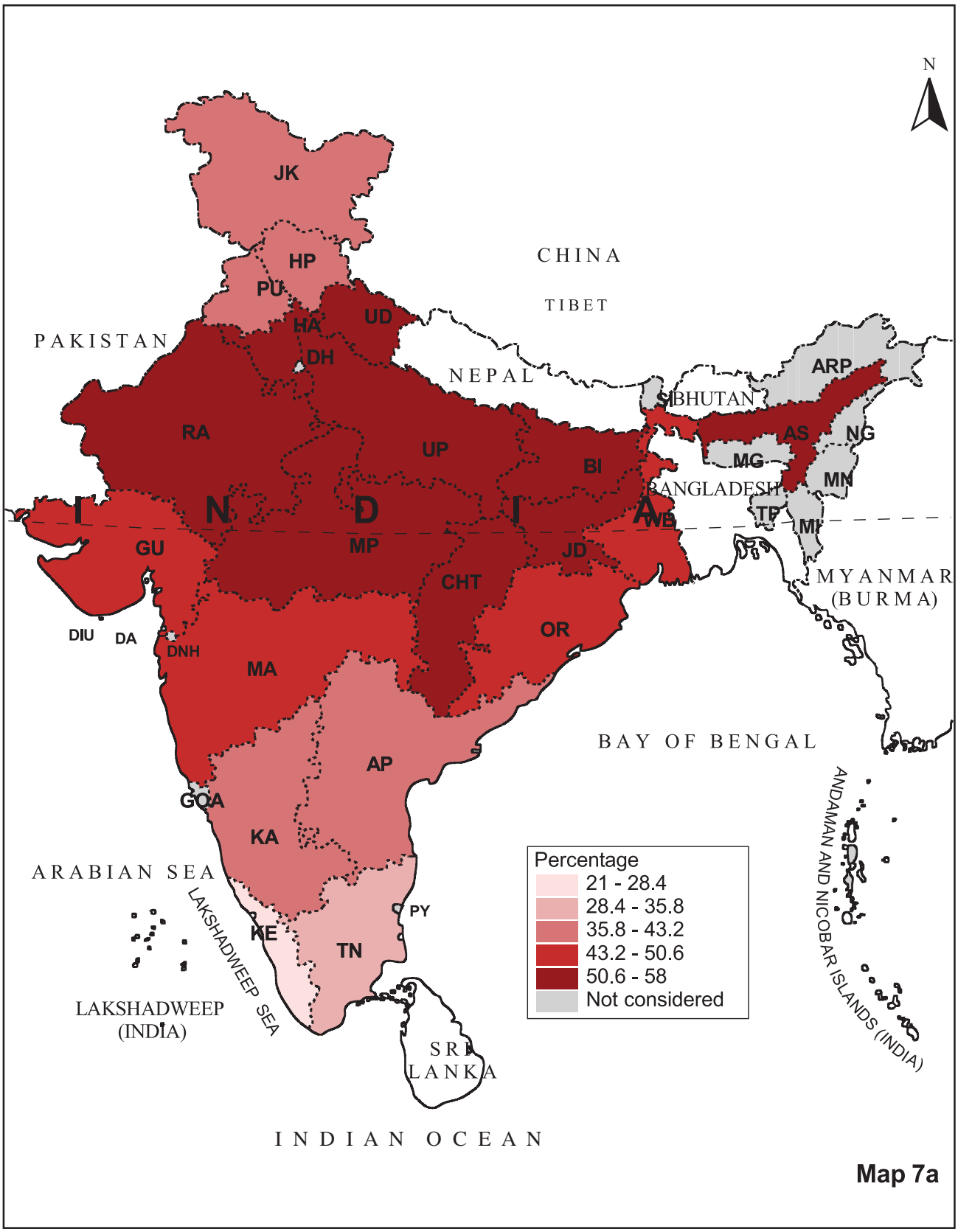


Map 6a

Percentage of Children with Anaemia in Rural India (2005 – 2006)

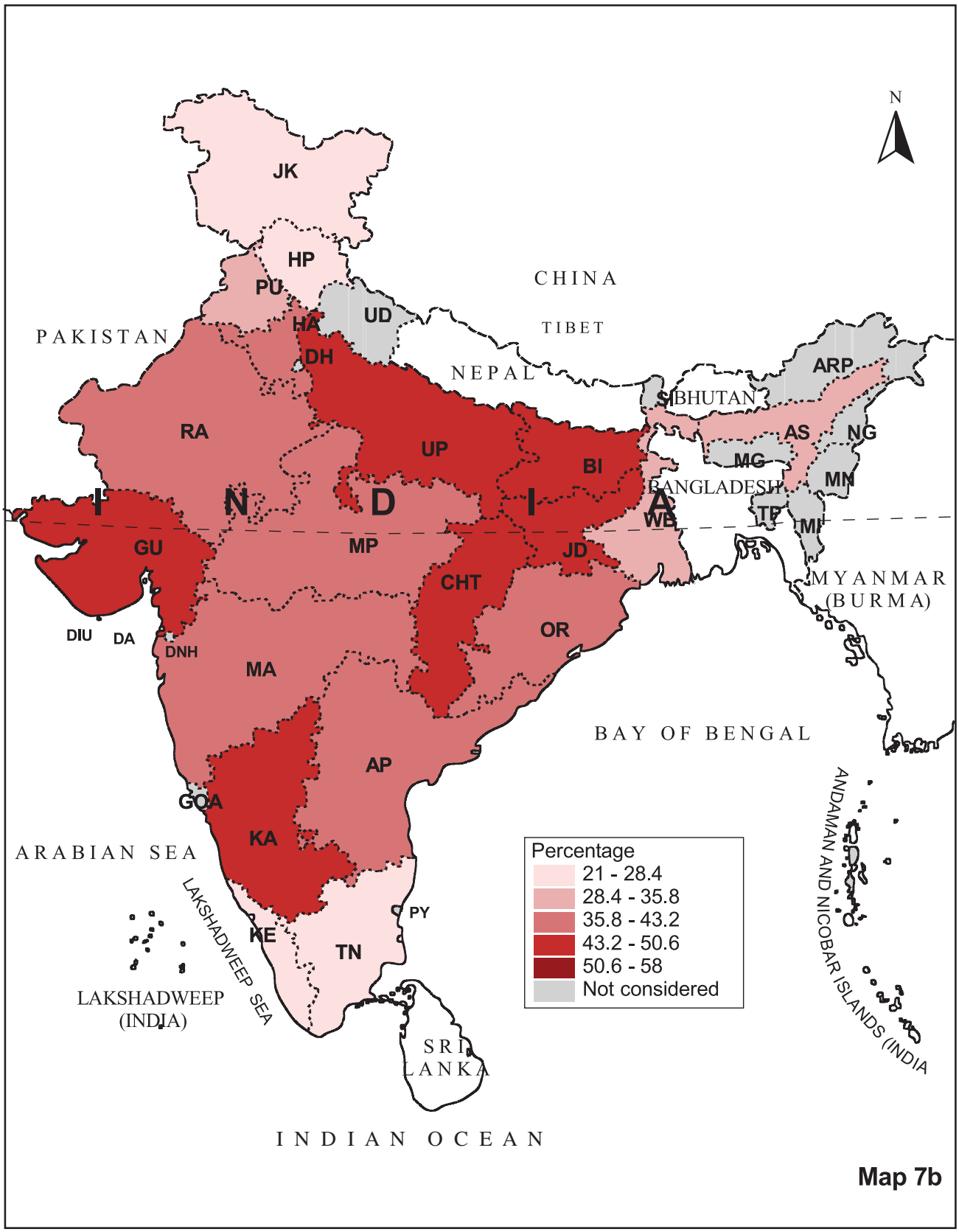


Percentage of Stunted Children in Rural India (1998 – 1999)



Map 7a

Percentage of Stunted Children in Rural India (2005 – 2006)



of Jammu and Kashmir too showed some decline. Maharashtra and Rajasthan showed marginal declines. Punjab and Tamil Nadu showed practically no change. Kerala remained the best performer in both 1998 – 99 and 2005 – 06, although, as indicated, it saw a significant and worrying rise in the incidence of anaemia among children. The fact that incidence of anaemia among children is high across all States and is not in any way correlated with the gross state domestic product or any such income measure is significant. It is also something of a reflection on the nature of growth of the Indian economy that two decades of 6 per cent plus growth rates of GDP have had little impact on childhood malnutrition. There is a very strong case for putting in place an effective, universal system of ensuring infant and child nutrition, focusing on the 0 – 3 years' age group. Needless to add, such a system would be only effective if maternal and adolescent girls' malnutrition issues are simultaneously and comprehensively addressed.

Based on the interval within which the percentage of children with anaemia in a State falls, the States have been divided into five categories as follows:

% of children with anaemia	Category w.r.t food insecurity
43.0 – 52.2	Very low insecurity
52.2 – 61.4	Low insecurity
61.4 – 70.6	Moderate insecurity
70.6 – 79.8	High insecurity
79.8 – 89.0	Very high insecurity

The results of this exercise are shown in Table 2.6A and in Maps 6a and 6b, for the years 1998 – 99 and 2005 – 06.

Table 2.6A Distribution of Select States by level of Food Insecurity based on the Percentage of Children with Anaemia

Level of Insecurity	1998 – 99	2005 – 06
Very low	KE	
Low		HP, KE
Moderate	AS, HP, TN	J&K
High	AP, GU, J&K, KA, MA, MP, OR, UP	AS, MA, OR, TN, WB
Very high	BI, HA, PU, RA, WB	AP, CHT, BI, GU, HA, JD, KA, MP, PU, RA, UP

Only three States have shown large enough improvement in respect of this indicator so as to move to a less insecure category between 1998 – 99 and 2005 – 06. These are Himachal Pradesh, Jammu and Kashmir and West Bengal. Seven States saw such a considerable increase in the percentage of children under three years of age with anaemia as to move into a more insecure category. These were Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala and Madhya Pradesh (including Chhattisgarh).

All the other States, i.e., Bihar (including Jharkhand), Haryana, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu and Uttar Pradesh have remained in the same category in 2005 – 06 where they were located in 1998 – 99[29].

2.3.7 Percentage of children (6 – 35 months) who are stunted

Data on the percentage of stunted rural children in the age group of six months to 35 months

[29] Since it might be argued that the use of two anaemia deficiency indicators could lead to an undue weight for this characteristic in the overall index, we have also provided, in the Annexure to this chapter the results when the child anaemia indicator is dropped. No major change is observed.

is available from the NFHS for the years 1998 – 99 and 2005 – 06 for India and its States. The data for India and select States is presented in Table 2.7. The data show that, while the stunting rates remain unacceptably high, this is one indicator in respect of which there has been a significant improvement at the national level, and also in the case of most States, in 2005 – 06 as compared to 1998 – 99. Among the States for which the data is presented in Table 2.7, only Karnataka shows a worsening over this period, from 39.3 per cent in 1998 – 99 to 43.3 per cent in 2005 – 06.

Table 2.7 Percentage of Rural Children Stunted (age 6 – 35 months)

States	1998 – 99	2005 – 06
Andhra Pradesh	41.60	37.30
Assam	50.90	35.50
Bihar	55.00	43.70
Chhattisgarh	–	47.90
Gujarat	46.70	45.60
Haryana	53.00	38.90
Himachal Pradesh	42.20	26.70
Jammu and Kashmir	41.00	28.30
Jharkhand	–	44.20
Karnataka	39.30	43.30
Kerala	22.70	21.10
Madhya Pradesh	54.30	41.60
Maharashtra	44.20	40.30
Orissa	44.80	39.10
Punjab	42.70	28.70
Rajasthan	54.10	36.40
Tamil Nadu	30.60	24.40
Uttar Pradesh	57.30	42.03
West Bengal	45.10	35.40
All India	**48.50**	**40.70**

Note: Data has been sourced from the Fact Sheets and not the printed reports, and there may be marginal differences between the two sources.

Source: NFHS-2 & 3

Several States show dramatic improvement. Assam, Bihar, Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan and Uttar Pradesh have all registered declines exceeding 10 percentage points between 1998 – 99 and 2005 – 06. West Bengal and Madhya Pradesh have seen a nearly 10 percentage point decline. Tamil Nadu has shown a significant decline from an already relatively lower figure among the Indian States from 30.6 per cent in 1998 – 99 to 24.4 per cent in 2005 – 06. While Kerala has shown only a marginal decline, it remains the State with the lowest incidence of child stunting at 22.7 per cent and 21.1 per cent respectively in 1998 – 99 and 2005 – 06. In 1998 – 99, only Kerala had a child stunting rate below 30 per cent. In 2005 – 06, however, five States – Kerala, Tamil Nadu, Himachal Pradesh, Jammu and Kashmir and Punjab – do so. Karnataka is the only State to do worse in 2005 – 06 as compared to 1998 – 99. Chhattisgarh is the worst performer in 2005 – 06 with a child stunting rate of 47.9 per cent, followed by Gujarat with a figure (45.6 per cent) only marginally lower than its 1998 – 99 figure of 46.7 per cent. Eight States – Gujarat, Madhya Pradesh, Chhattisgarh, Bihar, Jharkhand, Karnataka, Uttar Pradesh and Maharashtra – have rates exceeding 40 per cent, with the national average at 40.7 per cent in 2005 – 06.

Based on the interval within which the percentage of stunted children in a State falls, the States have been divided into five categories as follows:

% of stunted children	Category w.r.t food insecurity
21.0 – 28.4	Very low insecurity
28.4 –35.8	Low insecurity
35.8 – 43.2	Moderate insecurity
43.2 – 50.6	High insecurity
50.6 – 58.0	Very high insecurity

The results of this exercise are shown in Table 2.7A and in Maps 7a and 7b, for the years 1998 – 99 and 2005 – 06.

Table 2.7A Distribution of Select States by level of Food Insecurity based on the Percentage of Stunted Children

Level of Insecurity	1998 – 99	2005 – 06
Very low	KE	HP, J&K, KE, TN
Low	TN	AS, PU, WB
Moderate	AP, J&K, HP, KA, PU	AP, HA, MA, MP, OR, RA
High	GU, MA, OR, WB	BI, CHT, GU, JD, KA, UP
Very high	AS, BI, HA, MP, RA, UP	

Only the State of Karnataka has shown a worsening of the situation with regard to the percentage of stunted children under three years of age between 1998 – 99 and 2005 – 06. It has moved to a more insecure category. Andhra Pradesh and Kerala have remained in the same insecurity category in both 1998 – 99 and 2005 – 06, the former showing a moderate level of insecurity and the latter in the 'low insecurity' category. All the other States – Assam, Bihar, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal – have shown considerable improvement and moved to a less insecure category in 2005 – 06 compared to 1998 – 99[30].

2.3.8 Composite index of the food and nutrition insecurity of rural India

Having looked at the relative and absolute performance of the country as a whole and various major States in respect of the chosen indicators of food and nutrition insecurity, let us now turn to the exercise of arriving at a composite index by combining the individual indicators.

The seven indicators discussed earlier have been converted into indices and the simple unweighted average of these indices gives the value of the composite index. Based on the index values, the States have been classified on a five-point scale of food insecurity for each of the time periods 1998 – 2000 and 2004 – 06, ranging from very low levels of food insecurity to very high levels[31].

The composite index is arrived at as follows:

1) For each of the indicators, the actual value for any given State is converted into a relative distance measure or index value by using the formula discussed in section 2.2.1.

   The State with the maximum indicator value gets the Index value of one and that with the minimum value a value equal to zero. The procedure is illustrated here with regard to the indicator 'percentage of women (15 – 49 years) with anaemia'.

[30] As noted earlier, the percentage of children who are underweight for age, a composite measure taking into account both stunting and wasting, can also be used as an outcome indicator. Such an exercise, which incidentally does not alter the results significantly, is presented in the Annexure to this chapter.

[31] The data underlying the index calculated for the period designated as 1998 – 2000 have been mostly drawn from NSSO 1999 – 2000 and NFHS 1998 – 99. Only in respect of two input indicators – percentage of households without access to safe drinking water and that without access to toilet inside the premises, data have been taken from the 1991 Census. Similarly, the data underlying the Index for the period designated as 2004 – 06 come mainly from NSSO 2004 – 05 and NFHS 2005 – 06, with only the data for access to safe drinking water and to toilets coming from Census 2001.

Table 2.8 Index Value and Rank of the Percentage of Women (15 – 49 years) with Anaemia (1998 – 99)

S. No.	States	Indicator	Index value	Insecurity risk (1 = most insecure, 17 = least insecure)
1.	Andhra Pradesh	63.7	0.758	6
2.	Assam	69.5	0.898	2
3.	Bihar	68.2	0.867	3
4.	Chhattisgarh	59.4	0.654	8
5.	Gujarat	59.2	0.649	9
6.	Haryana	56.9	0.593	10
7.	Himachal Pradesh	41.2	0.213	17
8.	Jammu and Kashmir	53.6	0.513	13
9.	Jharkhand	73.7	1.000	1
10.	Karnataka	52.5	0.487	14
11.	Kerala	32.4	0.000	19
12.	Madhya Pradesh	61.0	0.692	7
13.	Maharashtra	51.1	0.453	15
14.	Orissa	64.0	0.765	5
15.	Punjab	37.4	0.121	18
16.	Rajasthan	54.9	0.545	11
17.	Tamil Nadu	53.9	0.521	12
18.	Uttar Pradesh	49.8	0.422	16
19.	West Bengal	65.6	0.804	4

2) This procedure carried out for all the indicators and the resulting index values for the States for each the indicators for the two time periods is brought together in Tables 2.9a and 2.9b. Based on these index values for the various indicators, the final composite index of food insecurity has been calculated, for each State, by adding the values across all indicators and taking the average value. Thus, for instance, the average of seven index values in Table 2.9b for Andhra Pradesh works out to be 0.630[32]. This average value of 0.630 is the value of the final index of food insecurity for Andhra Pradesh with seven indicators for 2004 – 06. This exercise has been carried out for all States for two time periods taking into account all the seven indicators shown in Tables 2.9a and 2.9b and the results are shown in Table 2.10.

[32] (0.481+0.250+0.83+0.758+0.693+0.797+0.604)/7=0.630

Table 2.9a Index Values for Indicators, State-wise, 1998 – 2000**

Index values							
States	**Percentage of women with any anaemia**	**Percentage of women with CED**	**Percentage of children with any anaemia**	**Percentage of stunted children under three**	**Percentage of population consuming <1890 Kcal**	**Percentage of hhds* without access to safedrinking water**	**Percentage of hhds* with toilets within premises**
	1998 – 99	**1998 – 99**	**1998 – 99**	**1998 – 99**	**1999 – 2000**	**1991**	**1991**
Andhra Pradesh	0.585	0.777	0.756	0.546	0.479	0.539	0.925
Assam	1.000	0.267	0.518	0.815	0.622	0.611	0.334
Bihar	0.871	0.680	0.957	0.934	0.365	0.446	0.966
Chhattisgarh							
Gujarat	0.600	0.927	0.887	0.694	0.568	0.402	0.813
Haryana	0.518	0.363	1.000	0.876	0.159	0.313	0.927
Himachal Pradesh	0.372	0.370	0.681	0.564	0.010	0.208	0.930
Jammu and Kashmir	0.785	0.350	0.716	0.529	0.000		
Jharkhand							
Karnataka	0.486	0.903	0.741	0.480	0.619	0.310	0.919
Kerala	0.000	0.000	0.000	0.000	0.524	1.000	0.000
Madhya Pradesh	0.723	0.730	0.809	0.913	0.524	0.582	0.999
Maharashtra	0.598	0.980	0.874	0.621	0.498	0.477	0.924
Orissa	0.875	1.000	0.741	0.639	0.279	0.711	1.000
Punjab	0.411	0.020	0.947	0.578	0.156	0.000	0.698
Rajasthan	0.553	0.627	0.990	0.908	0.076	0.519	0.924
Tamil Nadu	0.768	0.510	0.686	0.228	1.000	0.348	0.911
Uttar Pradesh	0.559	0.640	0.771	1.000	0.200	0.444	0.929
West Bengal	0.877	0.997	0.962	0.647	0.406	0.148	0.784

Note: *hhds – households; **Refer footnote 31

Variations in the combination of indicators have also been tried out as listed here and the detailed workout and maps are given in the Annexure to this chapter.

1. Composite index with seven indicators, replacing stunting with underweight.

2. Composite index with six indicators, excluding percentage of rural households without access to safe drinking water.

3. Composite index with six indicators, with percentage of children underweight replacing that with stunting.

4. Composite index with six indicators, excluding percentage of children with any anaemia.

5. Composite index of six indicators excluding percentage of children with anaemia and replacing percentage of stunted children with percentage of underweight children.

Table 2.9b Index Values for Indicators, State-wise, 2004 – 06**

States	Index values of						
	Percentage of women with any anaemia	Percentage of women with CED	Percentage of children with any anaemia	Percentage of stunted children under three	Percentage of population consuming <1890 Kcal	Percentage of hhds* without access to safedrinking water	Percentage of hhds* without toiletswithin premises
	2005 – 06	2005 – 06	2005 – 06	2005 – 06	2004 – 05	2001	2001
Andhra Pradesh	0.758	0.693	0.797	0.604	0.481	0.830	0.250
Assam	0.898	0.752	0.627	0.537	0.310	0.286	0.501
Bihar	0.867	0.943	1.000	0.843	0.362	0.885	0.135
Chhattisgarh	0.654	0.937	0.778	1.000		1.000	0.384
Gujarat	0.649	0.824	0.826	0.914	0.700	0.784	0.250
Haryana	0.593	0.543	0.817	0.664	0.257	0.692	0.198
Himachal Pradesh	0.213	0.343	0.061	0.209	0.019	0.704	0.118
Jammu and Kashmir	0.513	0.352	0.302	0.269	0.000	0.519	0.525
Jharkhand	1.000	1.000	0.727	0.862		0.982	0.768
Karnataka	0.487	0.713	0.849	0.828	0.862	0.840	0.205
Kerala	0.000	0.000	0.000	0.000	0.719	0.000	1.000
Madhya Pradesh	0.692	0.893	0.868	0.765	0.648	0.951	0.443
Maharashtra	0.453	0.857	0.608	0.716	0.824	0.829	0.356
Orissa	0.765	0.878	0.576	0.672	0.619	0.967	0.425
Punjab	0.121	0.006	0.711	0.284	0.190	0.531	0.000
Rajasthan	0.545	0.663	0.714	0.571	0.133	0.876	0.456
Tamil Nadu	0.521	0.469	0.421	0.123	1.000	0.879	0.145
Uttar Pradesh	0.446	0.684	0.894	0.981	0.267	0.815	0.143
West Bengal	0.804	0.913	0.450	0.534	0.452	0.714	0.124

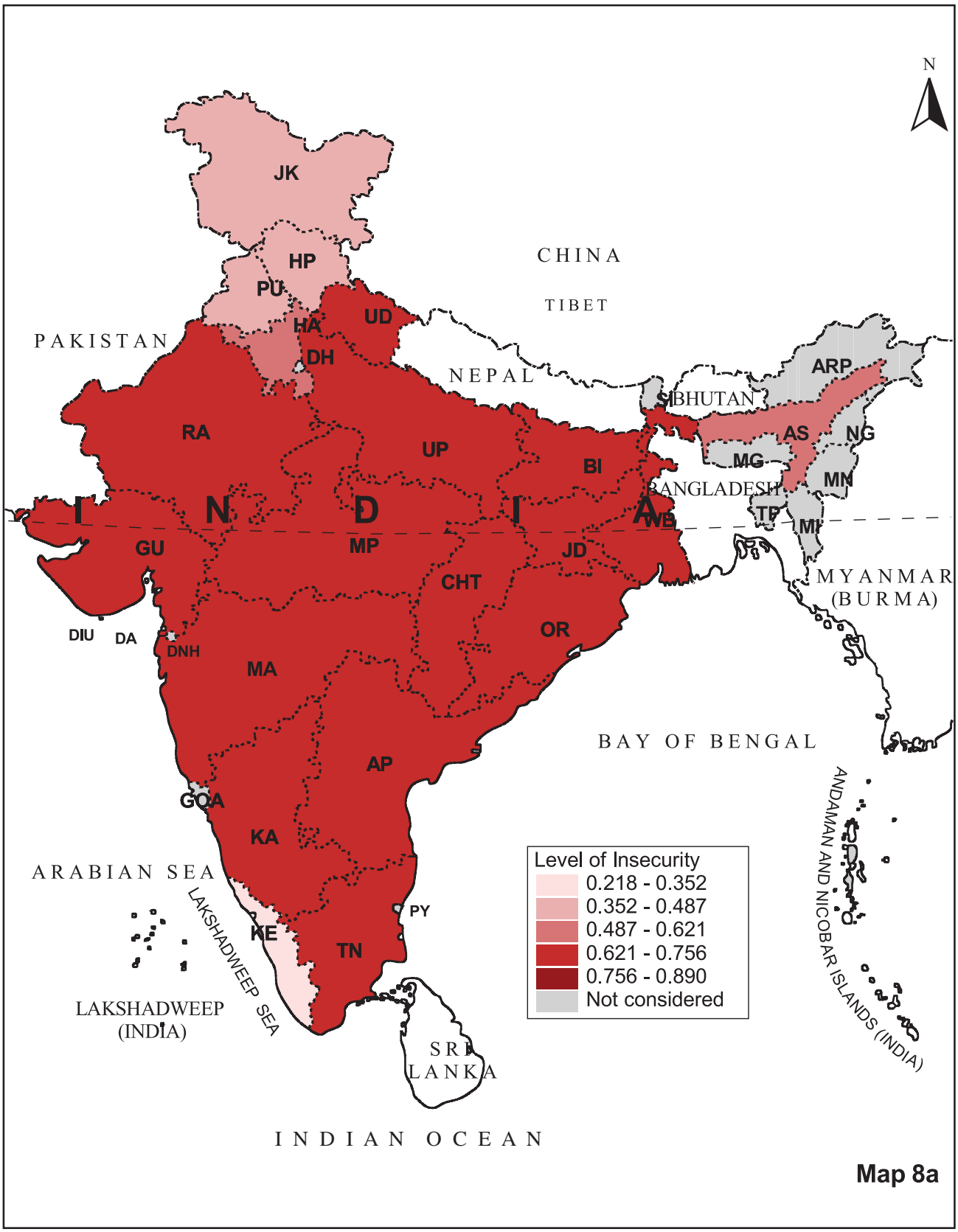
Note: *hhds – households; **Refer footnote 31.

A perusal of the values of the final index of food insecurity for the two points in time brings out some important points, not withstanding the arbitrariness involved in assigning equal weight to all indicators (Table 2.10).

First of all, Kerala is ahead of all other States in terms of food security, even though it depends a good deal on foodgrain imports from the rest of the country. This is especially true if we exclude the indicator percentage of households not having access to safe drinking water, a problematic indicator, given the difficulties in defining 'safe drinking water' [33]. Kerala retains its position as the least food-insecure State in both 1998 – 2000 and 2004 – 2006, and under both definitions of the index. However, there is a slight increase in the degree of food insecurity for Kerala as measured by the index between 1998 – 2000 and 2004 – 06, under both definitions.

[33] See Annexure to this chapter

Food Insecurity in Rural India (1998 – 2000)



Food Insecurity in Rural India (2004 – 2006)

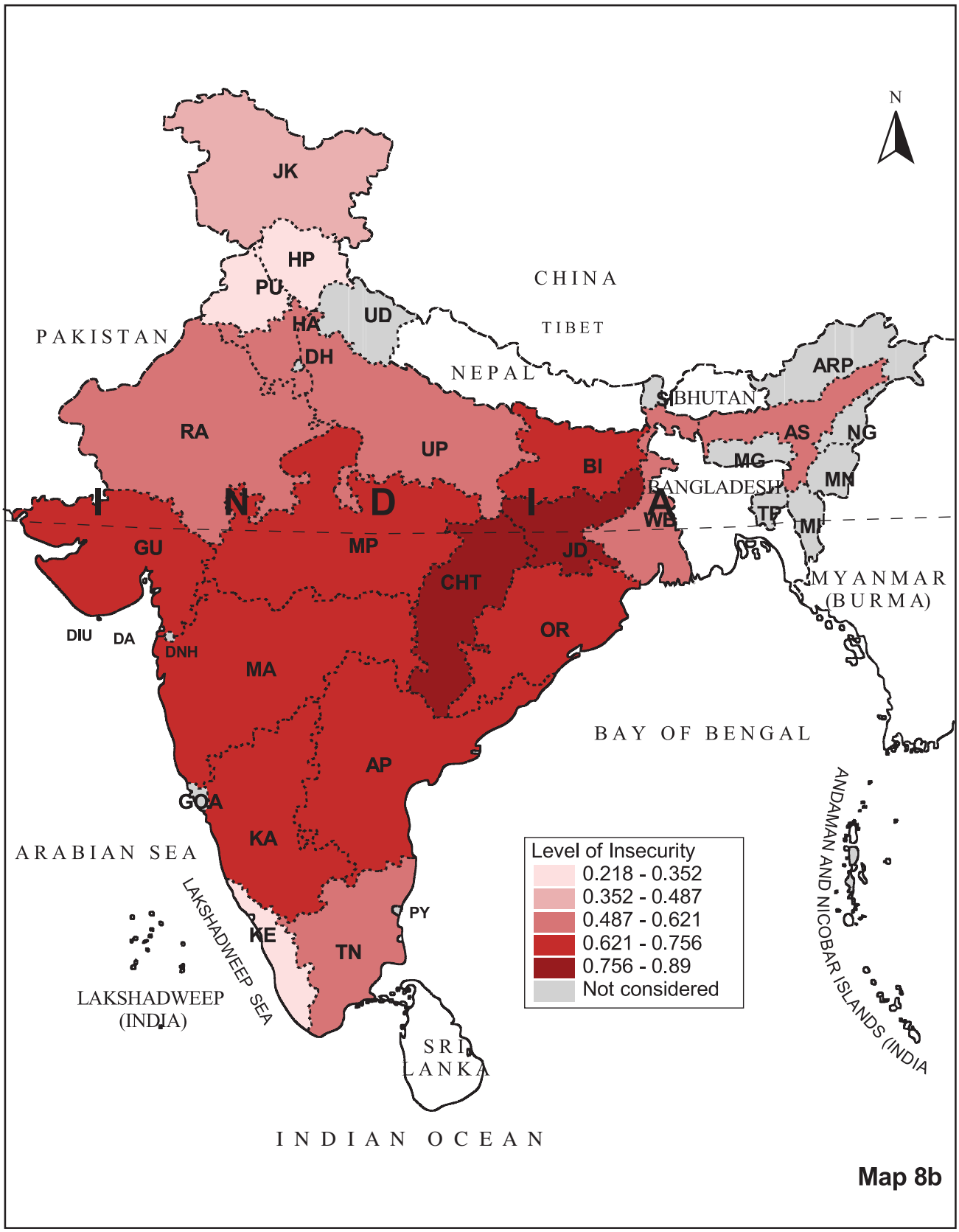


Table 2.10 Final Composite Index of Food Insecurity with Seven Indicators for Two Points of Time, 1998 – 2000 and 2004 – 06

States	CI1*	Rank	CI2**	Rank
Andhra Pradesh	0.658	7	0.630	9
Assam	0.595	12	0.559	13
Bihar	0.745#	3	0.719	4
Chhattisgarh	–		0.792	2
Gujarat	0.699	5	0.707	5
Haryana	0.594	13	0.538	14
Himachal Pradesh	0.448	15	0.238	19
Jammu and Kashmir	0.476	14	0.354	16
Jharkhand	–		0.890	1
Karnataka	0.637	10	0.683	7
Kerala	0.218	17	0.246	18
Madhya Pradesh	0.754@	1	0.751	3
Maharashtra	0.710	4	0.663	8
Orissa	0.749	2	0.700	6
Punjab	0.401	16	0.263	17
Rajasthan	0.657	8	0.565	12
Tamil Nadu	0.636	11	0.508	15
Uttar Pradesh	0.649	9	0.604	10
West Bengal	0.689	6	0.570	11

Note: * Data from 55th round of NSSO (1999 – 2000), NFHS-2 and Census 1991 have been used in calculating the index values. In the text of the Report, we designate this value as pertaining to the period 1998 – 2000, since only the data on access to safe drinking water and access to toilets relate to1991 and all other data pertain to 1998 – 2000.

**Data from 61st round of the NSSO (2004 – 05), NFHS-3 and Census 2001 have been used in calculating the index values. In the text of the Report, we designate this value as pertaining to the period 2004 – 06, since only the data on access to safe drinking water and access to toilets relates to 2001, and the other data pertain to 2004 – 06.

#Includes Jharkhand; @Includes Chhattisgarh

Second, in both periods, some States do very badly, while a few do a good deal better, though they lag behind Kerala. The better performers include Himachal Pradesh, Punjab and Jammu and Kashmir, all of which report an index value below 0.5 in both periods. Andhra Pradesh, Madhya Pradesh, Bihar, Gujarat, Karnataka, Orissa and Maharashtra perform poorly in both periods, though Orissa shows improvement over the period 1998 – 2000 to 2004 – 06. The middling States include Uttar Pradesh, Tamil Nadu, Rajasthan and West Bengal.

Third, between 1998 – 2000 and 2004 – 06, many States have remained in the same category. Ten States – Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh and Maharashtra – all have maintianed the same level of food insecurity in 2004 – 06 as compared to 1998 – 2000. Of course, Kerala and Jammu and Kashmir are among the better performing States in both periods and have shown only a marginal worsening.

Table 2.11 The States that fall under Different Categories at Two Time Points

Level of Insecurity	1998 - 2000*	2004 - 06*
Very low	KE	PU, HP, KE
Low	J&K, HP, PU	J&K
Moderate	AS, HA	AS, HA, RA, TN, UP, WB
High	AP, BI, GU, KA, MP, MA, RA, TN, UP, WB	AP, BI, GU, KA, MP, MA, OR
Very high		CHT, JD

Note: *see the notes under table 2.10

Maps 8a and 8b clearly show the change in the relative positions of the States between 1991, 1998 – 2000 and 2001, 2004 – 06, in terms of increase or decrease in the composite index obtained

from amalgamating the chosen seven indicators. Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and Himachal Pradesh are the States that have shown some improvement by moving into a less food insecure category. Kerala, Jammu and Kashmir, Assam, Haryana, Andhra Pradesh, Bihar, Gujarat, Karnataka, Orissa, Madhya Pradesh and Maharashtra remain in the same category throughtout.

The improvement is most striking in the case of Himachal Pradesh and only marginal in the case of Punjab. The other four States have shown significant, though not dramatic, improvement.

While detailed analyses of the performance of each State in the two periods and the reasons thereof would require more research, some key aspects can be highlighted from a general understanding of the prevailing scenario in the different States.

It is no surprise that the States generally regarded as backward in socio-economic terms have done poorly with respect to food insecurity. These include Bihar including Jharkhand and Madhya Pradesh including Chhattisgarh. These States typically do better in terms of two input indicators – calorie intake and access to safe drinking water – but do very poorly with respect to almost all the outcome indicators. But the question often raised is 'Why does Gujarat, a leading State in terms of per capita GDP, growth rate of GDP and industrialisation, do so poorly?' The answer, quite simply, is that it does poorly on most indicators, both in absolute terms and in relation to many other States. It does well only on the indicator of proportion of households with access to safe drinking water, an indicator that is flawed in its very definition. Also, during a period when the proportion of children stunted has declined across the country, Gujarat shows little improvement between 1998 – 99 and 2005 – 06. The proportion of children with anaemia shows an increase in Gujarat between 1998 – 99 and 2005 – 06, and so does the proportion of women with anaemia. It may also be recalled here that Gujarat shows a rapidly declining number of girls per 1000 boys in the age group of 0 to 6 years between 1981 and 2001, especially between 1991 and 2001, reflecting a large degree of anti-female bias and strong son preference. The other poor performance that may be regarded by some as surprising is Karnataka's. It should not really surprise one too much, but perhaps the fact that Bangalore is seen as a growth powerhouse leads to the expectation of a sufficiently wide and deep trickle-down effect! The poor performance of the State in both periods is practically across the board, in other words, in respect of most indicators. There are three indicators that improve for Karnataka between the two periods, but not by much the input indicators pertaining to access to safe drinking water and toilet facility and the outcome indicator pertaining to proportion of women with CED. Its indicator values have worsened sharply, both absolutely and relatively, in respect of anaemia and stunting among children between 1998 – 2000 and 2004 – 06.

Again, Karnataka, like Gujarat, demonstrates the disconnect between GDP growth and food security during the period since the mid to late 1990s.

Can one readily draw inferences about what needs to be done from the preliminary exercise of index construction and computation for different States at two different periods? While it would be somewhat simplistic to do so, one can make the point that for otherwise 'better-off' States like Gujarat and Karnataka, attention needs to be paid both to focused interventions in the areas of women and child health and nutrition and to making the growth process more inclusive by policies promoting gender equality, universal education and

healthcare and universal PDS[34]. For the States which do poorly on both general development indicators and on food security indicators, the answers have to be found in more effective State intervention and expanded allocations across the board. In general, however, one must not mechanically apply the 'availability – access – absorption' approach immediately to States to arrive at concrete policy recommendations proceeding directly from the indicator values.

Recalling that Bihar and Madhya Pradesh in this exercise refer to the undivided States of the same name from 1991 – in other words, they include the newly created States of Jharkhand and Chhattisgarh – one can see that the population of the ten States which have become more food – insecure between 1998 – 99 and 2004 – 06 accounts for a majority of the Indian population. In the case of the seven States that have shown improvement, the more populous States have shown only modest or marginal gains. On the whole, it is clear that, by our measure of food insecurity, the period of economic reforms and high GDP growth has not seen an improvement in food security but deterioration for the majority of Indian States, which, moreover, account for a majority of the Indian population even though they may remain in a same category on the food insecurity scale. This should not be altogether surprising. Many analysts have pointed out that the period of reforms has been marked by deflationary macroeconomic policies that have hurt the purchasing power of the bulk of the working population, especially in the case of rural areas. Attention has been drawn to the overwhelming crisis in agriculture, marked not only by the tragic and visible phenomenon of farmers' suicides in several States, but by the near stagnation in foodgrain output for almost a decade now. A number of factors have contributed to the crisis of the rural and agrarian economy, including the cutbacks in rural development expenditures of the government, the sharp increase in input costs for farmers because of the reduction in input subsidies as part of the fiscal squeeze, the fall in output prices, the credit squeeze as a consequence of financial liberalisation resulting both in higher real interest rates and in lower rates of growth of institutional credit for agriculture and allied activities and the reduction in government investments and other expenditure on agricultural research and development and extension. Growth of employment in rural India was extremely poor in the period between 1993 – 94 and 1999 – 2000, going by the data from the 50th and 55th rounds of the NSSO, and the increase in the rate of growth of rural employment between 1999 – 2000 and 2004 – 05 as seen from the 61st round of the NSSO has still not been sufficient to reach the rural employment growth rates of the period 1983 – 1993/94. Further, much of the growth in employment in the period 1999 – 2000 to 2004 – 05 has been in self-employment and in informal sector activities, raising serious questions about the quality and terms of employment and the impact on food security of such employment. What our data and analysis show is that the picture of deterioration in food security is also evident from outcome measures which dominate our index, especially when we drop the input indicator 'percentage of households without access to safe drinking water'.

[34] This point is also clearly brought out by the recently released India State Hunger Index by IFPRI (Menon, et. al., 2008). For instance, Gujarat and Karnataka fall in the extremely alarming category of hunger in the study leading to the comment: "A closer examination of the past and current investments made by these States in social protection, health and nutrition programs can help inform the debate about policy instruments to protect populations against hunger even in the face of poverty" While the reference cited is not free of methodological problems, the point made by its authors remains valid.

Categorisation of States Using Alternative Composite Index Values

In Chapter 2, we have worked out a composite index of seven indicators with the following indicators:

1. Percentage of population consuming less than 1,890 Kcal.
2. Percentage of households without access to safe drinking water.
3. Percentage of households without access to toilets within the premises.
4. Percentage of women with anaemia.
5. Percentage of women with CED.
6. Percentage of children with anaemia.
7. Percentage of children who are stunted.

A few combinations of exclusion and inclusion are tried out in the following sections, to establish that there is no major change in the outcome. For instance, the percentage of underweight children (6 – 35 months) has been considered as an indicator (Table 2A) and the index worked out replacing percentage of stunted children, as illustrated here.

A.1 Composite Index with Seven Indicators, Replacing Stunting with Underweight

In Chapter 2, we have used the percentage of children who are stunted as an indicator of child nutrition as it explains the chronic damage caused to the nutritional status of children. But in the literature, the percentage of children who are

Table 2A Percentage of Rural Children Underweight (age 6 - 35 months)

States	1998-99	2005-06
Andhra Pradesh	40.7	40.4
Assam	36.6	41.1
Bihar	55.1	59.3
Chhatisgarh		54.2
Gujarat	49.3	50.0
Haryana	35.6	41.8
Himachal Pradesh	44.8	36.4
Jammu & Kashmir	37.2	31.6
Jharkhand		63.1
Karnataka	46.4	45.1
Kerala	28.0	31.9
Madhya Pradesh	58.4	62.6
Maharashtra	53.2	43.5
Orissa	55.5	45.7
Punjab	31.8	29.9
Rajasthan	51.9	45.9
Tamil Nadu	38.3	34.8
Uttar Pradesh	53.6	45.2
West Bengal	52.6	46.7
All India	**49.6**	**49.0**

Note: Data has been sourced from the Fact Sheets and not the printed reports, and there may be marginal differences between the two sources.

Source: NFHS-2 & 3

underweight is often considered as an indicator of malnutrition. Keeping this in mind, we have recalculated the index values using the percentage of children aged 35 months or younger as an indicator in place of the corresponding percentage of stunted children. The results are presented in Table 2A1 and Maps A1.1 and A1.2.

Table 2A1 Categorisation of States, using Composite Index with 7 Indicators (including Children Underweight and excluding Children Stunted)

Level of insecurity	1998 – 2000	2004 – 06
Very low (0.218 – 0.357)	KE, PU	KE, PU, J&K, HP
Low (0.357 – 0.496)	J&K, HP	HA
Moderate (0.496 – 0.635)	HA, AS, UP	AS, UP, RA, AP, TN, KA, WB, MA
High (0.635 – 0.774)	RA, AP, TN, KA, GU, WB, BI, MA, MP	GU, BI, MP, OR, CHT
Very High (0.774 – 0.913)	OR	JD

The States that fall under each category at two time points are given in the table. The States that have shown improvement are Jammu and Kashmir, Himachal Pradesh, Haryana, Rajasthan, Andhra Pradesh, West Bengal, Tamil Nadu, Orissa, Maharashtra and Karnataka. No State has moved to a more insecure category. Punjab, Kerala, Assam, Uttar Pradesh, Bihar, Madhya Pradesh and Gujarat are the States that remain in the same category without much change.

For both periods, the replacement of percentage of children stunted by that of underweight children changes the picture only marginally. For 1998 – 2000, Punjab and Uttar Pradesh move to the next higher category while Orissa moves down a category. For all the other States, there is no change in category of food insecurity. For 2004 – 06, Jammu and Kashmir, Haryana, Andhra Pradesh, Karnataka, Maharashtra and Chhattisgarh improve to the next lower category of food insecurity. All the other States remain in the same category as before.

A. 2 Composite Index with Six Indicators Excluding Rural Households Without Access to Safe Drinking Water

In view of the problems identified in using access to safe drinking water as an indicator, it was decided to work out the index values excluding this indicator. Table 2A2 presents the index values when this is done and the same is illustrated in Maps A2.1 and A2.2.

Table 2A2 Categorisation of States using Composite Index with 6 Indicators, (including Children Stunted and excluding Access to Safe Drinking Water)

Level of insecurity	1998 – 2000	2004 – 06
Very low (0.087 – 0.252)	KE	KE,
Low (0.252 – 0.418)		HP, PU, J&K
Moderate (0.418 – 0.583)	J&K, HP, PU	AS, TN
High (0.583 – 0.749)	AS, HA, AP, RA, UP, TN, KA, GU, MA	RA, HA, WB, UP, AP, MA, OR
Very High (0.749 – 0.914)	OR, WB, MP, BI	KA, GU, MP, BI, CHT, JD

The States that fall under each category at two time points are given in the table. The States that have shown improvement are Punjab, Himachal Pradesh, Jammu and Kashmir, Assam, Tamil Nadu, Orissa and West Bengal. Karnataka and Gujarat are the two States that have worsened. All the other States remain in the same category in both time periods.

For the period 1998 – 2000, when compared with the corresponding composite index of seven indicators including percentage of households without access to safe drinking water, Assam, Bihar, Haryana, Himachal Pradesh, Jammu and Kashmir, Madhya Pradesh, Orissa, Punjab and West Bengal have all moved to a more insecure category. For the period 2004 – 06, nine States have remained in the same category as before namely Kerala, Jammu and Kashmir, Assam, Tamil Nadu, Andhra Pradesh, Maharashtra, Orissa, Chhattisgarh and Jharkhand. All other States have moved to more insecure categories on the exclusion of access to safe drinking water as an indicator.

A.3 Composite Index with Six Indicators, with Percentage of Children Underweight Replacing Stunting and Excluding Access to Safe Drinking Water

In the same manner as was done earlier with the seven indicators based index, and for the same reasons, we have also worked out the index values in the two periods when the percentage of children underweight replaces the percentage stunted in the six indicators based index. The results are shown in Table 2A3 and illustrated in Maps A3.1 and A3.2.

Table 2A3 Categorisation of States using Composite Index with 6 Indicators (Percentage of Children Underweight replacing Stunting and excluding Access to Safe Drinking Water)

Level of insecurity	1998 – 2000	2004 – 06
Very low (0.189 – 0.336)	KE	KE, HP
Low (0.336 – 0.482)	PU	PU, J&K
Moderate (0.482 – 0.629)	J&K, HP, AS, HA	AS, HA, RA, TN, WB
High (0.629 – 0.775)	AP, UP, RA, TN, KA, GU	UP, AP, MA, KA, OR, GU
Very High (0.775 – 0.922)	MA, BI, MP, OR, WB	MP, CHT, BI, JD

Let us see how this compares with the composite index (6) obtained without including access to drinking water but including percentage of children stunted rather than percentage of underweight children. For the period 1998 – 2000, Assam, Haryana and Punjab have shown improvement in the level of insecurity by one category whereas Maharashtra has worsened by moving to the next higher level of insecurity. The other States remain in the same category as before. In 2004 – 06, Gujarat, Haryana, Himachal Pradesh, Karnataka and Rajasthan have moved to the respective next lower level of food insecurity whereas the other States remain in the same category as before the change.

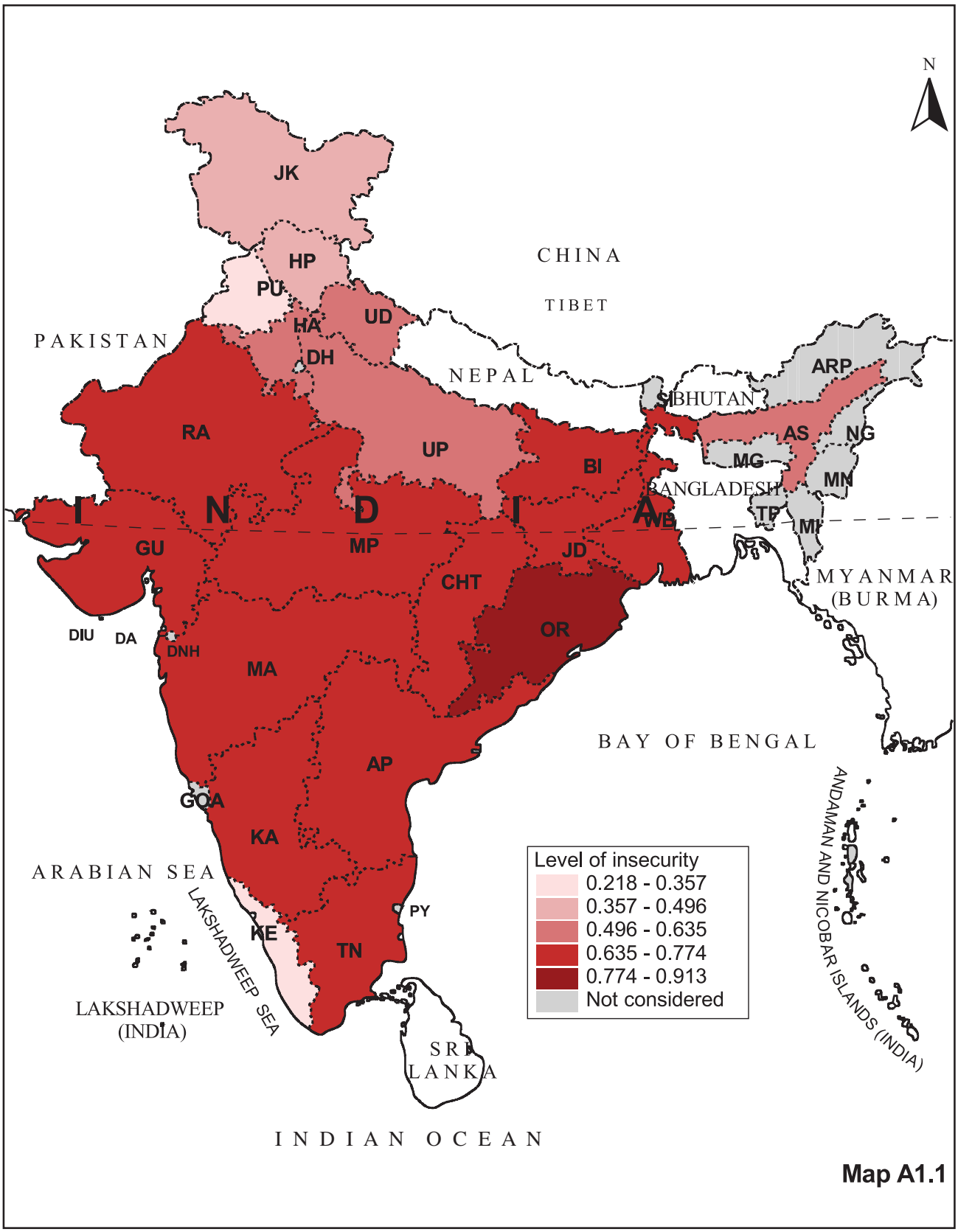
A.4 Composite Index with Six Indicators Excluding the Percentage of Children with Anaemia from the List of Seven Initial Indicators

It might be argued that the use of two anaemia-related indicators would bias the results somewhat by providing undue weight to anaemia in the overall index. It was therefore decided to work out the index values dropping the indicator 'percentage of children with any anaemia', while retaining the rest of the seven original indicators. The results are shown in Table 2A4 and Maps A4.1 and A4.2.

Table 2A4 Categorisation of States using Composite Index with 6 of the Initial 7 Indicators (excluding Percentage of Children with Anaemia)

Level of insecurity	1998 – 2000	2004 – 06
Very low (0.189 – 0.336)	KE, PU	KE, PU, HP
Low (0.336 – 0.482)	HP, J&K	J&K
Moderate (0.482 – 0.629)	HA, RA, AS, KA, TN, UP	HA, RA, AS, TN UP, AP, WB
High (0.629 – 0.775)	AP, WB, GU, MA, BI, MP, OR	MP, BI, MA, KA, OR, GU
Very High (0.775 – 0.922)		JD, CHT

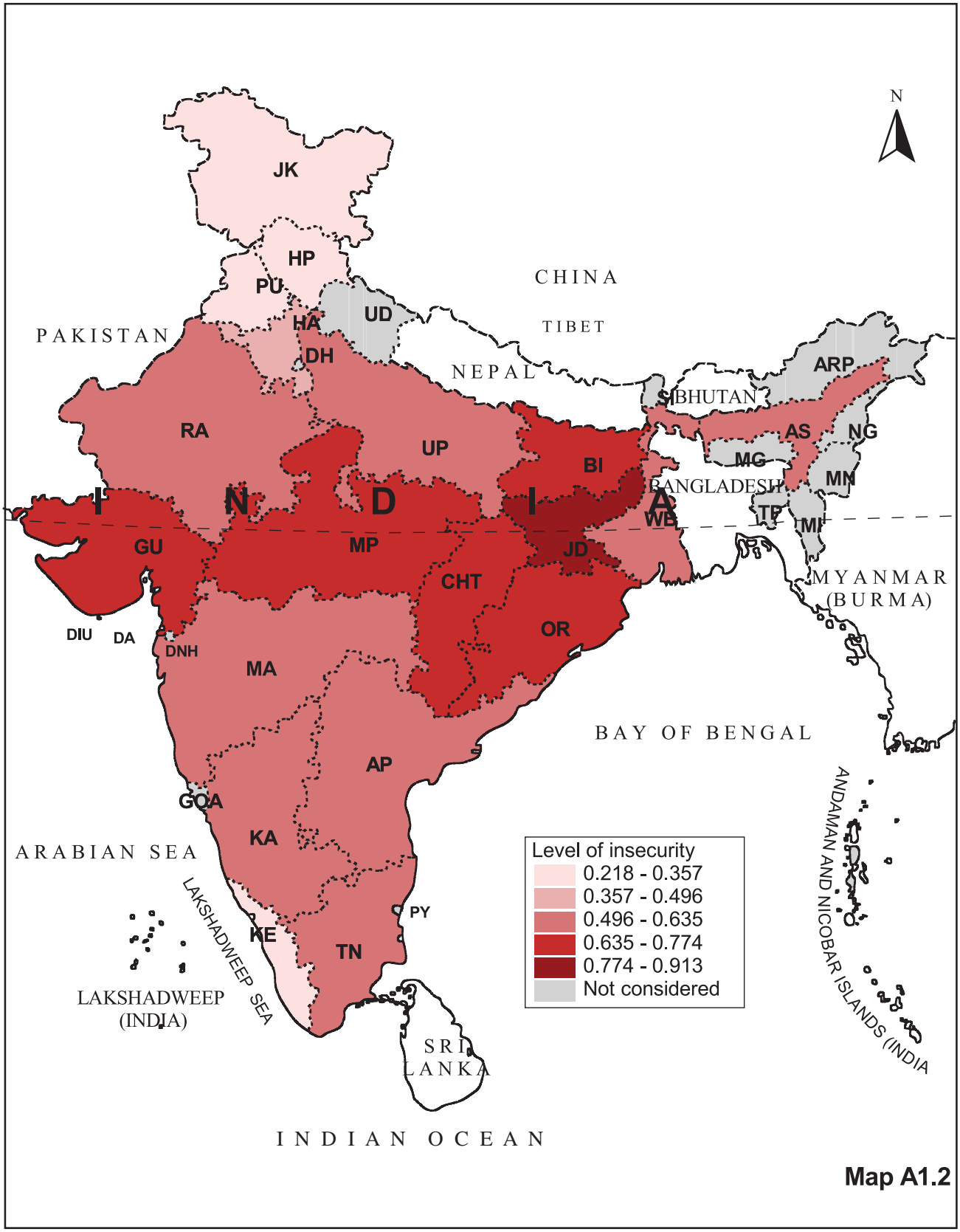
Food Insecurity in Rural India (7) (1998 – 2000)
(including Children Underweight and excluding Children Stunted)



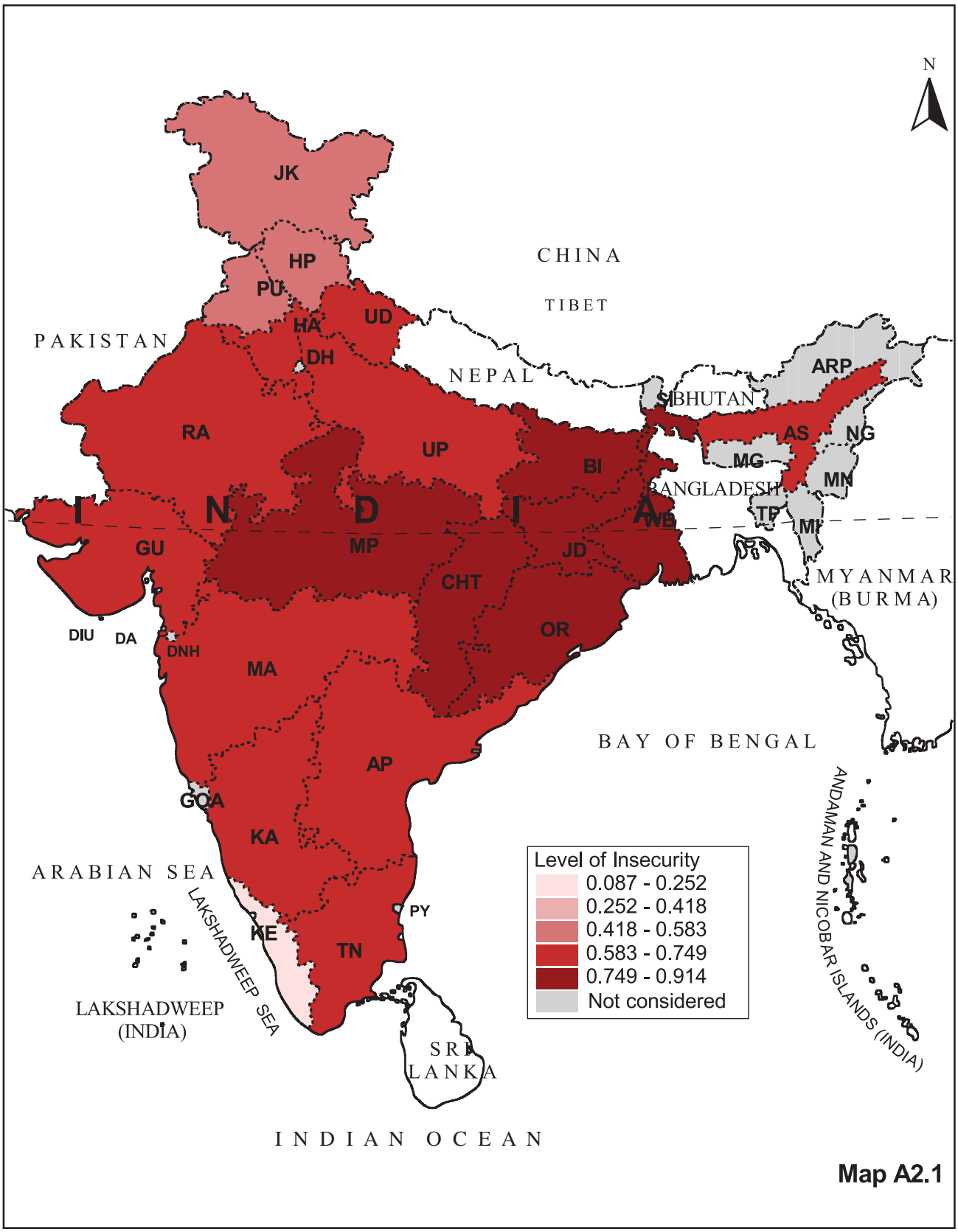
Map A1.1

Food Insecurity in Rural India (7) (2004 – 2006)

(including Children Underweight and excluding Children Stunted)

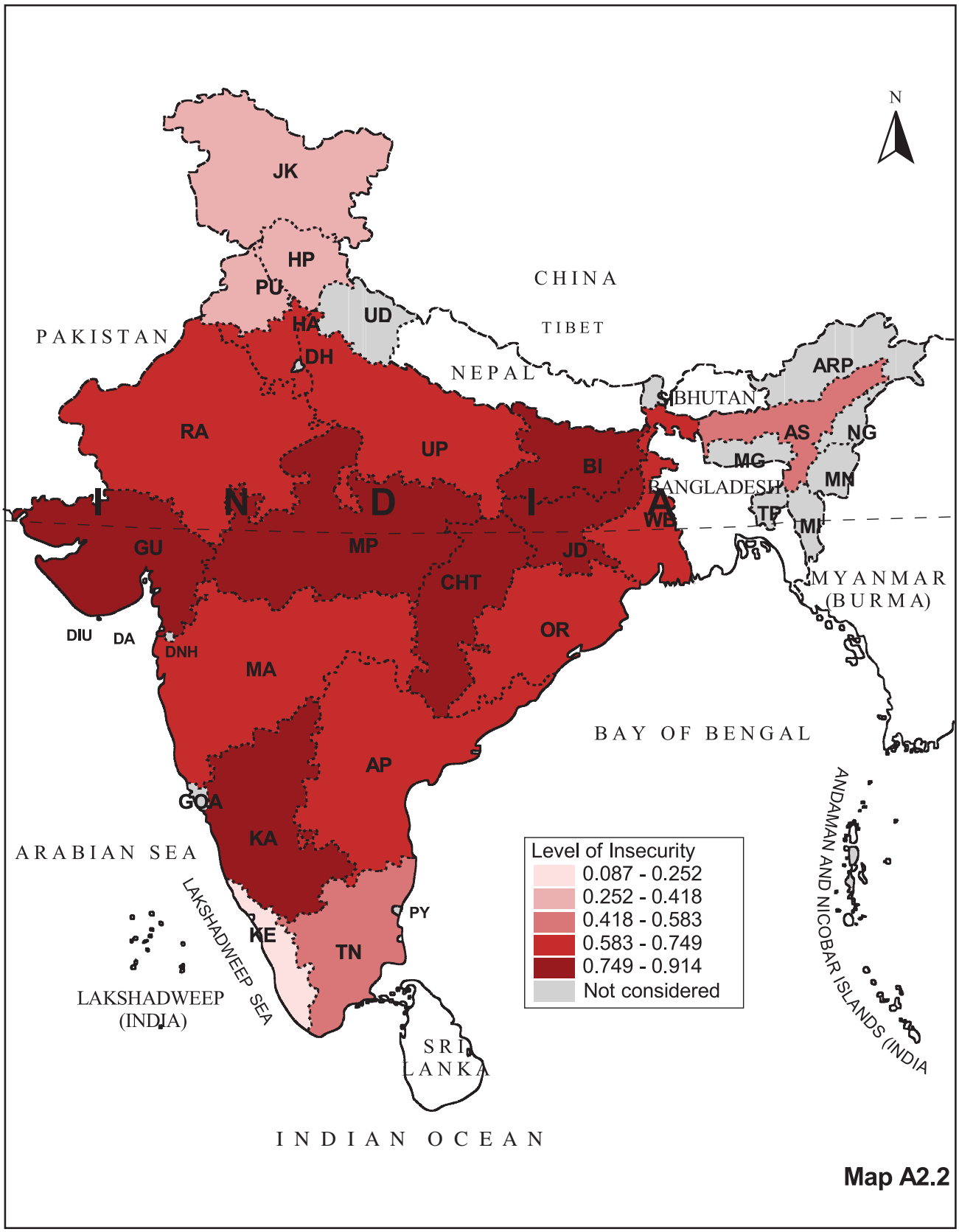


Food Insecurity in Rural India (6), (1998 – 2000)
(including Children Stunted and excluding Safe Drinking Water)



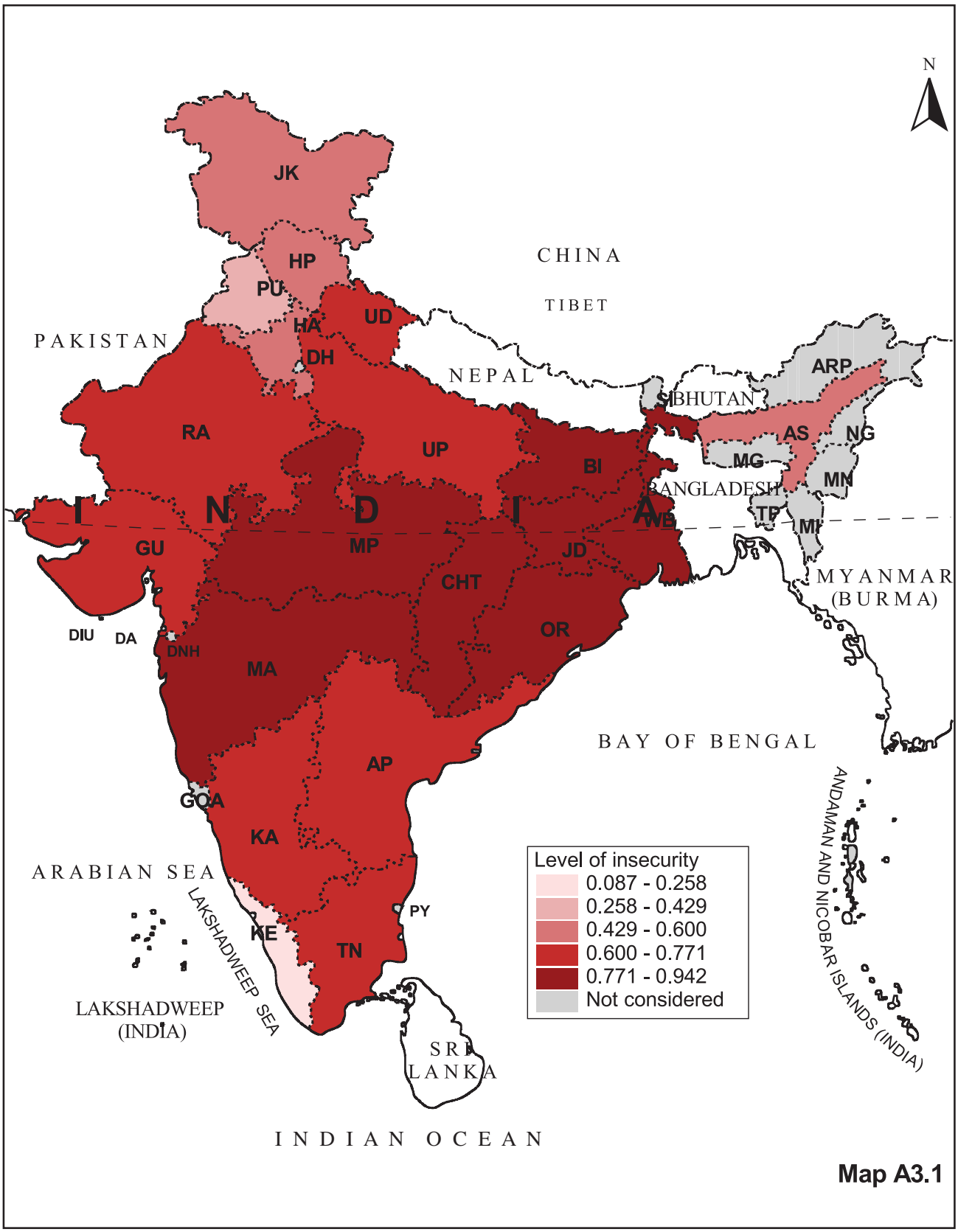
Map A2.1

Food Insecurity in Rural India (6), (2004 – 2006)
(including Children Stunted and excluding Safe Drinking Water)



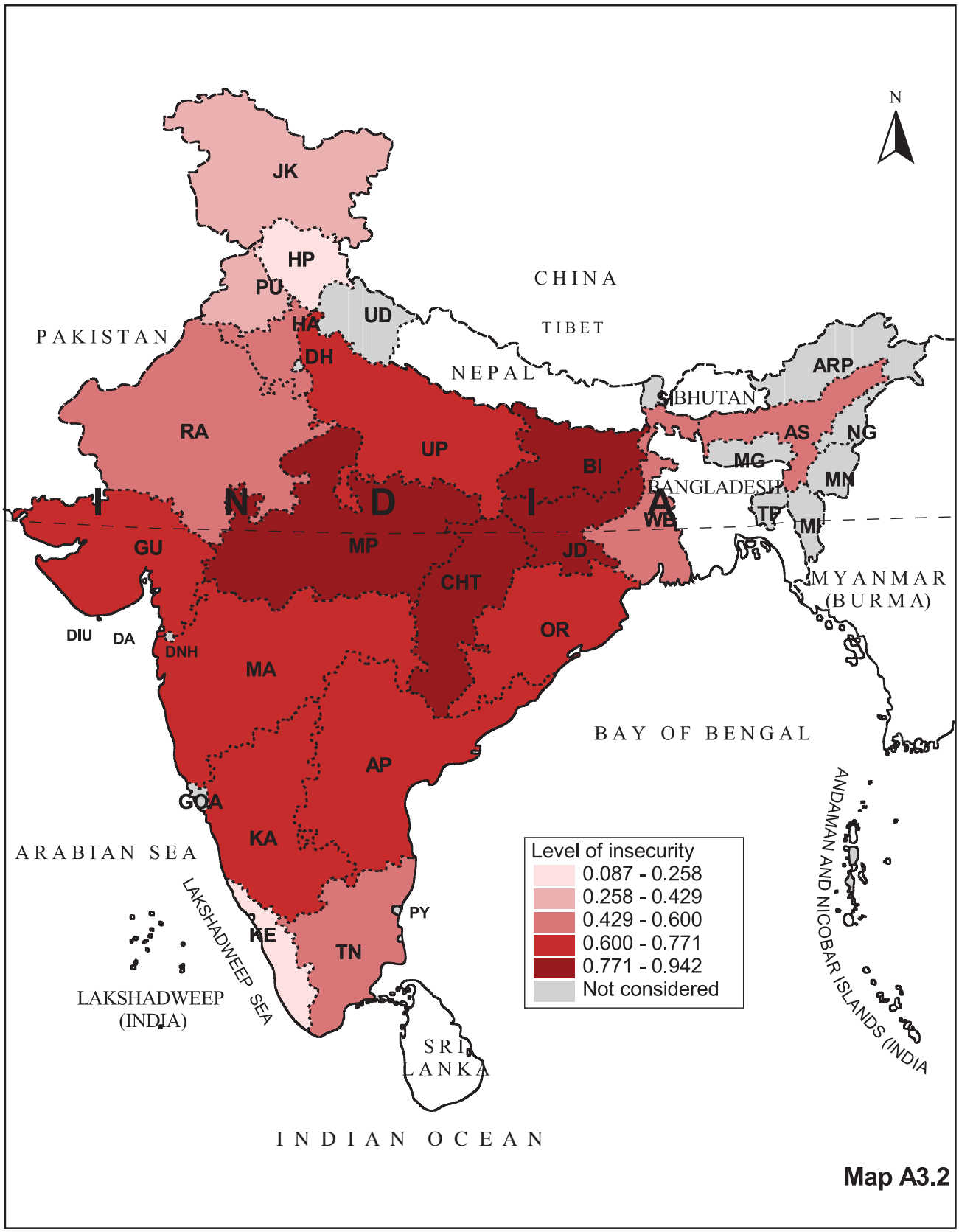
Map A2.2

Food Insecurity in Rural India (6) (1998 – 2000)
(including Children Underweight and excluding Safe Drinking Water)

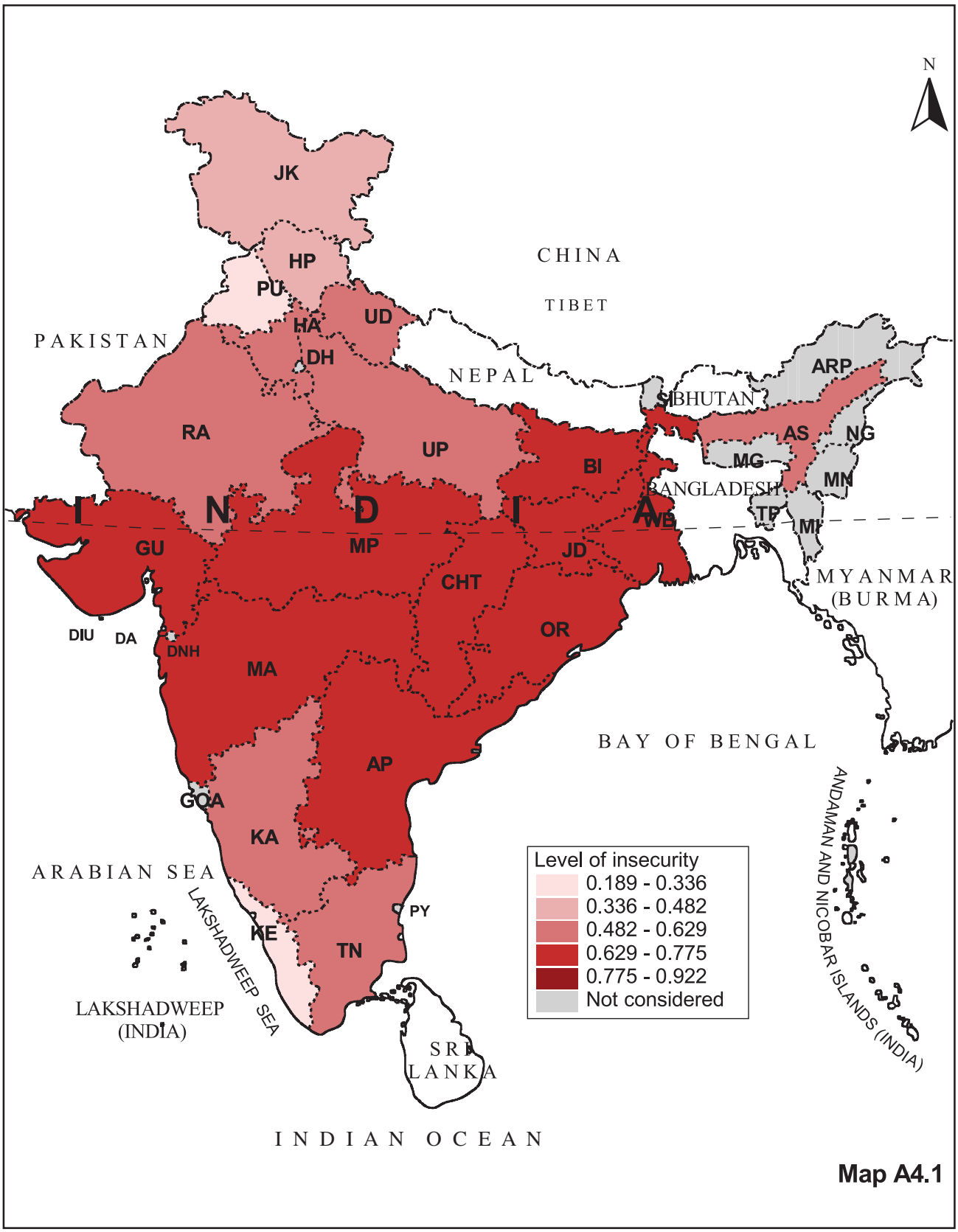


Map A3.1

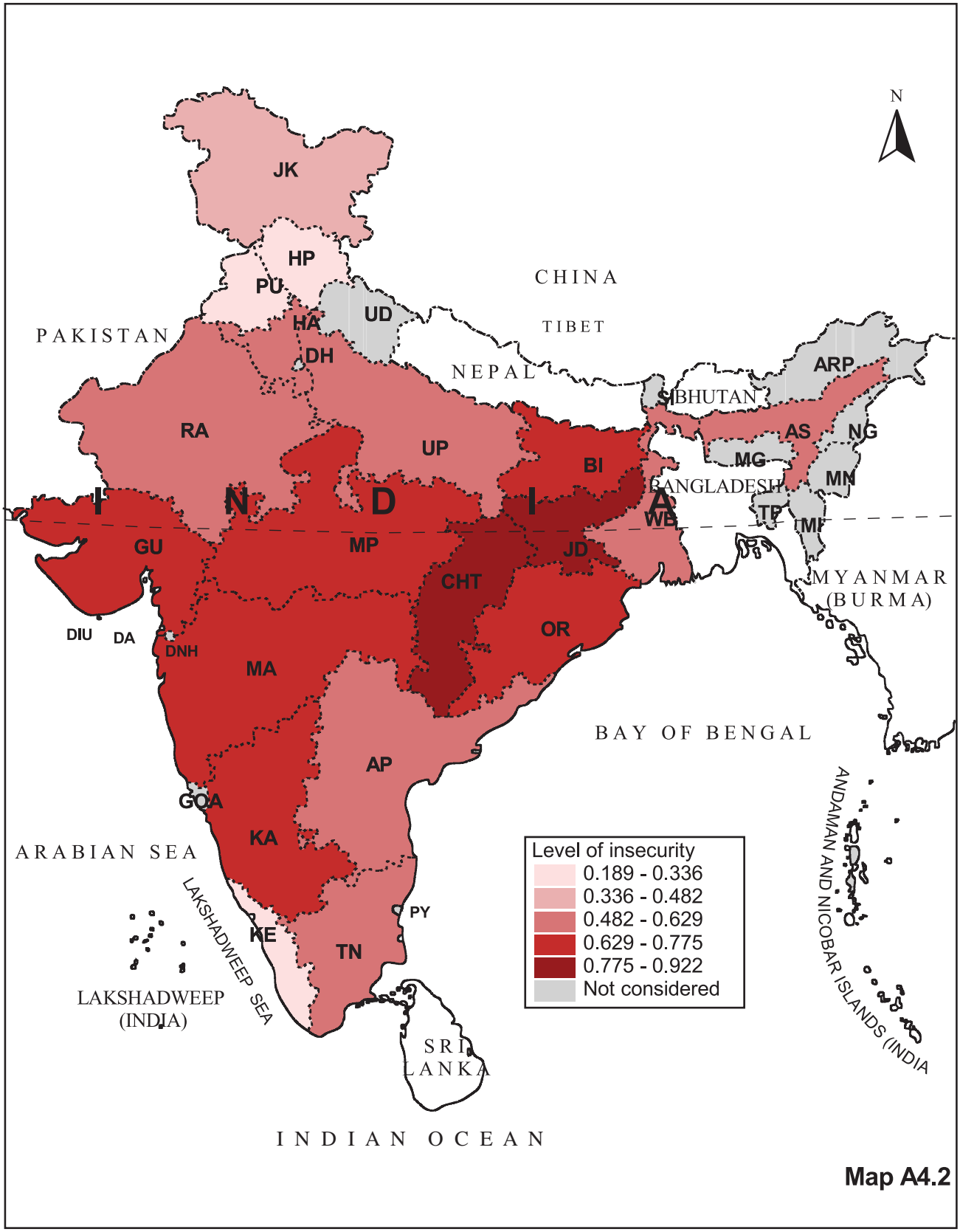
Food Insecurity in Rural India (6) (2004 – 2006)
(including Children Underweight and excluding Safe Drinking Water)



Food Insecurity in Rural India (6) (1998 – 2000)
(excluding Children Anaemia)

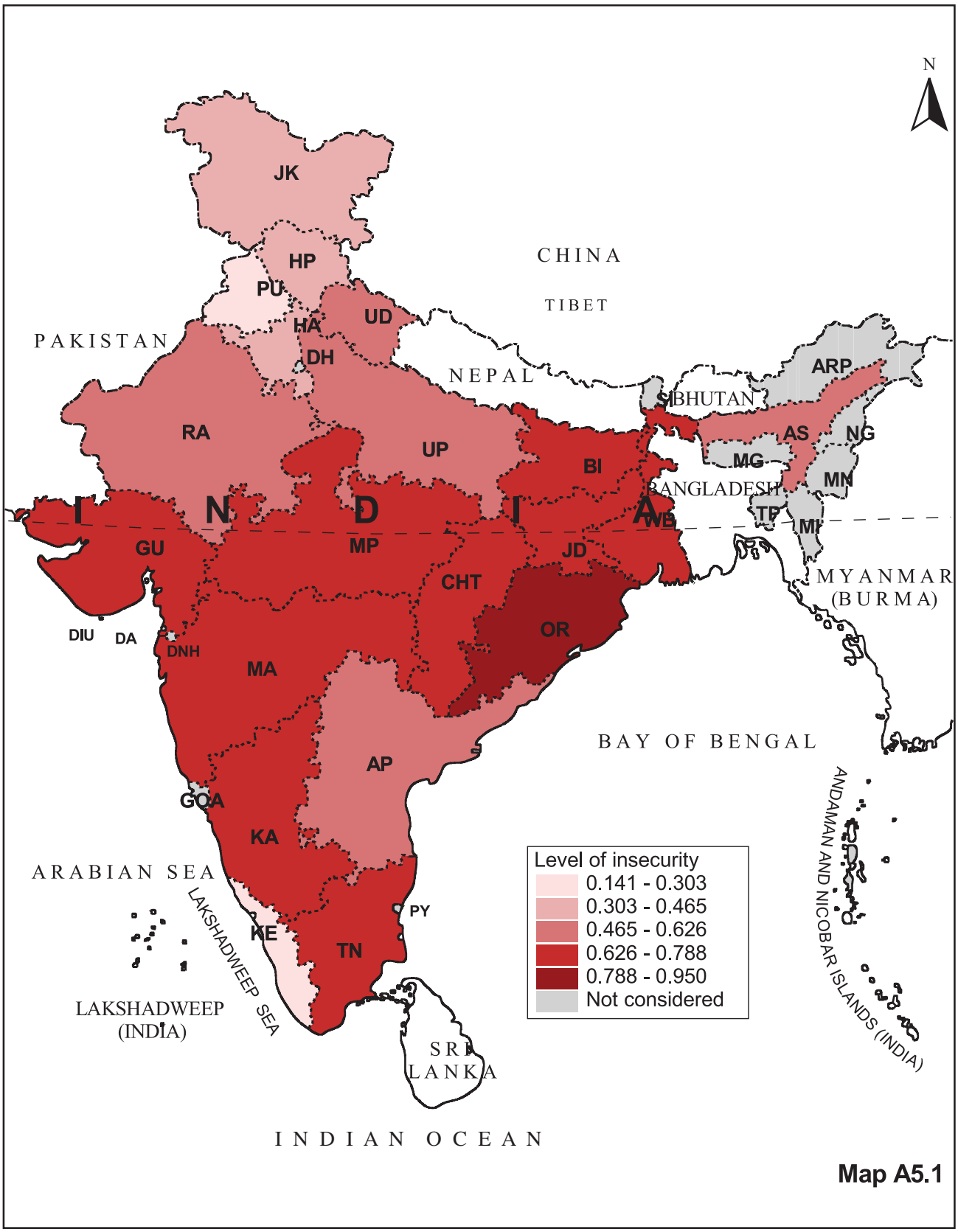


Food Insecurity in Rural India (6) (2004 – 2006)
(excluding Children Anaemia)

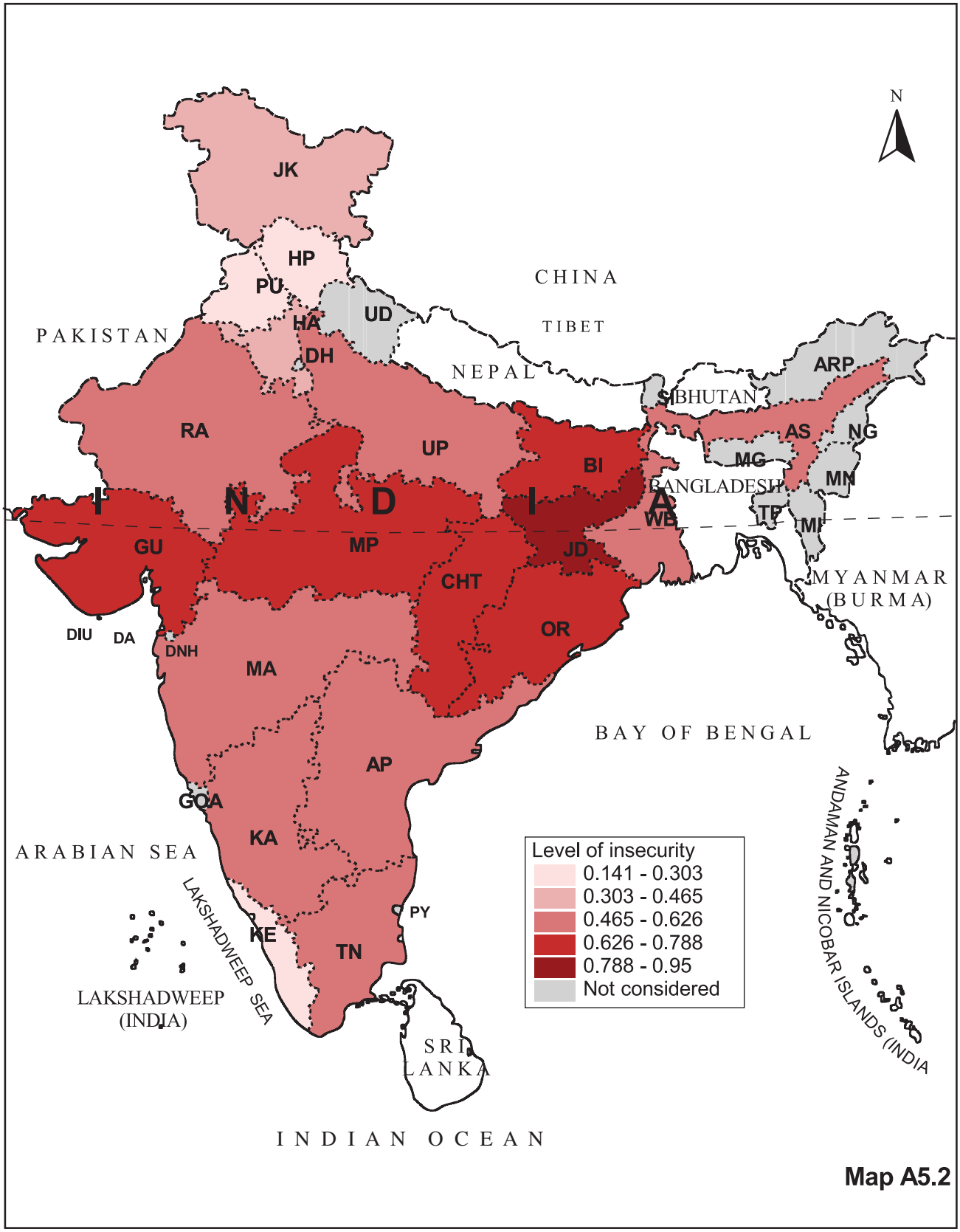


Map A4.2

Food Insecurity in Rural India (6) (1998 – 2000)
(including Children Underweight and excluding Children Anaemia)



Food Insecurity in Rural India (6) (2004 – 2006)
(including Children Underweight and excluding Children Anaemia)



The States that fall under each category at two time points are given in the table. The States that have shown improvement over the period 1998 to 2006 are Himachal Pradesh, Andhra Pradesh and West Bengal. The only State that has moved to a more insecure category is Karnataka. All other States remain in the same category in 2004 – 06 that they belonged to in 1998 – 2000.

In both periods, the categorisation is similar to that obtained for the corresponding period using the initial seven indicators.

A.5 Composite Index with Six Indicators, Excluding Percentage of Children with Anaemia and Replacing Percentage of Stunted Children with Underweight

One can also consider a double change – exclude percentage of children with any anaemia and simultaneously replace percentage of children stunted by the percentage of children underweight. This has also been considered and worked out and the results are shown in Table 2A5 and Maps A5.1 and A5.2.

Table 2A5 Categorisation of States using Composite Index with 6 Indicators (excluding Children with Anaemia and Percentage of Children Underweight replacing Stunting)

Level of insecurity	1998 – 2000	2004 – 06
Very low (0.189 – 0.336)	KE, PU	KE, HP, PU
Low (0.336 – 0.482)	J&K, HP, HA	J&K, HA
Moderate (0.482 – 0.629)	AS, RA, UP, AP	UP, AS, RA, TN, WB, AP, MA, KA
High (0.629 – 0.775)	TN, KA, GU, WB, BI, MA, MP,	OR, GU, BI, CHT, MP
Very High (0.775 – 0.922)	OR	JD

A comparison of Table 2A5 with Table 2A4 shows only marginal changes in categorisation. For 1998 – 2000, Haryana, Karnataka and Tamil Nadu move to the respective next lower level of food insecurity, while Andhra Pradesh and Orissa move to the respective next higher level. All other States remain in the same category they were in under both reckonings.

A.6 Summarising the Picture under Different Variants of the Index

Tables 2A6 and 2A7 provided here show all the different rankings of States using different variants of the index measure for the two time periods considered.

It is evident that the changes in the index definitions do not change the ranking of the States significantly. In particular, the broad categorisation of the top and the bottom States in terms of food security remains intact. Thus, under all the definitions tried out, the six most food-insecure States in 1998 – 2000 turn out to be Bihar, Orissa, Madhya Pradesh, West Bengal, Gujarat and Mahrashtra. In 2004 – 06, the six poorest performing States turn out to be Chhattisgarh, Jharkhand, Bihar, Madhya Pradesh, Orissa and Gujarat under practically all the definitions, the only exception being that Orissa ranks seventh from the bottom when the index is computed with all the initial indicators except lack of access to safe drinking water. Similarly, the top six performers in 1998 – 2000, under all the different definitions, turn out to be Kerala, Punjab, Himachal Pradesh, J&K, Haryana and Assam. In 2004 – 06, the same picture more or less remains intact, except that Tamil Nadu ends up as the sixth State under four variants, Assam under two and Uttar Pradesh under one.

It would thus appear that the initial choice of indicators was not too far off the mark, and its rankings are fairly well corroborated by alternative measures of the index tried out here.

Table 2A6 Composite Indices and Ranking of States (1998 – 2000)

States	CI(7)_stunt	R	CI(7)_unwt	R	CI(6)_wodw	R	CI(6)_Woana	R	CI(6)_woCa +unwt	R	CI(6)_wodw +unwt	R
	1998 – 00		1998 – 00		1998 – 00		1998 – 00		1998 – 00		1998 – 00	
Andhra Pradesh	0.658	**7**	0.640	**9**	0.678	**11**	0.642	**7**	0.621	**9**	0.657	**11**
Assam	0.595	**12**	0.519	**12**	0.593	**13**	0.608	**11**	0.519	**12**	0.504	**13**
Bihar	0.745	**3**	0.739	**4**	0.795	**1**	0.710	**3**	0.703	**4**	0.788	**4**
Chhattisgarh												
Gujarat	0.699	**5**	0.700	**6**	0.748	**6**	0.667	**5**	0.668	**6**	0.749	**6**
Haryana	0.594	**13**	0.504	**13**	0.641	**12**	0.526	**13**	0.422	**13**	0.536	**12**
Himachal Pradesh	0.448	**15**	0.446	**14**	0.488	**14**	0.409	**15**	0.407	**14**	0.486	**14**
Jammu and Kashmir	0.476	**14**	0.431	**15**	0.476	**15**	0.416	**14**	0.359	**15**	0.431	**15**
Jharkhand												
Karnataka	0.637	**10**	0.655	**7**	0.691	**7**	0.620	**10**	0.641	**8**	0.712	**7**
Kerala	0.218	**17**	0.218	**17**	0.087	**17**	0.254	**17**	0.254	**16**	0.087	**17**
Madhya Pradesh	0.754	**1**	0.767	**2**	0.783	**2**	0.745	**2**	0.759	**2**	0.797	**3**
Maharashtra	0.710	**4**	0.740	**3**	0.749	**5**	0.683	**4**	0.718	**3**	0.784	**5**
Orissa	0.749	**2**	0.787	**1**	0.756	**4**	0.751	**1**	0.795	**1**	0.800	**2**
Punjab	0.401	**16**	0.337	**16**	0.468	**16**	0.310	**16**	0.235	**17**	0.393	**16**
Rajasthan	0.657	**8**	0.639	**10**	0.680	**10**	0.601	**12**	0.581	**11**	0.659	**9**
Tamil Nadu	0.636	**11**	0.652	**8**	0.684	**8**	0.628	**9**	0.646	**7**	0.702	**8**
Uttar Pradesh	0.649	**9**	0.627	**11**	0.683	**9**	0.629	**8**	0.602	**10**	0.657	**10**
West Bengal	0.689	**6**	0.712	**5**	0.779	**3**	0.643	**6**	0.670	**5**	0.806	**1**

CI(7)_stunt	Composite index including children stunted
CI(7)_unwt	Composite index including children underweight (excluding stunting)
CI(6)_wodw	Composite index excluding access to safe drinking water
CI(6)_Woana	Composite index excluding children anaemic
CI(6)_woCa+unwt	Composite index including underweight children and excluding anaemic children
CI (6)_wodw+unwt	Composite index including underweight children and excluding drinking water

Table 2A7 Composite Indices and Ranking of States (2004 – 06)

States	CI(7)_stunt	R	CI(7)_unwt	R	CI(6)_wodw	R	CI(6)_Woana	R	CI(6)_woCa +unwt	R	CI(6)_wodw +unwt	R
	2004 – 06		2004 – 06		2004 – 06		2004 – 06		2004 – 06		2004 – 06	
Andhra Pradesh	0.630	**9**	0.589	**9**	0.694	**9**	0.603	**9**	0.555	**10**	0.646	**9**
Assam	0.559	**13**	0.530	**13**	0.568	**15**	0.547	**12**	0.514	**13**	0.535	**15**
Bihar	0.719	**4**	0.733	**4**	0.817	**3**	0.673	**6**	0.689	**4**	0.833	**2**
Chhattisgarh	0.792	**2**	0.749	**3**	0.874	**2**	0.795	**2**	0.744	**3**	0.823	**3**
Gujarat	0.707	**5**	0.663	**6**	0.783	**5**	0.687	**5**	0.635	**6**	0.731	**5**
Haryana	0.538	**14**	0.494	**15**	0.594	**12**	0.491	**15**	0.440	**15**	0.543	**14**
Himachal Pradesh	0.238	**19**	0.236	**18**	0.258	**18**	0.268	**18**	0.265	**18**	0.256	**18**
Jammu and Kashmir	0.354	**16**	0.323	**16**	0.326	**16**	0.363	**16**	0.327	**16**	0.290	**16**
Jharkhand	0.890	**1**	0.913	**1**	0.914	**1**	0.922	**1**	0.950	**1**	0.942	**1**
Karnataka	0.683	**7**	0.630	**7**	0.763	**6**	0.656	**8**	0.594	**8**	0.701	**7**
Kerala	0.246	**18**	0.254	**17**	0.120	**19**	0.287	**17**	0.297	**17**	0.130	**19**
Madhya Pradesh	0.751	3	0.765	2	0.803	**4**	0.732	**3**	0.748	**2**	0.818	**4**
Maharashtra	0.663	**8**	0.619	**8**	0.714	**8**	0.672	**7**	0.621	**7**	0.663	**8**
Orissa	0.700	**6**	0.672	**5**	0.746	**7**	0.721	**4**	0.688	**5**	0.713	**6**
Punjab	0.263	**17**	0.223	**19**	0.307	**17**	0.189	**19**	0.141	**19**	0.260	**17**
Rajasthan	0.565	**12**	0.553	**11**	0.584	**13**	0.541	**13**	0.526	**12**	0.569	**13**
Tamil Nadu	0.508	**15**	0.512	**14**	0.569	**14**	0.523	**14**	0.527	**11**	0.573	**12**
Uttar Pradesh	0.604	**10**	0.548	**12**	0.681	**10**	0.556	**11**	0.490	**14**	0.615	**11**
West Bengal	0.570	**11**	0.566	**10**	0.645	**11**	0.590	**10**	0.586	**9**	0.640	**10**

CI(7)_stunt	Composite index including children stunted
CI(7)_unwt	Composite index including children underweight (excluding stunting)
CI(6)_wodw	Composite index excluding access to safe drinking water
CI(6)_Woana	Composite index excluding children anaemic
CI(6)_woCa+unwt	Composite index including underweight children and excluding anaemic children
CI (6)_wodw+unwt	Composite index including underweight children and excluding drinking water

PART II

Chapter 3

The Public Distribution System

3.1 Introduction

Public food delivery systems have a crucial role to fulfil in many developing economies characterised by widespread incidence of food insecurity in the population. India is no exception to this rule, notwithstanding high GDP growth rates recorded since 1980. Access to food is a major issue for a substantial section of the Indian population. It is true that independent India, in sharp contrast to India under colonial rule, has had no major famines. While this is a creditable achievement, it is also true that chronic hunger remains widespread. Six decades after independence, the country houses the largest population of malnourished people in the world. Mass deprivation still characterises India, notwithstanding significant economic advance since independence. Hunger and food insecurity are basically rooted in poverty and lack of access to productive assets or livelihood opportunities. It is this that leads us to examine the public food delivery systems in the country following the analysis of food policy and food security across States.

The Public Distribution System (PDS) could be called the flagship of public food delivery system in India. It is the oldest and also the widest in terms of coverage. This section traces the beginnings of the PDS and its evolution over the years, and analyses its operation and efficacy in addressing food insecurity. As of 2006, the PDS network distributed through more than 4,83,195 fair price shops (FPS) a few essential commodities (primarily wheat, rice, sugar and kerosene) to about 224.5 million card holders, of which 129.44 million cardholders were classified as being 'above the poverty line', 74.5 million card holders were classified as being 'below the poverty line' and 20.5 million were classifed as card holders, very poor (eligible for supply of grain at prices lower than those for BPL households), under AAY. The PDS in India is arguably the largest distribution network of its type in the world.

3.2 Historical Background of PDS

The beginnings of the PDS can be traced to the period of the Second World War when a rationing system was introduced as a wartime rationing measure. A rationing mechanism entitles households to specified quantities of selected commodities at subsidised prices. The PDS, as we know it today, has evolved considerably from these beginnings, and is widely recognised to be a key instrument of household food security (Chopra, 1981; Swaminathan, M, 2000b).

The PDS has had several distinct phases. The first phase begans with the colonial government undertaking public distribution of foodgrain in 1939 as a wartime rationing measure to ensure foodgrain availability and distribution among the urban population of Bombay (now, Mumbai). It was later extended to six other cities and a few regions (e.g., Malabar in Kerala). It ensured some degree of equitable distribution of foodgrain among urban

consumers in the context of rising prices (Swaminathan, M, 2000b).

The PDS coverage in this phase, which spanned the period from 1939 till the mid-1960s, was largely confined to urban areas. A few rural areas deficit in food were also included in the 1950s. The First Five Year Plan (1951 – 56) draft said, "The system of food controls to be maintained has to be related to the needs of the urban and other highly deficit areas. This means that cities and towns above a certain size – which might vary according to local conditions in each State – must be statutorily rationed and the needs of highly deficit areas, like Travancore-Cochin, must be similarly looked after"(Chopra, 1981).

The Foodgrains Policy Committee Report of 1950 – 51 strongly emphasised the importance of a controlled system of procurement and distribution of foodgrain. The Foodgrains Enquiry Committee of 1957 recommended opening of more FPSs in India (Chopra, 1981) to expand the reach of the PDS. In 1958, when the government decided to import wheat from USA under Public Law 480 to meet domestic foodgrain shortage, the PDS was expanded. In the period 1958 – 66, the distribution of grains through the PDS was higher than domestic procurement. This was made possible because of the substantial import of foodgrain (Swaminathan, M, 2000b).

The GR, beginning in the middle to late 1960s, changed the dynamics of foodgrain management in India. The surplus production that resulted, enabled the State to develop a system of procurement and countrywide public distribution of foodgrain at affordable prices to the urban working people in the first instance. This was crucial to the profitability of industry as well, since it helped rein in wages. Surpluses of wheat and rice were produced and procured in some regions, like the North-Western region (especially Haryana, Punjab and western Uttar Pradesh) and the PDS helped redistribute the grain to foodgrain deficit States. Through the PDS and through the buffer stock operations of the FCI, the price of grain to the ultimate consumers could be stabilised to some extent, and regional imbalances in foodgrain production and consumption addressed.

While the emphasis in government's foodgrain policy between 1958 and 1966 was on holding the price line and minimising food price rise for the consumer, there was greater focus post-1966 on giving remunerative prices to farmers and protecting them from large price fluctuations. The severe drought in 1965 – 66 and the embarrassing dependence on foodgrain imports, which made India's foreign policy vulnerable to pressures on the food front, enhanced the importance of both increasing availability of foodgrain and ensuring access to food for the vulnerable sections. As already highlighted in Chapter 1, the FCI was set up for procurement of foodgrain from surplus States and sale to deficit States, for distribution through the PDS. The FCI was also mandated to maintain buffer stocks and engage in open market sales as and when necessary to ensure foodgrain price stability in the market. The CACP was also set up to undertake systematic cost of cultivation studies with respect to key crops and recommend, on the basis of such studies, minimum support prices (MSP) for the crops concerned (Chopra, 1981; Rao, 2006; Swaminathan, M, 2000b).

In 1966, following the recommendations of a study team on FPS headed by V.M. Dandekar, the number of FPSs were increased to 1,14,200 in 1967 covering 280 million of the population. The network distributed 13.2 MT of foodgrain in 1967. Further, the number of commodities distributed through PDS was also increased in the 1970s (Chopra, 1981).

Till late 1970s, however, PDS was still mainly confined to urban and food deficit areas. The main objective was price stabilisation. But recurrent experience of crop failures, food shortages and price fluctuations led to the envisioning of the PDS as a permanent and universal programme of foodgrain distribution. The Sixth Five Year Plan (1980 – 85) made the PDS a stable and permanent feature of the strategy to control prices, reduce fluctuations

and achieve equitable distribution of essential consumer goods, particularly foodgrain. The Essential Supplies Programme (ESP) was introduced in 1982 as the 17th point of the 20-point programme of the then government. The ESP was envisaged as a stable and permanent feature of this strategy. ESP emphasised on expanding PDS outreach through more FPS outlets including mobile FPSs. The number of FPSs, which had increased from 1.14 lakhs in 1967 to 2.30 lakhs in January 1980, increased further to 3.02 lakhs by January 1984. The Government of India supplied essential commodities (wheat, rice, levy sugar, imported edible oil, kerosene and soft coke) and the States had the option to add other items. The Department of Civil Supplies in the Ministry of Food and Civil Supplies was put in charge of PDS. Consumer Advisory Committees were constituted at district, block and *tehsil* levels in order to inspect the functioning of PDS (GoI, 2005).

The Seventh Five Year Plan period saw further reinforcement of these measures. In 1987 – 88, PDS was added to the Minimum Needs Programme to ensure availability of essential items at reasonable prices to the vulnerable sections of the population (Dutta, 2006). In most parts of the country, up to 1997, the PDS was universal. All rural and urban households with a registered residential address were entitled to rations, made available through a network of FPSs. Eligible households were given a ration card that entitled them to buy fixed rations of selected commodities. The exact entitlement (quantity, range of commodities and prices) varied across States (Swaminathan, M, 2003). It can be seen from Table 3.1 that, as of late 2006, there were a total of 4,83,195 FPSs in the country, with a FPS on an average serving 465 ration cardholders. There were, in all, 224.45 million ration cardholders, of whom 74.53 million were held to be below the poverty line, 129.47 million to be above it and 20.45 million to be 'the poorest of the poor' ('*antyodaya*').

Table 3.1 Fair Price Shops and Ration Cards, by State and Category, 2006

States	No. of fair price shops (FPS)	Ration cards (in 00,000)				No. of cards per FPS
		BPL	APL	AAY	Total	
Andhra Pradesh	40,995	126.24	58.72	15.58	200.43	489
Assam	33,229	13.33	34.63	5.58	53.54	161
Bihar	41,818	49.99	52.20	15.00	123.84	296
Gujarat	15,145	29.27	80.91	6.44	116.62	770
Haryana	8,672	5.69	40.24	2.38	48.31	55
Himachal Pradesh	4,207	1.35	10.50	1.54	13.39	318
Jammu and Kashmir	3,927	5.18	10.94	2.18	18.30	466
Karnataka	20,599	42.69	60.52	9.50	112.71	547
Kerala	14,153	15.02	46.35	5.41	66.78	472
Madhya Pradesh	18,688	38.78	82.27	13.27	134.32	719
Maharashtra	50,160	53.15	148.34	19.84	221.33	441
Orissa	26,217	38.35	30.66	10.01	79.02	301
Punjab	13,874	6.59	48.20	0.72	55.51	400
Rajasthan	20,881	14.14	105.80	9.00	128.94	617
Tamil Nadu*	27,995	153.53	*	14.77	168.30	601
Uttar Pradesh	74,788	65.85	274.00	40.94	380.79	509
West Bengal	20,424	33.08	113.58	14.21	160.87	788
All India	**4,83,195**	**745.32**	**1294.73**	**204.48**	**2244.53**	**465**

Note: *Separate figures of APL/BPL cards in Tamil Nadu are not available as there is no categorisation on the basis of APL/BPL in the State.

Source: a) Ministry of Consumer Affairs, Food and Public Distribution GoI, 2007; b) www.indiastat.com, March 2007.

3.2.1 Role of PDS in addressing regional imbalance in production

Maintaining price stability and making foodgrain available at reasonable prices to the poor and vulnerable across the country came to be the major objectives of the PDS. This entailed movement of foodgrain from the surplus producing states to the deficit States under the procurement and allotment mechanism.

The GR which led to a significant and sustained increase in both yields and output of wheat and rice, also led to a sharp increase in the regional concentration of production of these two crops. As Table 3.2 shows, over the last four decades, the share of the North-Northwest region has increased considerably while those of the West-Central and the south have declined. The decline of the West-Central region's share of total foodgrain output is particularly steep from the mid-1980s onwards.

Table 3.2 Share of Regions in Foodgrain Production for Selected States, Per cent (Triennial Average), 1960 – 2006

Zone	1960 – 62	1972 – 74	1984 – 86	1990 – 93	2000 – 03	2003 – 06
North-Northwest Region (Punjab, Haryana and UP[1])	26.1	30.4	39.8	38.82	41.74	40.30
West-Central Region (Rajasthan, Madhya Pradesh[2], Maharashtra&Gujarat)	29.1	25.0	23.0	25.61	24.22	25.16
East Region (Bihar[3], West Bengal, Assam & Orissa)	23.2	22.7	20.2	18.5	20.42	19.43
South Region (Andhra Pradesh, Karnataka, Kerala & Tamil Nadu)	21.5	21.9	17.0	17.07	13.61	15.11

Note: [1] Including Uttarakhand; [2] Including Chhattisgarh; [3] Including Jharkhand.
Source: Figures are taken from a) Utsa Patnaik, 1991; b) www.indiastat.com, March 2007.

The impact of the GR was especially strong in Punjab, Haryana and Western Uttar Pradesh. This accounts for the high share of the North-Northwest region. Such a high degree of regional concentration poses serious challenges to the maintenance of a countrywide, massive PDS, that has played an important role in evening out the regional distribution of foodgrain for final consumption, helping stabilise prices of grain.

The PDS helps redistribute grain from 'surplus States' to 'deficit States'. As is well known, Punjab and Haryana are the major surplus States and the largest contributors to the central foodgrain pool. Uttar Pradesh is also a major contributor, much of the 'surplus' coming from Western Uttar Pradesh. States such as Himachal Pradesh and Madhya Pradesh have a comfortable excess of production over consumption in aggregate per capita terms,

although this does not imply the absence of food insecurity, since that depends on many other factors, including particularly questions of access of different sections of the population to food. Karnataka and West Bengal are marginally surplus, while Tamil Nadu would be marginally deficit in the absence of access to the Central pool. The States of Kerala, Gujarat, Maharashtra, Orissa and Bihar are able to address their food deficits at least in part, thanks to the distribution of grain from the Central pool.

The point need not be belaboured. It is obvious that the system of procurement and public distribution of foodgrain has played a crucial role in redistributing foodgrain from 'surplus' States to 'deficit' States, a role that acquires great importance in the context of grain markets being far from integrated across the country. In addition, supply of grain at subsidised prices through the PDS has clearly improved access to grain for the poor, though not always in the most effective manner possible.

3.2.2 PDS through the 1970s and 1980s

As noted by Madhura Swaminathan (2000b), there were major changes in food policy that began to take shape in the mid-1960s. The establishment of the FCI and the CACP, and the rapid expansion in the number of FPSs reflected the increasing recognition at the policy level of the role of the PDS together with procurement for food security and price stability. In 1961 – 62, there were only 48,000 FPSs in the country. The number doubled to 1,02,000 by 1964 – 65 and rose further to 1,40,000 by 1968 – 69. There was a dip in the numbers to 1,21,000 by 1971 – 72, but the numbers went up steadily thereafter, reaching 2,01,000 by 1973 – 74, 3,02,000 by 1984 – 85, 4,49,469 by 1997 and 4,85,174 by 2006. From 1953 to 1963, the amount of grain distributed through the PDS as percentage of net availability varied between a high of 8.1 per cent in 1953 and a low of 2.5 per cent in 1955. It rose sharply to 11.1 per cent in 1964 from 6.9 per cent in 1963. Subsequently, the percentage fell below 10 per cent only in three years, these being 9.9 per cent in 1970, 8.3 per cent in 1971 and 9.2 per cent in 1976. Since 1980, in fact, the percentage has exceeded 15 per cent in all but four years. Thus, from the mid-1960s when the GR was being launched, there has been a broad consensus among policy makers that the PDS was critical to ensuring both reasonable price stability and countrywide food security.

Suryanarayana sums up the main features of government's food policy from 1966 to 1980 thus:

> The Fourth Plan explicitly set out the objectives of food policy as (i) ensuring consumer price stability and safeguarding the interest of the low income consumers; (ii) ensuring reasonable prices and adequate incentives to producers for increasing production; and (iii) building up an adequate buffer stock of foodgrain so as to achieve the first two objectives (Government of India, 1969). These objectives were to be achieved through (i) the PDS. (ii) procurement and buffer-stocking (iii) restricting foodgrain movement, (iv) regulation of private trade (v) regulation of bank advances against foodgrain, and (vi) ban on forward trading. The Fifth Plan continued with a similar emphasis (Suryanarayana, 1995).

Suryanarayana further notes that the Sixth Plan (1980 – 85) emphasised the need to develop PDS in rural areas and ensure its countrywide presence while the Seventh Plan saw the PDS as an essential and permanent feature of the economy. He also points out that the procurement and public distribution strategy led to a decline in statewise

variability in foodgrain availability and a considerable increase in foodstocks with government from an annual average of 1.2 MT in the 1950s to 2.6 MT in the 1960s to 10.1 MT in the 1970s. By 1985 – 86, the figure was 25 MT.

The consensus on the value of the PDS was also reflected in the views of Jha and Srinivasan:

> The PDS serves a dual purpose: it not only provides subsidy to consumers but also helps in the process of providing price support to the farmers. The PDS combined with the foodgrain procurement policy of the government has also brought about stability in the price of foodgrain, which in turn contributes to macro-economic stability. The increased demand for foodgrain resulting from food subsidies leads to multiplier effects, raising the overall growth of the economy. (Jha and Srinivasan, 2001).

The midterm appraisal of the Tenth Five Year Plan provides a succinct statement of the achievements of the PDS:

> Since its inception after the food shortages of the mid-1960s, this system (PDS) has managed to help the country avoid famine, contain food price variability to much less than in world markets and offered enough price support for farmers to nearly triple cereals production. Quite apart from PDS entitlement, this delivered an almost steady decline in real market prices of cereals over the 1970s and 1980s and rising per capita availability. Till 1997, the annual cost of the entire system was less than 0.5 per cent of GDP (GoI, 2006b).

The report of the high level committee of the Government of India on long term grain policy (hereafter, RLTGP) chaired by Professor Abhijit Sen also underlined the important role of PDS in price stabilisation and food security:

> We believe that given the balance between grain supply and demand, the persistence of regions of surplus and deficit grain production in the country, the underdeveloped nature of foodgrain markets in parts of the country, and undernutrition on a mass scale, there is still need for price stabilization nationally. The PDS plays a major role in this objective by ensuring access to certain minimum quantities of grain throughout the country and in all seasons at uniform prices (GoI, 2002).

However, the policy consensus on the positive role of PDS in promoting food security broke down with the change in the policy framework towards economic liberalisation, beginning in the early 1980s and gathering momentum by the end of the 1980s. The key issue that came up was the question of food subsidies.

3.2.3 PDS expansion and food subsidies

Procurement of foodgrain at the prices fixed by the governments based on the MSP recommended by the CACP and the subsequent transport, storage and final delivery of grain to the final retail point, namely the FPS, naturally involves expenditure. The PDS retail price had to be affordable for the buyers while the procurement price to the farmers for grain had to provide for covering cost of production including a reasonable rate of return on investment. Subsidy had to be provided by the government to the FCI to cover the difference between its total costs and the revenue it would get from the sale of grain at government-

determined prices. This constitutes the food subsidy. As the quantum of procurement and of public distribution of foodgrain increased considerably over the years since the mid-1960s, and as costs of transport, stockholding and other operational expenses of the FCI increased, the extent of the food subsidy naturally increased. Procurement of foodgrain rose from an annual average of 4.2 MT for the triennium ending 1967 to 10.7 MT during the triennium ending 1977 and further to 20.8 MT for the triennium ending 1991. The average annual quantity of foodgrain distributed through the PDS were 12.5 MT for the period 1965 – 67, 10.7 MT for 1975 – 77 and 17.7 MT for the period 1989 – 91. Thus, there was a considerable increase in both procurement and public distribution over the period from the mid-1960s to the end of the 1980s. Nominal food subsidies rose from Rs 835 crore in 1983 – 84 to Rs 2,850 crore in 1992 – 93. However, it needs to be noted that, while the food subsidy has been increasing in both nominal and real terms over the years as procurement and PDS have expanded, it has always been a small part of the total central government expenditure and averaged less than 0.5 per cent of GDP in the 1990s. But the real concerns with food subsidy resulted from the nature of the economic crisis that the country found itself in 1991. We turn to this briefly.

3.3 Policies towards PDS under Economic Reforms

In comparison with the period 1950 to 1980, the Indian economy grew rapidly in the 1980s in terms of GDP at between five and six per cent per annum compound. However, this growth was government expenditure led and financed substantially by borrowing rather than taxation. It was also import intensive, and was accompanied by import liberalisation post-1985. These and other contingent factors (including developments in the international arena) led the Indian economy in 1991 into what was officially diagnosed as a twin crisis of foreign exchange and fiscal crunch. The government resorted to large-scale borrowing from the WB and the International Monetary Fund (IMF). In turn, this entailed a programme of stabilisation and structural adjustment. This required a reduction in government budgetary deficits, to be achieved mainly through expenditure reduction and not revenue mobilisation. Practically every government programme came under the scanner for possible cost reduction/axing. The PDS was no exception. Critics of the PDS began to mount attacks on the PDS and the food subsidy. One of the major criticisms against PDS in the early 1990s was that it was not cost-effective. According to Parikh (1994), "The cost effectiveness of reaching the poorest 20 per cent households through PDS cereals is very small. For every rupee spent, less than 22 paise reach the poor in all states, excepting in Goa, Daman and Diu where 28 paise reach the poor. This is not to suggest that PDS does not benefit the poor at all, but only to emphasize that this support is provided at a high cost". The functioning of the FCI also came in for criticism. The fact that the subsidy to the FCI rose from Rs 276 crore in 1980 – 81 to Rs 650 crore in 1989 – 90 while the quantity distributed was only marginally higher between these two points in time was held up as an instance of FCI inefficiency. There was also the problem of diversion of foodgrain from PDS to the open market, estimated by some at close to one-third of total distribution (Jha and Srinivasan, 2001). It was further argued that one of the problems of the PDS was that its benefits had not been flowing to certain vulnerable sections of the population due to their disadvantageous geographical location, lower purchasing power and lack of communication and transport facilities.

Such criticisms of PDS were seized upon by some economists to argue the case for trimming down the PDS substantially. As Sonia Bhalotra points out:

> Arguments in favour of a severe trimming down of the PDS are of *two*

> *sorts*, and it is important to distinguish between them. One is that it is too great a fiscal strain. This argument often rests on indications of how the PDS is inefficiently run, which means that it imposes an *unjustifiable* fiscal strain… The second argument adduced to support a narrowing of the scope of the PDS is that it is not progressive:… it is argued to have failed in many states to provide nutritional support to the poor (Bhalotra, 2002).

Bhalotra makes the point that the first argument of unjustifiability, based on questionable estimates of leakages and other elements of inefficiency, needs to be investigated both with respect to its empirical estimates, and more importantly, "in relation to the entire programme of public spending".

With regard to the second argument, which derives substantially from Parikh (1994), Bhalotra's counter argument is worth quoting at length –

> This argument is made, for example, in Parikh (1994) where aggregate data are tabulated to show that the participation rate in the PDS is similar across income groups. This sort of analysis has influenced opinion against support for the PDS and it has been argued that other schemes such as food-for-work programmes are more progressive because the non-poor will tend to select themselves out of participation in a programme that offers a low wage and requires work… However, this argument seems flawed unless it can be shown that the PDS is non-progressive after controlling for access. Suppose that within a given region where programme access is similar across households, the poor utilise the PDS more than the non-poor. It seems plausible that the non-poor will select themselves out of the scheme on account of the poor quality of grain that is supplied through it or else on account of having to queue for supplies. Within regions, then, we may conclude that the programme is progressive. Suppose, however, that the location of fair price shops or the delivery of regular supplies favours relatively rich regions, say, on account of political lobbying or because transport costs are lower (poorer regions tend to be more remote). Then taking aggregate data and failing to control for programme access, the programme may appear to be non-progressive when in fact it is not. So access is the key, and analysis of micro-data, controlling for access, is warranted. The regional distribution of the PDS has in fact been very uneven, there being a greater density of fair price shops in urban than in rural areas… and, this aside, a much better developed distribution network in some states than in others… As the states with a weak PDS are relatively poor states and as the poor are disproportionately located in rural areas, access has disfavoured the poor. In summary, if the programme is pro-poor conditional on access then the role for policy is to expand access (Bhalotra, 2002).

As for the problems with FCI, Jha and Srinivasan note that:

> The comparison of FCI margins with those of private traders is, however, not an easy task. While the relatively higher administrative and other costs in

> the FCI (due to excess staffing) are signs of inefficiency, this may not be the case with respect to some other cost items. For example, the higher marketing costs of the FCI are partly due to the transportation of grain over longer distances to meet its procurement obligations and the PDS requirements in distant consuming areas… Part of the economic cost of the FCI is also due to the statutory and non-statutory charges paid to the state government and their agencies which include *mandi* charges, purchase tax and infrastructure cess amounting to around 14 per cent of the procurement price in the year 2000 in the case of wheat (Jha and Srinivasan, 1999).

Yet, they also argue in a completely a priori fashion that, "One would, however, expect the private sector to be more efficient in handling and marketing operations, minimising loss and theft of foodgrain, since it operates within a severe budget constraint" (ibid.).

On the other hand, the RLTGP points out that

> There are no private sector firms in the grain trade in our country, which operate on a comparable scale or with comparable responsibilities or under comparable constraints as the FCI. There are, of course, grain traders who operate on a smaller scale but reliable data on the economics of their operations is not available. Using private sector unit costs as a benchmark for assessing FCI's performance is therefore not a feasible option (GoI, 2002).

It also observes, even as it makes concrete suggestions for the improvement in the functioning of FCI without detriment to the objectives for the fulfillment of which it was created, that "the FCI has performed its role in its core functions reasonably well and must continue to do so" (ibid.).

However, as already noted, political compulsions arising from the structural adjustment programme rather than economic logic ultimately decided policy on the PDS and food subsidy reduction was taken as a non-negotiable objective.

3.3.1 Revamped Public Distribution System (RPDS)

With the launching of neoliberal reforms, the government responded to the 'need' to reduce the fiscal deficit by raising the issue prices of rice and wheat distributed through the PDS. As Madhura Swaminathan notes, "The Government of India's Economic Survey 1992 – 93 stated that 'while the public distribution system has to be continued to help the poor, the burden of subsidy on the central budget has also to be restrained'. The same document suggested that a 'phased withdrawal of food subsidies by targeting PDS' would help in control of inflation'. The following year, the government stated that 'whereas elimination of food subsidy is neither desirable nor feasible in the short and medium term, *there is a strong reason to contain it*' (emphasis added)" (Swaminathan, M, 2000b).

She further notes that, "Between 1991 and 1994, the issue price of the common variety of rice rose 85.8 per cent and the issue price of wheat rose 71.8 per cent… During the same period, the Index of Wholesale Prices rose 44.4 per cent. Between 1990 – 91 and 1994 – 95, the Consumer Price Index for Agricultural Labourers (CPIAL) rose 53.1 per cent. In other words, *the cumulative increase in the price of foodgrain sold through the PDS was higher than the corresponding increase in other general price indices*… Although the public distribution of foodgrain in India accounts for about

10 per cent of net availability, a striking feature of the data on quantities distributed is that *the supply of foodgrain to the public distribution system has declined sharply since 1991*…Between 1991 and 1995, per capita offtake of foodgrain from PDS declined in most states" (emphasis added) (ibid.).

The implications of the rise in issue prices of foodgrain through the PDS are brought out in Tables 3.3 and 3.4. When issue prices were sharply raised in 1991 – 92 and again in 1993 – 94 as well as 1994 – 95, these increases caused a significant decline in offtake in wheat during the years 1992 – 96. Offtake of rice also declined between 1991 – 92 and 1994 – 95 before recovering, but it remained below the 1991 – 92 level even in 1995 – 96.

Table 3.3 Issue Price of Wheat and Rice (Rs/qtl)

Year	Wheat	% Change	Rice	% Change
1990 – 91	234	-	289	-
1991 – 92	280	19.7	377	30.4
1992 – 93	280	0.0	377	0.0
1993 – 94	330	17.9	437	15.9
1994 – 95	402	21.8	537	22.9
1995 – 96	402	0.0	537	0.0
1996 – 97	402	0.0	537	0.0

Source: Economic Survey, 1999 – 2000

Table 3.4 Foodgrain Offtake under Public Distribution System (MT)

Year	Offtake		
	Wheat	Rice	Total
1990 – 91	7.09	7.87	14.96
1991 – 92	8.83	10.17	19.00
1992 – 93	7.85	9.69	17.54
1993 – 94	5.91	8.87	14.78
1994 – 95	4.83	8.03	12.86
1995 – 96	5.29	9.46	14.75
1996 – 97	8.52	11.14	19.66
1997 – 98	7.08	9.90	16.98
1998 – 99	7.95	10.74	18.69
1999 – 00	5.72	11.31	17.07

Source: Economic Survey, Various Issues

Taking the cue from the criticisms that the PDS was alleged to be urban biased, not effectively reaching and benefiting the poor and not reaching weaker sections in remote locations, the government announced in 1992 a so-called revamped public distribution system or RPDS. This involved geographical targeting with special schemes for relatively poor areas, tribal areas, certain designated hilly areas and urban slum areas. Thus, targeting of a certain kind was introduced without any discussion or debate on the implications of targeting on errors of exclusion. The RPDS focused on 1,752 blocks identified, on various grounds, as areas with disadvantage. Foodgrain (wheat & rice) at the rate of 20 kg/month per family along with levy sugar and edible oils were distributed to the RPDS blocks at subsidised prices. Ironically enough, the RPDS, ostensibly meant to help the poor in remote locations, involved a reduced foodgrain entitlement, with entitlement not fixed on a per capita basis but on a per family basis.

Reviewing the RPDS, the Planning Commission observed that, during the period 1992 – 94, allotment of commodities did not show any uniformity of proportion to the actual requirement of the States or the food habits of the population. The commodities also did not fulfil the local needs and preferences under RPDS. An evaluation report of the Planning Commission on RPDS stated that there was irregular distribution of commodities at FPSs, irregular opening of FPSs, inadequate godown/storage facility, and weaknesses in transport and financial aspects (GoI, 1995a).

Madhura Swaminathan has pointed out that "Paradoxically, foodgrain entitlements are lower in the revamped PDS area than in areas under the general PDS. Thus, for families in Revamped PDS areas, *the entitlements of foodgrain have been reduced*" (emphasis added) (Swaminathan, M, 2000b).

Problems with RPDS led to a reconsideration of policy in relation to PDS, not with a view to

removing the area-based targeting which characterised RPDS and reverting to the universal PDS that existed earlier, but with a view to pruning the PDS drastically through more severe means of targeting so as to reduce food subsidy substantially.

3.3.2 Targeted Public Distribution System (TPDS)

Despite the RPDS experience, the government was unwilling to examine carefully the possible pitfalls associated with a targeted PDS. The PDS had, until the introduction of the RPDS, been a system with universal access. The RPDS had engaged in geographical targeting in that it made grain more cheaply available in some regions but it did not exclude the rest of the country from the PDS itself. In 1997, the government announced a major change in the PDS. The PDS was now converted into a targeted public distribution system throughout the country. Under the TPDS, beneficiaries are classified into two categories: BPL and APL. The classification is based on the poverty line as determined by the Planning Commission. The price to be paid and the scale of allotment are both different for these two categories of households. The declared policy intent under TPDS was that APL households would be phased out from the PDS altogether over a period of time.

The government presented the rationale for the TPDS thus: "The PDS as it was being implemented earlier had been criticised for its urban bias and its failure to serve effectively the poorer sections of the population. A need was felt for quite some time to review PDS and make it more focused. The Targeted Public Distribution System (TPDS) replaced the erstwhile PDS from June 1997. Under the new system a two tier subsidised pricing system was introduced to benefit the poor. The essential features of TPDS are: Government of India is committed to making available foodgrain to the States to meet the requirement of foodgrain at the scale of 10 kg per month per family at specially subsidised prices to population falling below the officially estimated poverty line (BPL families). The states would also receive the quantity needed for transitory allocation to Above Poverty Line (APL) population" (Economic Survey, 1997 – 98)[35].

Also, and very importantly, under the TPDS, the Centre decided the entitlements of the BPL population as well as its size, thus shifting the control over PDS radically in favour of the Centre vis-à-vis the State governments. Under the TPDS, the Planning Commission's expert group methodology is used to estimate the number of BPL households in any State, and based on this estimate, the State could obtain the allotted amount of grains for BPL households at the issue prices fixed for them. Initially, 10 kg of foodgrain was allotted per month for BPL households. It was revised to 20 kg per month in April 2000 and 35 kg in March 2002. TPDS was also to extend specially subsidised foodgrain to the beneficiaries of Employment Assurance Schemes and *Jawahar Rozgar Yojana* (JRY). There were different prices for APL and BPL consumers right from 1997 – 98. Table 3.5 presents the data on central issue prices for wheat and rice from the time of introduction of the TPDS in 1997 – 98.

When the TPDS was introduced in 1997 – 98, the prices of wheat and rice were raised for APL households from the earlier common price of Rs 402 and Rs 537 per quintal for wheat and rice, respectively, to Rs 450 and Rs 700. For BPL households, price per quintal was reduced to Rs 250 for wheat (still marginally higher than Rs 234 in

[35] The Economic Survey of 2000 – 01 rationalizes the TPDS as follows: This system follows a two-tier subsidised pricing structure: for families BPL and for those APL. BPL population receive rice and wheat at a much lower price (hence highly subsidised) whereas APL population is supplied at a price which is much higher and closer to the economic cost. The identification of poor under the scheme is done by the States as per the State-wise poverty estimates of Planning Commission based on the methodology of the Lakdawala Expert Group.

1990 – 91) and Rs 350 for rice (much higher than Rs 289 in 1990 – 91). In 1998 – 99, while issue prices for BPL grain quota remained unchanged, that for APL grain quota was raised substantially once again, this time from Rs 450 to Rs 650 per quintal for wheat and from Rs 700 to Rs 905 per quintal for rice, with effect from 29 January 1999. In 1999 – 2000, issue prices for APL quota were raised again, from Rs 650 to Rs 682 per quintal for wheat, but other prices remained unchanged.

Table 3.5 Central Issue Prices of Wheat and Rice Under TPDS (BPL and APL), Rs/qtl (1997 – 2007)

Rice

With effect from	BPL	APL
01.12.1997	350	700
29.01.1999	350	905
01.04.2000	590	1180
25.07.2000	565	1130
12.07.2001	565	830
01.04.2002	565	730
01.07.2002 till date	565	830

Wheat

With effect from	BPL	APL
01.06.1997	250	450
29.01.1999	250	650
01.04.1999	250	682
01.04.2000	450	900
25.07.2000	415	830
12.07.2001	415	610
01.04.2002	415	510
01.07.2002 till date	415	610

Source: Department of Food and Public Distribution, GoI, 2007.

In March 2000, a differentiation, based on 'economic cost', was made in the issue price at which the FCI sells grain for PDS to State governments – at half the economic cost incurred by FCI for BPL households and full economic cost for APL households. Following this decision, issue prices were raised sharply in April 2000 for both BPL and APL categories, the increase being especially large for the BPL category at 80 per cent (from Rs 250 to Rs 450 per quintal) for wheat and nearly 75 per cent (from Rs 350 to Rs 590 per quintal) for rice. Issue prices of wheat for APL, which had been raised from Rs 450 to Rs 650 per quintal on 29 January 1999, were raised again in hardly two months, to Rs 682 on 1 April 1999. The price was raised again, very sharply, to Rs 900 on 1 April 2000, exactly a year later. Rice issue prices per quintal for APL category were raised from Rs 700 in December 1997 to Rs 905, 14 months later on 29 January 1999, and raised again, sharply, to Rs 1,180, 14 months later on 1 April 2000.

Thus, over the period from April 1997 to July 2000, issue prices for APL households were raised by 85 per cent in the case of wheat (from Rs 450 to Rs 830 per quintal) and more than 60 per cent in the case of rice (from Rs 700 to Rs 1,130 per quintal), with even higher prices ruling briefly between April and July 2000. Taking a longer period from 1990 – 91 to 2000 – 01, the increases for APL issue prices per quintal were from Rs 234 to Rs 830 for wheat and Rs 289 to Rs 1,130 for rice, massive increases in a period when the overall rate of inflation was much lower. All these very large increases at short intervals naturally took a toll on offtake of grain from the PDS.

Under the TPDS, there was no guaranteed scale of allotment for the APL households. Each State would receive an allocation based on the lifting by the State in the 10 years preceding the introduction of TPDS. Out of that, allotment to BPL households at the rate of 10 kg per month would be provided to the State at BPL prices for the number of BPL households in the state as estimated by the Planning Commission. The rest of the allocation to the State would be at the price fixed for APL households. In effect, this meant that if a State government wanted to follow a universal PDS with a single uniform price for both BPL and APL households, it would have to incur the extra expenditure itself. The important point here is that

Table 3.6 Offtake of Foodgrain (rice & wheat), in lakh tonnes, 1999 – 2006

Schemes	1999 – 2000	2000 – 01	2001 – 02	2002 – 03	2003 – 04	2004 – 05	2005 – 06
TPDS	170.76	120.42	138.36	203.40	241.94	296.52	313.87
BPL	69.95	96.53	100.52	137.24	158.04	174.52	156.43
APL	100.82	23.65	21.06	30.78	42.24	67.29	83.02
AAY	–	0.24	16.78	35.39	41.65	54.71	74.42
Welfare Schemes	14.26	31.93	71.84	113.80	135.00	106.09	97.48
Open market sales	45.51	14.88	55.98	56.61	13.30	2.47	10.71
Export	–	20.05	46.84	124.64	103.08	9.67	0.00
Total	**230.53**	**188.08**	**313.04**	**498.45**	**493.32**	**414.75**	**422.06**

Source: Economic Survey, 2006 – 07, GoI.

not only were poor households made to pay higher prices for foodgrain, but those State governments which sought to protect the poor were also made to pay heavily.

3.3.2.1 Consequences of TPDS

The government's decision, not only to shift to a targeted PDS, but also to raise issue prices for both BPL and APL card holders, had several consequences. Offtake, which had begun to recover after the decline between 1991 and 1995 brought about by the sharp increases in issue prices of wheat and rice in 1991 – 92 and again in 1993 – 94 and 1994 – 95, declined sharply in the wake of the rise in issue prices that occurred repeatedly from 1997 onwards.

Table 3.6 provides data on offtake of foodgrain from 1997 – 98 to 2004 – 05. Offtake of wheat, which had climbed from a low of 4.83 MT in 1994 – 95 to 8.52 MT in 1996 – 97, fell to 7.76 MT immediately in 1997 – 98. Offtake of rice remained practically stagnant in 1997 – 98 at 11.20 MT as against 11.14 MT in 1996-97. Total offtake of foodgrain rose past the 1991 – 92 level only in 1996 – 97. Offtake increased in 1998 – 99 to 8.9 MT and in 1999 – 2000 to10.63 MT in the case of wheat; the corresponding offtake levels for rice were 11.83 and 12.42 MT respectively. However, the rise in the issue prices of both wheat and rice, sharp for BPL households and more modest for APL households, effected in April 2000, led to a substantial decline in the offtake of both rice and wheat under TPDS in 2000 – 01, the decline being 2 MT for rice (16 per cent) and 2.84 MT (28 per cent) for wheat over the 1999 – 2000 figures. The increase in issue prices for APL households led to a situation where open market prices and PDS prices for APL differed little. *As a result, offtake of foodgrain under the APL category declined very sharply from 100.82 lakh tonnes in 1999 – 2000 to 21.06 lakh tonnes in 2000 – 01* (emphasis added). Even through the drought years of 2002 – 2004, APL offtake remained low. As late as 2005 – 06, the APL offtake was still only 83 lakh tonnes. The decline would have been even greater but for the fact that some of the Southern States maintained a universal PDS or bore a good part of the rise in issue prices of rice for APL, not transferring it fully to the APL households.

As Table 3.5 shows, the issue prices per quintal of wheat and rice for APL households were reduced following the drastic reduction in PDS offtake by APL households first marginally in July 2000, from their very high levels of April 2000, and then, more substantially, a year later in July 2001. Further reduction followed in April 2002, but this lasted a mere three months, as prices were again hiked back to their pre-April 2002 levels in July 2002. These prices have remained in force since then. Issue prices for BPL households were lowered marginally in July 2000 from their highest levels of April 2000 and have remained unaltered since. It is worth noting that the BPL issue prices since July 2000 are substantially higher than their 1999 levels.

3.3.2.1.1 Impact on food subsidy

The rationale for moving from a universal PDS to a TPDS was made essentially in terms of the need to contain food subsidies. Did the TPDS lead to a decline in food subsidies? Tables 3.7 and 3.8 provide the data on food subsidies for two distinct periods, one from 1990 – 91 to 1996 – 97, prior to the introduction of TPDS and the other from 1997 – 98 onwards, after the TPDS came into existence.

Table 3.7 Growth of Food Subsidies in India, 1990 – 97

Year	Food Subsidy (Rs crore)	Annual growth (per cent)	As per cent of GDP
1990 – 91	2,450	-	0.43
1991 – 92	2,850	16.33	0.44
1992 – 93	2,800	-1.75	0.37
1993 – 94	5,537	97.75	0.64
1994 – 95	5,100	-7.89	0.50
1995 – 96	5,377	5.43	0.45
1996 – 97	6,066	12.81	0.44

Source: Economic Survey, GoI, various issues

Table 3.8 Growth of Food Subsidies in India, 1997 – 2006

Year	Food Subsidy** (Rs crore)	Annual growth (per cent)	As per cent of GDP
1997 – 98	7,500	23.64	0.52*
1998 – 99	8,700	16.00	0.52*
1999 – 00	9,435	8.45	0.48^
2000 – 01	12,060	27.82	0.57^
2001 – 02	17,499	45.10	0.77^
2002 – 03	24,176	38.16	0.99^
2003 – 04	25,160	4.07	0.91^
2004 – 05	25,800	2.54	0.83^
2005 – 06(RE)	23,200	-10.08	0.66^

* As per cent of GDP (series based on 1993 – 94)

^ As per cent of GDP (new series based on 1999 – 2000)

**Other than that on sugar

Source: Economic Survey, 2006 – 07, GoI.

It is immediately evident that the post-TPDS food subsidy levels, both in absolute terms and as a share of GDP, were consistently higher. By hiking APL and BPL issue prices, and driving, as already noted, a considerable proportion of APL households to the open market, government policy ended up generating a sharp decline in offtake of grain, which, along with increased procurement at higher prices, led to a significant rise in the economic cost of grains. The increase in food subsidies is also related to the minimum support prices for grains procured by FCI, the quantities procured and the costs of transport, storage, distribution and incidentals. Table 3.9 presents the data on procurement, offtake and foodgrain stocks with the government for the period 1997 – 98 to 2004 – 05. Table 3.10 provides data on MSP for wheat and rice over the same period. These data enable a more informed assessment of the impact of TPDS on food subsidy.

Table 3.9 Procurement, Offtake and Stocks of Rice and Wheat, 1997 – 2005 (MT)

Year	Procurement			Offtake			Stocks		
	Rice	Wheat	Total	Rice	Wheat	Total	Rice	Wheat	Total
1997 – 98	14.52	9.30	23.82	11.20	7.76	18.96	13.05	5.08	18.12
1998 – 99	11.56	12.65	24.21	11.83	8.90	20.73	12.16	9.66	21.82
1999 – 00	17.28	14.14	31.42	12.42	10.63	23.05	15.72	13.19	28.91
2000 – 01	20.10	16.35	36.45	10.42	7.79	18.21	23.19	21.50	44.98
2001 – 02	22.13	20.63	42.76	15.32	15.99	31.31	24.91	26.04	51.02
2002 – 03	16.41	19.03	35.44	24.85	24.99	49.84	17.16	15.65	32.81
2003 – 04	22.83	15.80	38.63	25.04	24.29	49.33	13.07	6.93	20.65
2004 – 05	22.94	16.80	39.74	22.98	18.27	41.25	13.34	4.07	17.97

Source: Reserve Bank of India, 2007

Table 3.10 Minimum Support/Procurement Price of Wheat and Paddy, (Rs/qtl), 1997 – 2005

Year	Wheat		Rice, Common		Rice, Grade A	
	MSP	Per cent change	MSP	Per cent change	MSP	Per cent change
1997 – 98	510	7.4	415	9.2	455	-
1998 – 99	550	7.8	440	6 .0	470	3.3
1999 – 00	580	5.5	490	11.4	520	10.6
2000 – 01	610	5.2	510	4.1	540	3.8
2001 – 02	620	1.6	530	3.9	560	3.7
2002 – 03	620	0.0	530	0.0	560	0.0
2003 – 04	630	1.6	550	3.8	580	3.6
2004 – 05	640	1.6	560	1.8	590	1.7

Source: Economic Survey, 2006 – 07, GoI.

It may be seen that while procurement did go up from 23.82 MT in 1997 – 98 to 42.76 MT in 2001 – 02, the increases in MSP were for the most part modest (1999 – 2000 being the only year when MSP for rice increased substantially), considering the impact of cuts in input subsidies for agriculture and the consequent higher costs. Much of the increase in food subsidies is directly attributable to the increase in food stocks with the government following the exit from PDS of a large number of households classified as APL, consequent to the sharp hike in issue prices for APL category households, especially between 1999 – 2000 and 2001 – 02. The decline in APL offtake from 100.82 lakh tonnes in 1999 – 2000 to 23.65 lakh tonnes in 2000 – 01 because of the sharp rise in APL issue prices directly led to an increase in foodgrain stocks with the government. Thus, as Table 3.11 shows, wheat stocks rose from 27.8 MT in July 2000 to 38.9 MT in July 2001 and further to 41.1 MT in July 2002. Increases in stocks of rice were less dramatic, though still substantial, with figures for April rising from 15.7 MT in 2000 to 23.2 MT in 2001 and to 24.9 MT in 2002[36]. By July 2002, the total stock of foodgrain with the government had reached a very high level of 63 MT. The RLTGP summarised the crisis in its final report in the following words:

> India's system of grain management is in crisis. Huge public stocks have been built up, foregoing consumption in the past few years. These stocks are deteriorating because of shortage of storage space, but to hold these the Centre is spending more than what it expends on Agriculture, Rural development and on Irrigation and Flood control taken together (GoI, 2002).

Table 3.11 Stocks of Grain with Government (MT), April 2000 – April 2004

Year	Month	Wheat	Rice
2000	April	13.2	15.7
2000	July	27.8	14.5
2000	October	26.9	13.2
2001	January	25.0	20.7
2001	April	21.5	23.2
2001	July	38.9	22.8
2001	October	36.8	21.5
2002	January	32.4	25.6
2002	April	26.0	24.9
2002	July	41.1	21.9
2002	October	35.6	15.8
2003	January	28.8	19.4
2003	April	15.6	17.2
2003	July	24.2	11.0
2003	October	18.4	5.2
2004	January	12.7	11.7
2004	April	6.9	13.1

Source: Economic Survey, various issues, GoI.

It was only some time after wheat and rice issue prices were reduced for APL category in July 2001, with a further short-lived and marginal reduction between April and July 2002 that APL offtake picked up somewhat. MSP rose rather marginally between 2000 and 2005. Between April 2000 and March 2004, MSP for rice (common variety) and wheat per quintal rose only from Rs 610 and Rs 510 respectively to Rs 630 and Rs 550, not even compensating farmers for the increase in costs of production[37].

[36] By way of comparison, between 1994 and 1999, the corresponding figures of wheat stocks in July and rice stocks in April, the respective months of highest bufffer stock norm for the two grain, averaged 16.7 and 13.8 MT respectively.

[37] The MSP, in any event, is almost irrelevant through much of the country's eastern and central regions where the procurement mechanism is weak and farmers sell grain at distress prices.

The big increase in food subsidy was essentially the product of vastly higher stockholding costs resulting from decline in offtake. As the high level committee on long term grain policy put it in 2002, "Currently, about half of the food subsidy is being spent on holding stocks in excess of the buffer stock levels necessary for food security"[38]. Instead of decreasing issue prices for both BPL and APL households to address the issue of burgeoning stocks, the government chose to dispose of a total of 22.8 MT by way of exports through trade channels at BPL prices during 2002 – 03 and 2003 – 04, two difficult drought years, which witnessed massive rural distress and food insecurity. Political pressures during this period of drought compelled the Central government to allot nearly 25 MT of grain during the two drought years of 2002 – 04 to welfare programmes providing some relief to the vulnerable sections of the society. But the issue prices were not brought down even for BPL households after April 2002, and were in fact raised for APL in July 2002. There were other important effects of TPDS impacting upon food security, to which we now turn.

3.4 PDS and Food Security in the 1990s

Apart from failing to serve the intended goal of reduction of food subsidies, the TPDS also led to greater food insecurity for large sections of the poor and the near-poor. First of all, as a general observation, we may note the following: It has been pointed out by many observers that, under the definition of poverty used for deciding the target BPL population, a large number of households which cannot access even the minimum calorific requirements are left out[39]. For instance, more than 70 per cent of the rural population have a monthly per capita consumer expenditure level at which they cannot access the original poverty line norm of 2,400 Kcal per person per day in rural areas. Data from the 61st round of the NSSO show that the share of food expenditure in total consumption expenditure exceeded 60 per cent in the case of 70 per cent of rural households. Even in the case of urban households, expenditure on food accounted for 50 per cent or more of their total expenditure. The corresponding proportions were even higher throughout the 1990s. NSSO data from the 55th round for 1999 – 2000 showed that 80 per cent of rural and 40 per cent of urban households spent more than 60 per cent of their total expenditure on food. It is therefore reasonable to conclude that, "the narrow targeting of the PDS based on absolute income poverty is likely to have excluded a large part of the nutritionally vulnerable population from the PDS"[40].

While even conceptually the poverty line criterion adopted in TPDS excludes a large number of persons facing food insecurity, identifying the poor on the ground in terms of the criteria set out was bound to be a difficult exercise with large in-built errors, given the difficulties in estimating income and expenditure of individual households.

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[38] The RLTGP's observations are worth quoting at length. "The subsidy on buffer stocks has risen rapidly from 1998 onwards. In 1998 – 99, the subsidy on bufferstocks was 18 per cent ofthe total food subsidy, this ratio went up to 35 per cent in 2000 – 01. In 2001– 02, the subsidy on buffer stocks exceeded, for the first time ever, the consumer subsidy and accounted for 66 per cent of the total food subsidy. Further the consumer subsidy in 2001 – 02 was less than the consumer subsidy in 1998 – 99. Thus, the ballooning of the fiscal subsidy over the last 3 – 4 years has been on account of the sharp rise in stocks, and the accompanying rise in carrying costs". The subsidies went further up in the years succeeding these observations.

[39] More fundamentally, as Utsa Patnaik has pointed out tellingly through the official poverty line is supposed to be based on a calorific norm (2,400 and 2,100 Kcal per capita per day respectively in rural and urban areas) which has so far not been changed, the procedure of 'updating' the poverty line merely by applying a price index periodically leads to a huge difference between the proportion of households below the poverty line as officially estimated and the proportion that is unable to obtain the specified calorific norm. See Patnaik (2007) and references cited therein.

[40] RLTGP, Appendix IV.2

There are huge administrative problems as well. A survey conducted for the Comptroller and Auditor General of India by ORG-MARG found, for instance, that, nationally, an estimated 18 per cent of BPL households did not have ration cards. Several empirical studies have shown that large errors of exclusion occur as a result of narrow targeting based on an income/expenditure criterion[41] (See Box 3.1).

Targeting in general will increase errors of exclusion of the eligible and needy while minimising errors of inclusion. There are other costs as well. There is considerable merit in the view that:

> 'There are, of course, other types of costs associated with targeting. These include costs due to the distortion of information and incentives, costs of administration and costs associated with lowering the quality of welfare programmes as a result of targeting. Targeting typically reduces political support for a programme whose major benefits go to the poor and reduced support often results in lower allocations' (Swaminathan, M and Misra, 2001).

A further problem associated with TPDS was the issue of the quantity of grain that a household would be entitled to. While the APL households were sought to be priced out of the system, the TPDS initially restricted the allotment to BPL households to 10 kg per month. For a family of five, this amounts to 2 kg per capita. Using the ICMR recommended norm of 330 grams per day, the requirement per person per month would be 11 kg, and that of a family of five would be 55 kg. The initial allotment was thus not sufficient to meet even 20 per cent of the requirement. The Union budget of 2001 increased the allotment to 20 kg per month. This was raised further to 35 kg in April 2002, applicable to both APL and BPL households, still falling short of the total need. Data from the 55th round of the NSS for 1999 – 2000 suggest that, at the all India level, PDS contributed between one-eighth and one-seventh of total rice consumption and less than 10 per cent of total wheat consumption.

The all India average, as is well known, masks significant differences across States. In the case of the Southern States, especially Kerala and Tamil Nadu, PDS is a significant source of total grain consumption for the poor, in particular, the rural poor.

The TPDS made matters worse for the States, which were doing quite well under the earlier universal PDS in terms of meeting a significant share of the grain needs of poor households. We have already seen that the price rises affected under the TPDS had led to the exit of APL households and large declines in offtake of grain from the PDS. FPSs need a large turnover, given the modest margin, to be viable. When APL card holders are pushed to the open market by a large price increase in PDS, the turnover of the FPS gets greatly reduced. By pricing a large segment of APL households out of the system, the TPDS has thus eroded the viability of FPSs in many States, the classic case in point being Kerala (See Box 3.2).

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[41] See, for instance, Dutta and Ramaswami (2001) and Swaminathan and Misra (2001). An evaluation of the TPDS carried out by the programme evaluation organization (PEO) of the planning commission reported high errors of exclusion exceeding 20 per cent from nine major States (GoI, 2005).

Box 3.1 Errors of Targeting

One of the major criticisms of targeting is the extent to which targeting errors leave out those who are genuinely deserving of access to a particular programme (Swaminathan, M, 2003). Errors of targeting due to imperfect measurement are of two types: errors of exclusion (sometimes referred to as Type I error) and errors of inclusion (Type II error). The former refers to exclusion of genuinely poor or deserving households from a programme. This shows the failure to reach the target population. On the other hand, inclusion error refers to the inclusion of non-eligible persons or households into a programme. These targeting errors arise in the targeting welfare programmes due to imperfect information, inexact measurement of household characteristics, corruption and inefficiency. Error of wrong inclusion results in fiscal or financial cost due to inclusion of ineligible beneficiaries. Errors of wrong exclusion lead to welfare costs by leaving out the genuinely eligible people.

Structural adjustment programmes in many developing countries lead to targeting of food subsidy schemes so as to minimise inclusion errors. Such targeting typically leads to the exclusion of a large number of food insecure households. Also, when a programme is targeted to an identified subset of the population, which is 'poor', the programme itself tends to lose political support from other 'non-poor' but politically articulate sections. Thirdly, the criteria for identification of the poor are invariably contentious. It is not easy to rebut the argument that while targeting subsidies to the 'deserving poor' seems a priori or in theory attractive and reasonable, such targeting is often a subterfuge for reducing subsidies to meet a fiscal crisis brought about, at least in part, by a reluctance to tax the well-to-do.

In the specific Indian context, where, for a substantial proportion of the population, expenditure on food accounts for a major share of all expenditure, and where a good chunk of the population does not even meet minimum calorific requirements, targeting food subsidies to an arbitrarily defined BPL population seems hazardous, if not downright callous. The reformers, in fact, want to go further. They want to (a) eliminate food subsidy to all but the very poor, (b) dismantle the PDS involving procurement, storage, transport and delivery of grain at the retail end by the government via the FCI, and replace it with coupons of specified cash value to the poor to be redeemed at any private store for grain, (c) provide minimal support to farmers through the modality of direct income support, and (c) give up the notion of self-sufficiency in foodgrain through domestic production, relying instead on international trade to meet foodgrain deficits when they arise. But this is not a theoretically and empirically well-founded alternative. As Swaminathan notes,

[T]he proponents of reform wish to replace the Minimum Support Price for cultivators with direct income support to producers (as in Europe and the USA) and similarly replace food subsidies and a complex system of intervention in storage, marketing and distribution (such as the PDS) with cash (or coupon) transfers to poor consumers. There are two fundamental problems with these arguments. The first very real and practical problem is the feasibility of direct cash transfers. While the system of income transfers to producers is feasible in countries where less than five per cent of the population is to be covered, it is hardly feasible in a country such as India where 70 per cent of the population is rural. Secondly, the basic assumption underlying the shift from intervention in storage and distribution to cash transfers is that markets function well and government interventions only distort market behaviour. The fact is that foodgrain markets in developing countries including India are neither perfectly competitive nor fully integrated. In such a situation, cash transfers alone cannot ensure adequate food security (Swaminathan, M, 2003).

Box 3.2 PDS in Kerala

Since it is well known that Kerala has one of the best run and most effective PDS networks in India, and that Kerala is a food-deficit State, it is useful to examine the impact of the TPDS on Kerala.

Prior to the introduction of targeting, Kerala was the only State in India with near-universal coverage of the PDS. In 1991, around 95 per cent of all households were covered by the PDS and possessed a ration card. Secondly, the monthly entitlement of foodgrain per adult was 13.8 kg in Kerala (or 460 grams per day), satisfying the minimum requirement of 370 of cereals per person per day recommended by the Indian Council of Medical Research. Third the quantity of foodgrain purchased from the PDS has been higher than in most other States, making a significant contribution to household nutrition. In 1991, the annual offtake of foodgrain from the PDS averaged 69.6 kg per person in Kerala. The annual purchase of grain from the PDS in Kerala provides about one-half of the cereal requirements of a person. Fourth, while the scheme was universal, there is evidence to show that the system is progressive and that the poor depend relatively more on the PDS than the rich. Fifth, the functioning of ration shops and the delivery system has been better than in other parts of the country and this is reflected in consumer surveys. Given the scale and effectiveness of the PDS, it has been noted that the PDS has contributed to an improvement in consumption and nutrition in Kerala.

The TPDS has affected Kerala's PDS in several ways. First, as 25 per cent of Kerala's population has been termed BPL by the Planning Commission, the guaranteed and subsidised allocation of grain for BPL households under the TPDS accounts for only 10 per cent of the previous PDS ('lifting') supply. Given that Kerala is a food-deficit state, in the pre-TPDS period, the State's own production accounted for 20 per cent of grain requirements, the PDS accounted for 32 per cent and the rest came from private trade (this is according to official data on PDS and not the NSSO consumption data). If the allocation to the APL is stopped, then the PDS allocation to Kerala, it is estimated, will account for 3.8 per cent of the grain requirements of the State. Thus, TPDS has changed the share of the PDS in the total grain requirements of Kerala. This is likely to have implications for domestic availability and prices.

Second, the Government of Kerala has identified 42 per cent of households as BPL households and is providing BPL subsidy to these households from the State budget. Third, the Kerala government has continued to provide additional grain to BPL households as well as maintained its entitlements for APL households. There is a State subsidy on sales to APL households.

Fourth, offtake from the PDS has declined. As compared to an annual offtake of rice and wheat of around two million tonnes in 1991 and 1992, the offtake in 1999 was 1.6 million tonnes and in 2000 it fell further to 0.71 million tonnes.

Fifth, there is evidence that ration shops are becoming unviable and are closing down. With the higher APL prices, ration shops have lost their advantage in relation to private stores for the majority of the population and it is reported that people have begun to shift to private traders. As compared to a monthly sale of 7,500 kg of rice and 2,000 kg of wheat in early 2000, FPS are now selling 1,400 kg of rice and 200 kg of wheat a month. Since sales from fair price shops have declined, many are estimated to be making losses. According to the Government of Kerala, the earnings per FPS fell from Rs 3,711 before March 2000 to Rs 1,493 at present (late 2001). After deducting all expenses, the net income of a FPS dealer is now negative. This explains the fact that 250 to 350 retail stores have become non-functioning (Reproduced from GoI, 2002).

The Tenth Five Year Plan midterm appraisal document summarised the contrast between public distribution before and after TPDS. Before TPDS, the situation was as follows:

> Since its inception after the food shortages of the mid-1960s, system (PDS) has managed to help the country avoid famine, contain food price variability to much less than in world markets and offered enough price support for farmers to nearly triple cereals production. Quite apart from PDS entitlement, this delivered an almost steady decline in real market prices of cereals over the 1970s and 1980s and rising per capita availability. Till 1997, the annual cost of the entire system was less than 0.5 per cent of GDP (GoI, 2006b).

After TPDS was introduced in 1997, however, the situation changed drastically.

> PDS sales declined from over 19 million tonnes in 1996 – 97 to less than 12 million tonnes in 2000-1 even as procurement went up from 21 million tonnes to over 37 million tonnes. With exports restrained by low world prices, stocks increased from 18 million tonnes at end of 1997 to 58 million tonnes at end of 2001. The increased cost of stock holding doubled the food subsidy to nearly 1 per cent of GDP. And, most importantly, per capita cereals availability fell 20 per cent between 1997 and 2001, to its lowest level since 1980 (ibid.).

3.5 Recent Trends

After July 2002, there have been no hikes in issue prices of rice and wheat for APL or BPL categories. The total offtake from the TPDS improved from 13.84 MT in 2001 – 02 to 20.34 MT in 2002 – 03, 24.19 MT in 2003 – 04, and 29.65 MT in 2004 – 05 and finally to 31.39 MT in 2005 – 06. Nevertheless, APL offtake did not recover to its 1999 – 2000 level even in 2005 – 06. BPL offtake rose steadily from 6.99 MT in 1999 – 2000 to 17.45 MT in 2004 – 05 before falling to 15.64 MT in 2005 – 06. The overall increase in PDS offtake, however, was sustained in 2005 – 06 thanks to the continued increase in offtake under AAY, which commenced in 2000 – 01 with a modest 24,000 tonnes but reached a level of 7.44 MT in 2005 – 06. Since AAY is for the 'poorest of the poor', one can look at the offtake for both BPL and AAY put together. This figure has risen from 9.68 MT in 2000-01 to 23.1 MT in 2005 – 06. This indicates that the poor have been reached to some extent.

While the functioning of the PDS in general, both before and after TPDS, has had its fair share of problems, some of these, such as the scale of diversion have been exacerbated by the TPDS. Dual pricing in the PDS clearly provides incentives for diversion and corruption. Frequent changes under TPDS in prices and quantity entitlements have created information problems for local/State level administrators as well as the card holders. Quality of grain has been also an important issue under the TPDS. With the differential between the open market prices and the PDS prices declining substantially, especially for APL households, poor quality of grain in PDS would also encourage a substantial section of the APL to go to the open market.

Taking an overall view, it is clear that the TPDS has not achieved its stated objectives. While it has not reduced food subsidy nor leakages or diversion, it has excluded large numbers of poor and nutritionally insecure persons from access to PDS. It has weakened the PDS in States where the PDS was functioning effectively under the universal access arrangement. It has made a large number of

FPSs across the country unviable by pricing the APL households out of the system. In a word, it has seriously worsened food insecurity for a substantial segment of the population.

3.6 PDS Reform

The reform of the PDS has been a subject of debate since long. As noted earlier, with the adoption of structural adjustment and neoliberal reform policies from 1991, the thrust of PDS reform was in the direction of targeting food subsidies to a narrowly defined stratum of the population. Driven by the goal of food subsidy reduction, the reform of PDS by government led first to the RPDS and then to the TPDS. As the RLTGP points out, the Economic Advisory Council to the prime minister referred the matter of food subsidy to the Expenditure Reforms Commission, which recommended narrow targeting aimed at the 'poorest of the poor', even if large sections of the poor were to be thereby excluded. Though the Planning Commission in its Tenth plan approach document partially recognised that the TPDS had failed, and suggested a uniform price for both APL and BPL, and another internal policy note suggested a return to area-based targeting, there was reluctance to giving up the targeting based on the official poverty line. After a careful evaluation of the TPDS, the RLTGP made a number of recommendations on PDS reform. It prefaces its recommendations by observing, "The Committee is of the view that the Targeted PDS has failed and tinkering with it further will not help". However, unlike many critics as well as reformers who had argued in the early years of this decade that, with the emerging food surpluses and the officially proclaimed dramatic reduction in the extent of poverty, PDS was no longer essential and that the relatively small number of food insecure households (identified arbitrarily with 'the poorest of the poor') could be taken care of in other ways such as food stamps redeemable at any retail store (Sri Lanka and Mexico experience on food-stamp system revealed an increase in error of exclusion; the beneficiaries are not able to meet the increasing food prices due to inflation), or through limited-scale self-selecting programmes such as food-for-work the RLTGP took the view that:

> [G]iven the balance between grain supply and demand, the persistence of regions of surplus and deficit grain production in the country, the underdeveloped nature of foodgrain markets in parts of the country, and undernutrition on a mass scale, there is still need for price stabilization nationally. The PDS plays a major role in this objective by ensuring access to certain minimum quantities of grain throughout the country and in all seasons at uniform prices. This goal is best achieved by reverting to a system of allocations of grain at uniform issue prices with universal coverage.

It made the point that:

> In the Targeted Public Distribution Scheme (TPDS) an effort was also made to target benefits to the poor. However, the principle of allocating subsidised grain across States on the basis of their poverty ratios has led to imbalances between the resulting allocations and what is necessary to meet the difference between cereals production and requirement. Also, the stabilizing role played by the universal PDS has weakened.

Based on these observations, it recommended that –

> A system of universal PDS be reintroduced with uniform Central Issue Prices (CIP), one each for rice and wheat respectively, for all consumers in all parts of the country.

3.6.1 Evaluation studies

A performance evaluation of the TPDS by the PEO of the Planning Commission noted that "a large section of the population (particularly daily wage earners) who have been kept out of the target group because of their income levels, are potentially food insecure households". Accordingly, it noted that the proportion of people with food insecurity should not be identified with the Planning Commission estimate of the proportion of the poor and highlighted the need to 'delink BPL identification survey from the official methodology of poverty estimates'. Noting further that the objectives of the TPDS of reducing food subsidy and ensuring that the PDS provided benefit to the poor were not being realised under the scheme, it suggested that "those families, who do not have a secure source of regular income, should be netted into BPL category irrespective of their current income levels". The PEO study also noted that "Our combined estimate of leakage (36.38 per cent) and diversion (21.45 per cent) far exceeds these estimates of universal PDS", thus strengthening the case for a return to universal PDS from TPDS. But the PEO itself desisted from advocating a return to universal PDS, contenting itself with bringing out the serious problems with the TPDS and arguing for not linking PDS coverage to the Planning Commission estimates of the proportion of the poor.

Jha and Srinivasan (1999), who argue that "PDS reform induced by fiscal adjustment requires exploring alternative means of removing cost inefficiencies rather than just reducing the size of the distribution system", consider that "there are positive benefits from choosing smaller geographic units for targeting, although at the level of the district the gains are modest", thus suggesting a return to the principles that underlay the RPDS.

They elaborate their argument as follows:

> [T]he universal provision of subsidies is desirable for poorer states such as Bihar, Orissa, Rajasthan and Madhya Pradesh since most of the districts in these states belong to the 'poor' or 'very poor' category. In the other states, on the other hand, universal subsidies could be provided only to the poorer districts. In respect of other districts, self-targeting mechanisms or other direct targeting criteria based on characteristics such as landlessness, old age, widowhood, etc. could be used. Geographical targeting holds promise for bringing the PDS effectively within the reach of a large number of poor.

This argument is not altogether convincing, and it seems more plausible, given their critique of TPDS, to argue for a universal PDS, especially given the high share of food expenditure (more than 50 per cent) in total spending for at least 70 to 80 per cent of the rural population and about half the urban population.

Suryanarayana had earlier argued that "The need for reducing government expenditure under the stabilization programme calls for a discriminatory approach in providing PDS benefits and hence should be targeted only to the vulnerable groups" (Suryanarayana, 2003); although he had also stated in 1995 that "The general impression that PDS reform by excluding the non-poor would achieve Government expenditure reduction without any compromise on the food security of the poor seems to be misplaced" (Suryanarayana, 1995). In a more recent contribution (Suryanarayana, 2003), he argues that, "The average level of calorie intake is so low and the incidence of calorie deficiency is so high across states that there is little scope for eradicating the incidence of calorie deficiency by pursuing a targeted policy uniformly across regions. It is therefore imperative that the government initiates policies aimed at improving the nutritional status of the population as a whole by introducing

programmes designed to ensure the economic and physical access of all sections of its population to foodgrain and also for guiding consumer choice".

Madhura Swaminathan (2000 a&b; 2003) makes a cogent case for giving up the TPDS and returning to a universal PDS. After drawing attention to empirical studies that showed that errors of exclusion were far lower and PDS utilisation higher in States with well-functioning PDS characterised by near universal coverage, Madhura Swaminathan (2003) makes the following specific recommendations:

- [T]argeting is very costly in a country with a large population that is undernourished and vulnerable to undernourishment. At the very least, we need to include around 70 to 80 per cent of the population (and a much higher proportion of the rural population) in a scheme of providing minimum nutritional and income support such as the PDS. (In such a context) administrative, fiscal and welfare concerns all indicate that near-universal coverage is a better way to reach the target group than a complicated process which involves the exclusion of those in the highest consumption quintile.
- Secondly, ration quantities should be fixed on a per person norm and the entitlement of each person should be raised so as to provide a measure of minimum nutritional support. Consumption requirements are age and sex-specific and it makes little sense to allocate the same quantity to a one-person adult family as to a 10-person family. It needs to be added here that prior to the introduction of the TPDS, state governments had set such norms. In Kerala, for example, the norm was 13.2 kg per adult per month – an entitlement that went some way in meeting the cereal requirements of a person".
- [T]he provision of about 60 kg per annum per adult (the average offtake in Kerala) to 80 per cent of the population (say 520 million adults and 280 million children) requires that the PDS supplies about 40 million tonnes of foodgrain. At current production levels, this amounts to one-fifth of production. Distribution of foodgrain on this scale is feasible and sustainable if appropriate production and procurement policies are pursued.
- Fourthly, there must be greater accountability and transparency in the administration of the PDS at all levels of the delivery network (that is, from the FCI to the fair-price shop owner).
- Lastly, the provision for ensuring effective food security at reasonable costs to the government requires integration of production, procurement and distribution policies. Unless all parts of the food system are strengthened, any talk of isolated issues such as the high costs of the FCI is meaningless. Taking a long-run perspective, it is only with an expansion of foodgrain production and acceleration in the growth of yields of major foodgrain in relatively backward areas that a system such as the PDS can be sustained.

In a more recent contribution, Madhura Swaminathan has, using data from the 61st round of the NSSO pertaining to 2004 – 05, made the following key points among others:

- At the national level, more than half of all agricultural labour households had either no ration card or possessed an APL card, thus being effectively excluded from access to subsidised grains.
- 60 per cent of the Scheduled Caste households in rural India are effectively excluded from access to the PDS.

Thus, "...a large proportion of agricultural labour and other labour households, of households belonging to the Scheduled Castes and Tribes, of households with little or no land and households in the lowest expenditure classes, are excluded from the PDS today. The exceptions are first, Tamil Nadu, which is the only State to have a universal system of PDS, and secondly, the two southern States of Andhra Pradesh and Karnataka, where coverage of households under the BPL and Antyodaya categories is high" (Swaminathan, M, 2008).

A systematic critique of the use of the official poverty line as a targeting criterion in the PDS comes from Patnaik (2006). She demonstrates the increasing disconnect over time between the proportion of population below the official poverty line and the proportion unable to access the minimum calories per day (2,400 and 2,100 Kcal per capita in rural and urban areas respectively) since 1973 – 74 (when the poverty line was defined precisely in terms of the monthly consumer expenditure required to access the specified amounts of calories) and subsequent periods. She shows that a very large proportion of persons, 87 per cent of rural India in 2004 – 05, by the data from the 61st round of the NSSO, are unable to access the 2,400 Kcal per day that underlies the official poverty definition (but is de facto ignored by the Planning Commission's expert group methodology of estimation of poverty incidence). The corresponding percentage in 1993 – 94 was 74.5 per cent. Even if an arbitrarily lower calorie norm of 2,100 Kcal were to be applied, the percentages would still be much higher at 49.5 per cent in 1993 – 94 and 60.5 per cent in 2004 – 05 than the corresponding official poverty percentages of 37.3 per cent and 28.3 per cent respectively.

Patnaik's convincing demonstration of the disconnect between the official poverty line and attainment of the minimum calorific norm, demolishes the rationale for the TPDS based on the official poverty line. It also brings home the fact that a very large percentage of the population is nutritionally insecure. The case for a universal PDS is thus compelling. When one additionally takes into account the practical problems of identifying the poor, however defined, and the obvious difficulties with such devices as food stamps when the population being catered to is as huge as it is in India as well as the problems of poor rural infrastructure and highly imperfect and poorly integrated markets, it makes economic sense to revert to a universal PDS.

Among the other issues often highlighted with regard to the PDS include: quality of grain; poor functioning of FPSs; underweighment; difficulties in getting ration cards; lack of information regarding entitlements; diversion and other forms of corruption; and low margins making FPSs unviable. Some of these problems are interlinked. Some have, as already noted, been exacerbated by the switch to a TPDS and a system of dual pricing. Recent evaluations of PDS suggest, however, that the PDS as a system may be working better than is often assumed; or at least that, with a return to a universal PDS and appropriate logistics and monitoring mechanisms, the system could deliver on its goals much better. A study commissioned by the Ministry of Food and Public Distribution in 2005 (ORG Centre for Social Research, 2005) found that as many as 94 per cent of households in urban areas and 93 per cent in rural areas possessed ration cards. The study covered 25,004 respondents, of whom, one-third were from urban areas and the rest rural. The study also found that "Accessibility to ration shop/FPS was extremely good in almost 90 per cent of cases. About 80 per cent of ration shops were located within the ward where the respondent resides (urban) and 68.7 per cent of ration shops were located within the village of the respondent". Of course, the fact that nearly one-third of rural households have to travel more than 1 km and one-

fifth more than 2 km to reach a ration shop shows that there is considerable room for improvement. More than 55 per cent of urban respondents and 61 per cent of rural respondents were satisfied with the quality of the grain sold in the PDS. Less than 9 per cent of the respondents felt that the ration shop owner was diverting PDS rations. More than 75 per cent of ration shops across urban and rural areas were reported to open for more than 15 days in a month. Again, the figures suggest room for improvement to ensure better outreach.

About 37 per cent of urban and 34 per cent of rural respondents said they were generally satisfied with the functioning of the PDS and another 40 per cent were somewhat satisfied. Only about three per cent of respondents said they were dissatisfied with the system. About 14 to 15 per cent were neither satisfied nor dissatisfied. While it is a matter of concern that only around a third find the system unambiguously satisfactory, it is again at variance with elite perceptions, about the presumed irrelevance or wasteful nature of such efforts at public provisioning that the PDS represents, that only a small proportion are unambiguously dissatisfied.

3.6.2 Importance of PDS grain consumption for the poor

Some further recent evidence available from the 61st round of the NSSO pertaining to 2004 – 05 is brought together in Tables 3.12 to 3.15.

Table No. 3.12 Percentage of Rural Households reporting Consumption of Rice from PDS – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	69.43	70.76	49.60	62.20
Assam	21.30	9.67	3.33	9.00
Bihar	1.24	0.88	0.58	1.00
Chhattisgarh	28.63	16.87	10.45	21.7
Gujarat	49.75	38.64	19.46	31.50
Haryana	0	0	0.10399	0.1
Himachal Pradesh	70.42	60.71	43.61	50.00
Jharkhand	8.08	2.46	0.44	4.4
Jammu and Kashmir	69.95	39.07	26.53	30.80
Karnataka	79.30	56.58	40.12	58.50
Kerala	67.93	52.25	26.93	34.60
Madhya Pradesh	26.38	14.43	6.62	17.90
Maharashtra	39.93	28.52	17.64	27.50
Orissa	31.91	10.89	3.56	21.50
Punjab	0.00	0.00	0.10	0.10
Rajasthan	0	0	0.06	0
Tamil Nadu	88.95	88.15	62.23	78.90
Uttar Pradesh	11.12	4.31	2.89	5.80
West Bengal	22.50	13.68	6.09	12.80
All India	**30.94**	**25.43**	**18.19**	**24.40**

Source: NSSO Report No. 510, GoI, 2007k

Table No. 3.13 Percentage of Rural Households reporting Consumption of Wheat from PDS – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	3.14	2.97	1.72	2.24
Assam	0	0.19	0.63	0.36
Bihar	2.04	1.94	0.66	1.76
Chhattisgarh	3.65	6.59	7.75	5.30
Gujarat	48.92	34.59	18.48	29.80
Haryana	9.21	7.11	2.19	3.97
Himachal Pradesh	45.92	30.21	17.48	23.15
Jharkhand	6.72	2.64	2.91	4.30
Jammu and Kashmir	59.85	35.67	18.71	24.80
Karnataka	78.27	57.18	41.21	59.30
Kerala	41.92	28.23	17.42	19.71
Madhya Pradesh	26.24	18.17	7.02	19.44
Maharashtra	44.28	30.45	17.83	28.96
Orissa	0.64	0.67	0.31	0.56
Punjab	1.02	0.53	0.15	0.30
Rajasthan	27.17	17.23	7.17	14.13
Tamil Nadu	40.15	32.45	26.77	30.17
Uttar Pradesh	10.11	4.05	2.71	5.41
West Bengal	24.53	15.85	8.77	14.42
All India	**15.10**	**12.01**	**8.01**	**11.42**

Source: NSSO Report No. 510, GoI, 2007k

Table No. 3.14 Percentage of PDS Rice Consumption to Total Rice Consumption of Rural Households per month – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	45.95	42.60	34.04	40.18
Assam	17.69	8.87	3.26	8.33
Bihar	1.23	0.88	0.58	1.00
Chhattisgarh	23.76	15.37	9.72	18.92
Gujarat	39.66	31.55	18.34	27.32
Haryana	0.00	0.00	0.12	0.12
Himachal Pradesh	65.97	56.23	42.77	48.08
Jharkhand	7.58	2.42	0.46	4.29
Jammu and Kashmir	67.79	33.20	23.90	27.35
Karnataka	63.37	45.96	36.02	48.51
Kerala	55.77	38.12	22.38	27.93
Madhya Pradesh	28.60	16.87	8.30	20.53
Maharashtra	40.03	27.98	17.79	27.39
Orissa	24.85	10.08	3.57	18.20
Punjab	0.00	0.00	0.13	0.14
Rajasthan	0	0	0.12	0
Tamil Nadu	51.88	49.49	40.45	47.02
Uttar Pradesh	10.90	4.41	3.02	5.89
West Bengal	18.65	12.14	5.85	11.50
All India	**27.31**	**22.90**	**17.28**	**22.24**

Source: NSSO Report No. 510, GoI, 2007k

Table No. 3.15 Percentage of PDS Wheat Consumption to Total Wheat Consumption of Rural Households per month – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	0.30	0.69	0.69	0.60
Assam	0	0.10	0.42	0.20
Bihar	1.97	1.89	0.63	1.70
Chhattisgarh	18.55	16.75	14.99	16.77
Gujarat	43.79	37.22	16.60	28.70
Haryana	8.99	7.35	2.19	4.00
Himachal Pradesh	56.30	33.21	17.81	24.40
Jharkhand	10.09	3.50	3.89	6.01
Jammu and Kashmir	51.14	23.37	11.02	15.20
Karnataka	63.24	43.99	30.04	45.60
Kerala	12.54	12.95	12.02	12.20
Madhya Pradesh	28.17	18.77	7.06	20.30
Maharashtra	36.45	27.88	16.31	25.80
Orissa	0.11	0.33	0.24	0.20
Punjab	1.02	0.53	0.15	0.30
Rajasthan	23.00	15.24	6.69	12.70
Tamil Nadu	5.91	7.62	12.20	8.90
Uttar Pradesh	10.96	4.15	2.72	5.60
West Bengal	12.60	9.72	6.15	9.00
All India	**14.64**	**11.68**	**7.58**	**11.00**

Source: NSSO Report No. 510, GoI, 2007k

Tables 3.12 and 3.13 show respectively the proportion of rural households reporting consumption of PDS rice and wheat for select States, for the bottom 30 per cent, middle 40 per cent and top 30 per cent of rural households as per monthly per capita consumer expenditure. It is clear that the PDS is accessed by a significant proportion of the bottom 30 per cent households in many States, the proportion being 40 per cent or more in eight major States for rice and in seven major States for wheat. For the country as a whole, the percentages of the bottom 30 per cent of rural households accessing rice and wheat from the PDS are 30.94 per cent and 15.10 per cent respectively. The quantitative share of PDS rice in total rice consumption of the bottom 30 per cent of rural households in 2004 – 05 was greater than 50 per cent in the case of five States and above one-third in three States (Table 3.14). In the case of wheat, the share of PDS consumption for the bottom 30 per cent rural households was 50 per cent or higher in the case of three States, close to 44 per cent in one and nearly one-third in another two (Table 3.15).

Between 1999 – 2000 and 2004 – 05, the share of PDS consumption in total cereal consumption for all rural households rose from 8.02 per cent to 9.46 per cent, with eleven major States showing an increase and only six States showing a decrease. The biggest decline occurred in Kerala, largely as a consequence of targeting. The share doubled in the case of Karnataka, while Tamil Nadu, which did not adopt targeting, showed a healthy increase as well (See Box 3.3).

The States doing poorly in terms of the poor accessing the PDS for cereals are not all of one kind.

Box 3.3 PDS Performance in Tamil Nadu

Tamil Nadu stands out in sharp contrast, and is, in fact, unique among all States, for it has gone against the Central government policy of targeting and maintained a universal PDS. There is no APL/BPL classification in the State. However, the State has introduced an option for households that do not want to purchase rice from the PDS, and given them scope for buying more sugar or kerosene. There are 10 lakh cardholders who have exercised this option, and another 52,000 who have withdrawn from the PDS completely. The remaining 178 lakh cardholders are all treated equally and can purchase rice at the same price – Rs 2 a kilo since June 2006* . As the State is buying grain from the Centre at a higher price (BPL allocation at the BPL price and APL allocation at the APL price), it is incurring an additional subsidy to maintain a universal system with rice at specially subsidised low price. The subsidy burden of the State was approximately Rs 1,500 crore in 2006 – 07.

Another interesting feature of Tamil Nadu's distribution network is that there are no private fair price shops. The cooperative sector runs 96 per cent of ration shops and the remaining are managed by panchayats and self-help groups. The District Central Cooperative Bank provides a cash credit facility to co-operative societies to purchase grain for the PDS. The Planning Commission (GoI, 2005) has noted that leakages at the fair price shop level and in terms of distribution of ghost or bogus cards are low in Tamil Nadu. A detailed study of the PDS in Tamil Nadu by A. K. Venkatasubramanian identifies strong political commitment and careful monitoring by the bureaucracy as elements of the success of PDS in the State.

While nutritional outcomes cannot be directly attributed to the PDS alone, it is worth noting that Tamil Nadu has shown consistent improvement in nutritional outcomes over the last decade. NFHS data show that the proportion of underweight children (below 3 years) fell from 46 per cent in 1992 – 93 to 37 per cent in 1998 – 99 and further to 33 per cent in 2005 – 06 (when the national average was 46 per cent). Similarly, malnutrition among women, as measured by the proportion with Body Mass Index below normal, was 23.5 per cent in Tamil Nadu as compared to 33 per cent in India in 2005 – 06.

Tamil Nadu needs to be commended for managing a well-functioning universal system of delivery of cheap food in this era of liberalisation.

* The State government of Tamil Nadu reduced the price of rice under PDS to Re 1 per kg from 15 September 2008. The State government also started sale of commonly used spices/condiments at subsidised rate of Rs 50 per packet of ten items through fair price shops from 2 October 2008.

In States like Punjab and Haryana, own production of cereals may be sufficient for most cultivating rural households, obviating the need to access the PDS, while the landless poor may largely be migrants with no access to PDS. In a State like Bihar (for both rice and wheat), it could simply be that the PDS functions very poorly. The fact that, currently, even the bottom 30 per cent of rural households in terms of monthly per capita consumer expenditure, hardly access the PDS, is no argument against the need for PDS, but rather a reflection of the need to improve PDS functioning enormously. On balance, it is clear that the PDS can play an extremely important role in ensuring household food security for the rural poor.

3.7 Towards Better Delivery

Having said this, it must also be noted that there are serious problems in the functioning of PDS, and these need policy intervention and reform. For instance, the ORG Centre for Social Research, 2005, survey cited in the preceding paragraphs also brought out the following:

- Only 10.5 per cent of respondents in urban areas and 14.6 per cent in rural areas were aware about the process of selection of the beneficiaries under the AAY scheme. About two third of the AAY respondents themselves were unaware of the selection process!
- Nearly 80 per cent of all respondents were even unaware of the process by which BPL households are identified and selected.
- Only around eight per cent of APL households lifted wheat during past one year. The figures for BPL and AAY households were better at 44 per cent and 52 per cent respectively. Around 29 per cent of APL households, 65 per cent BPL households and 83 per cent of AAY households lifted rice. Around seven per cent of APL households, 34 per cent BPL households and 43 per cent AAY households lifted both varieties of foodgrain. The better performance in respect of rice also partly reflects the better functioning of PDS in the rice consuming states of the south.
- 45 per cent of BPL respondents and 52 per cent of AAY respondents who had reported not lifting foodgrain in last one year, had cited non-availability of stocks at ration shop as the governing reason. For those not lifting foodgrain, 23 per cent respondents in urban area and 11 per cent respondents in rural areas reported unacceptable or poor quality of foodgrain as reason for not lifting.
- As high a proportion as 72 per cent of APL consumers, 71 per cent of BPL consumers and 66 per cent of AAY consumers reported irregular lifting of commodities in the six months preceding the survey.
- Of those who could not lift regularly, irregular availability of items at the ration shops (30 – 50 per cent across categories) and no money for lifting ration (40 – 50 per cent) were the most significant reasons for not lifting foodgrain during last six months.
- In the case of wheat, PDS consumption accounted for 3.5 per cent, 15 per cent and 20.9 per cent respectively in the case of APL, BPL and AAY households. The corresponding figures for rice were 17.3 per cent, 27 per cent and 40.6 per cent, showing once again the greater effectiveness of PDS in the rice-consuming states.
- While the ration shop was actually reported by the majority of respondents in both urban and rural areas as most preferred source of procurement for all essential commodities, it is also true that only 25 per cent PDS

consumers in urban areas and 62 per cent in rural areas reported that the quality of wheat received from ration shop was always acceptable. Similarly, only 50 per cent of respondents in urban areas and 52 per cent respondents in rural areas reported that the quality of rice received from ration shop was always acceptable. The observation was similar across card categories.

Clearly, the PDS can be improved and made more effective through certain clear policy interventions. Second, if PDS is to address the issue of food security at the household level, the ration must be on a per capita basis and not on a per household basis. Third, there must be effective dissemination of all information including various entitlements pertaining to the PDS to the users. Fourth, elected local bodies must be actively involved in monitoring the PDS. The National Common Minimum Programme (NCMP) of the present government makes a specific commitment to strengthen the PDS particularly in the poorest and backward blocks of the country and also involve women's and ex-servicemen's cooperatives in its management. In addition, given that the viability of the ration shop is critical to PDS, the margin needs to be appropriately revised.

Further, given that, under normal circumstances, the food subsidy has been around or less than one-half of one per cent of GDP, and given the importance of food and nutrition security from both a rights perspective and a human development viewpoint, the case for universal PDS with a uniform, affordable price which will also restore the market stabilising function of the PDS is indeed compelling. This is also in line with the Government's objective of moving towards universal food security over time as stated in the NCMP.

Chapter 4

Integrated Child Development Services

4.1 Introduction

The lifecycle approach to food and nutrition security recognises that the first two years after birth are crucial. It has been noted:

> Nutrition during the early years of life is critical for early child development and human development, not only because young babies are vulnerable, but also because most of the brain growth occurs during this period. In the long run, healthier adults contribute to greater economic productivity. Child malnutrition tremendously affects development outcomes, as global research indicates that 85 per cent of a child's core brain structure is already formed by the age of three. It impairs cognitive development, intelligence, strength, energy and productivity. As malnutrition strikes the most during the first two years, it disturbs the very foundation of life and development. It is critical to invest in the early years of life by ensuring optimal infant and young child feeding practices as a means to prevent and reduce child malnutrition (Gupta, 2006).

India's track record in respect of infant and child nutrition security leaves much to be desired. One of four newborns in India is underweight. According to NFHS-3, close to 80 per cent of Indian children in the age group of 6 – 35 months are anaemic and one in three are stunted, with the percentage ranging from 21 per cent in Kerala to 46 per cent in Uttar Pradesh. Nearly half the children under 3 years of age are underweight. The consequences of this early malnutrition include mental and physical impairment that severely affect a child's growth and development. Child malnutrition is clearly a major challenge facing India.

Child malnutrition cannot be addressed in isolation from the question of the health of the primary caregiver of the child, the mother. As has been pointed out:

> It is well understood that the health and nutrition of a young child also get determined by the status of the mother's health. A malnourished mother often gives birth to an underweight child who grows up to be a malnourished adolescent, and in the case of girls perpetuates the cycle of malnutrition by giving birth to a low birth weight baby. It is also important that simultaneously there are interventions to ensure nutrition of adolescent girls and women, and for women's access to care during pregnancy, and this has been the rationale of the 'lifecycle approach' (Gupta et. al., 2007).

The Government of India proclaimed a National Policy on Children in August 1974 declaring children as a 'supremely important asset'. The policy sought to provide the framework for understanding and prioritising different needs of the child. Following the proclamation of the National Policy on Children, the programme of the ICDS was launched by the Government of India in 1975 to address children below 6 years of age, pregnant women, lactating mothers and adolescent girls. This sought to provide an integrated package of services in a convergent manner for the holistic development of the child.

4.2 Integrated Child Development Services (ICDS)

Initially ICDS was started on a pilot basis in 33 selected community blocks (19 rural, 10 tribal and 4 urban) with the support from United Nations International Children's Emergency Fund (UNICEF). The following were the declared objectives of ICDS (GoI, 2007j):

- to improve the nutritional and health status of pre-school children in the age group of 0 – 6 years;
- to lay the foundation of proper psychological development of the child;
- to reduce the incidence of mortality, morbidity, malnutrition and school dropouts;
- to achieve effective coordination of policy and implementation amongst the various departments to promote child development; and
- to enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

To achieve the above objectives, the ICDS aims at providing a package of services, comprising

- Supplementary nutrition;
- Immunisation;
- Health check-up;
- Referral services;
- Non-formal pre-school education; and
- Nutrition and health education for women.

ICDS services are operated through a network of childcare centres called *Anganwadi*. The ICDS is the only government programme that addresses the needs of the children below 6 years of age. Today, it is regarded as the world's largest community-based child development programme. Besides UNICEF, other international agencies such as the World Bank, Cooperation for Assistance and Relief Everywhere (CARE) and the World Food Programme (WFP) have also extended support to the initiative (See Box 4.1).

4.2.1 ICDS: Target groups and service providers

The six categories of services of ICDS noted earlier are intended to reach specific target groups and are delivered through well-defined service providers. Table 4.1 provides the details of ICDS service delivery.

4.2.2 Nutrition in ICDS

Supplementary nutrition, monitoring of child growth and nutrition and health education are the three planks of activities under this head. One of the main objectives of the ICDS scheme is to improve the nutritional status of children and women covered by the programme. In the design of the ICDS scheme, supplementary nutrition includes:

> [S]upplementary feeding and growth monitoring; and prophylaxis against vitamin A deficiency and control of nutritional anaemia. All families in the community are surveyed, to identify children below the age of six and pregnant & nursing mothers. They avail

Box 4.1 ICDS Projects in India Operated with International Assistance

World Bank Assisted Programme

World Bank (WB) played a pivotal role in promoting ICDS in India, between 1990 and 2006. They assisted five projects with financial support of over US$650 million. There were three phases in the WB-assisted programme; ICDS-I, II and III. The first phase was implemented across five project areas in the tribal, drought-prone and disadvantaged pockets of Andhra Pradesh and Orissa. The second phase which compromised 461 projects was operated between 1993 – 2002 in Bihar, Jharkhand, Madhya Pradesh and Chhattisgarh. The third project was implemented during 1999 – 2004 and comprised 318 projects and were implemented in Kerala, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh. Because of the delay in implementing the ICDS-III and rupee depreciation in terms of US dollars, additional amounts were accumulated. Therefore, the government of India approved restructuring the ICDS-III by covering erstwhile ICDS-II projects from October 2002 to September 2004 and including two more States, viz. Orissa and Uttarakhand. It also approved of carving out model *anganwadi* building construction in 4,496 *anganwadi* centres and giving additional honoraria of Rs 500 per month to AWWs and Rs 240 per month to AWHs in WB assisted projects from April 2002. These projects ended on 31 March 2006 after 6.5 years of implementation.

World Bank assisted training programme for ICDS workers titled 'Udisha' was also implemented during 1999 – 2004. The three major components under this programme comprised regular training about their basic jobs, training in innovative activities and area specific training.

CARE Assisted Projects

CARE, an international NGO, provides food aid by way of refined vegetable oil for supplementary nutrition under the ICDS scheme. It has supported 747 projects in Andhra Pradesh, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Rajasthan, Uttar Pradesh and West Bengal. The States have to bear only the cost of custom clearance and transportation.

WFP Assisted ICDS Projects

The UN World Food Programme has been supporting the ICDS programme of the Government of India since 1976. The WFP's support to ICDS through the India Country Programme (2008 – 12) encompasses three districts in Orissa, two districts in Madhya Pradesh and one district in Rajasthan covering about 1.5 million beneficiaries. The WFP's support to ICDS involves the provision of a nutritious supplementary food 'Indiamix' – a fortified mix of wheat and soya that has been found to be a convenient and acceptable means of providing energy, protein and micronutrients. A single ration of 80 grams provides about 23 per cent of calories, 58 per cent of proteins, 78 per cent of iron and 73 per cent of the vitamins needed daily by young children. A double ration is provided to pregnant and lactating women, adolescent girls and severely malnourished children.

UNICEF Supported ICDS

UNICEF has been supporting ICDS ever since the scheme was introduced in 1975. It supports by providing vehicles, weighing scales, photocopying machines, typewriters, growth charts, IFA tablets and technical assistance.

Table 4.1 ICDS Services, Target Groups and Service Providers

Services	Target Group	Services Provided By
Supplementary nutrition	Children below 6 years; pregnant and lactating mothers	Anganwadi Workers (AWW) & Anganwadi Helper (AWH)
Immunisation	Children below 6 years; pregnant mothers	Auxiliary Nurse Midwife (ANM)/Medical Officer (MO)
Health check-ups	Children below 6 years; pregnant and lactating mothers	ANM/MO/AWW
Referral	Children below 6 years; pregnant and lactating mothers	AWW/ANM/MO
Pre-school education	Children (3 – 6 years)*	AWW
Nutrition and health education	Women (15 – 45 years)	AWW/ANM/MO

Note: *The role of the AWW in immunisation and health check-ups is to identify the target group and mobilise the community.
Source: Ministry of Women and Child Development, GoI, 2007j.

of supplementary feeding support for 300 days in a year. By providing supplementary feeding, the Anganwadi attempts to bridge the protein energy gap between the recommended dietary allowance and average dietary intake of children and women. Growth monitoring and nutrition surveillance are two important activities that are undertaken. Children below the age of three years of age are weighed once a month and children 3 – 6 years of age are weighed every quarter. Weight-for-age growth cards are maintained for all children below six years. This helps to detect growth faltering and in assessing nutritional status. Besides, severely malnourished children are given special supple-mentary feeding and referred to health sub-centres, Primary Health Centres as and when required" (GoI, 2007j).

*See Box 4.2 on WFP Support for Supplementary Food.

Supplementary nutrition is given to children between 6 months and 6 years of age. Under this category, every child is entitled to a prescribed nutritional intake according to its age for 300 days in a year. The food served contains a mix of pulses, cereals, oil, vegetables, sugar and iodised salt. The nutritional component varies across States. The calorie norms for different categories under ICDS are given in Table 4.2*.

Table 4.2 Calorie Norms for Different Categories in ICDS, 2007

Category	Calories	Protein (in g)
Children below 3 years	300	8 – 10
Children 3 – 6 years	300	8 – 10
Severely malnourished children	Double of the above	
Pregnant and lactating mothers	500	20 – 25

Source: Ministry of Women and Child Development, GoI, 2007j

Nutrition and health education is imparted through counselling sessions, home visits and practical demonstration to women in the age group

Box 4.2 Indiamix: A Milestone in the Provision of Fortified Food

The Government of India's response to the rampant problem of malnutrition in India is led by the ICDS programme. The WFP has supported ICDS by providing nutritious, fortified supplementary food rations to women and children, imparting education and training, providing technical support for setting up production facilities for the fortified foods as well as quality assurance and monitoring. Extensive and meticulous research led to the development of Indiamix – a supplementary food that is provided in the *anganwadi* centres (AWCs) supported by the WFP. This initiative is a major milestone in the promotion of fortified food in safety net programmes in India.

Indiamix is a precooked supplementary food that is composed of wheat (75 per cent) and full-fat soya (25 per cent) and is suitably fortified with the required micronutrients. The composition of ingredients can be modified according to locally available foods. It provides almost one-third of the daily nutritional requirements per beneficiary. It has 18 per cent protein, 7 per cent fat, and 390 Kcal per 100 grams. Since it is a fortified commodity, it provides 70 to 80 per cent of the mineral and vitamin requirements of a person. Indiamix has a long shelf-life, even under conditions similar to those in villages.

The advantages of Indiamix are the following:

- ***Low-cost*** – Indiamix provides better levels of nutrition than any other product of the same cost.
- ***Better nutrition*** – Indiamix is a blended food that provides energy, protein and a good blend of micronutrients essential for the growth and development of young children.
- ***Easy to cook*** – Additional advantages include short cooking time, lower fuel costs, flexibility in preparation, and palatability. It reduces the workload for the *Anganwadi* workers.
- ***Local variations*** – Indiamix is amenable to adaptation and locally available ingredients such as finger millets (Uttarakhand) and green gram (Gujarat) can be easily included in the food mix.

Between 2004 – 07, WFP provided 82,582 MT of Indiamix to benefit about 5 million beneficiaries. Further, in order to cover a larger population than WFP's own resources would allow, a unique partnership was forged with CIDA to provide fortification support to the food distributed in AWCs in selected States like Uttar Pradesh, Madhya Pradesh, Uttarakhand, Gujarat and Orissa. The goal was to demonstrate the enormous benefits of fortified blended food and to build capacity within the State to produce it. Having demonstrated a successful model, the objective was to facilitate a takeover by the government. The intervention has been highly successful as, between 2002 – 07, about 1,36,240 MT of fortification support was provided so as to benefit over 5 million beneficiaries in selected districts of Madhya Pradesh, Uttarakhand and Orissa and all the districts of Uttar Pradesh and Gujarat.

The positive impact on beneficiaries led the State governments in Madhya Pradesh, Uttarakhand and Orissa to replicate the intervention at their own cost even as WFP support was phased out. In order to streamline and set up sustainable systems, WFP, at the request of the State, has been procuring fortified ICDS food on behalf of the State government in Orissa and Uttarakhand.

An assessment carried out in 2006 to measure the impact of WFP interventions showed that the projects are better managed and there are fewer undernourished children. This is despite the fact that participants are from the more impoverished households.

Some of the significant findings are:

- Proportion of underweight children is much higher in non-WFP villages (60 per cent) compared to intervention villages (54 per cent).
- Vitamin A status is marginally better among participants in the programme.
- In project villages, there is universal coverage of all severely malnourished children.
- Registers are more up to date in project villages.
- More women's groups are formed in WFP assisted AWCs.
- There is regular supervision in the WFP areas as compared to the control areas.

Further, efficacy studies have shown significant decline in prevalence of anaemia and Vitamin A deficiency.

Source: WFP, 2008, India Country Office, New Delhi

of 15 – 45 years. It covers infant feeding, family planning, sanitation and utilisation of health services.

4.2.3 Health

The ICDS scheme provides for immunisation of children under the age of 6 years against diphtheria, measles and tuberculosis (DPT) and of pregnant women against tetanus. This activity is to be carried out by ICDS in coordination with the state health departments.

Anganwadi workers are to provide health services, conduct health check-ups for children under six, provide ante-natal care for expectant mothers, post-natal care for nursing mothers, record weight, manage undernutrition and treat minor ailments.

Referral services are for children who are sick or undernourished, disabled and other children requiring medical attention under the public healthcare system. These children are to be given extra food with extra proteins everyday.

These three services, namely, immunisation, health check-up and referral services are delivered through the public health infrastructure consisting of health sub-centres, primary and community health centres and district and sub-district hospitals under the Ministry of Health & Family Welfare.

4.2.4 Pre-School Education

Anganwadi centres are expected to impart pre-school education. Pre-school education provides a learning environment to children aged 3 – 6 years. The scheme envisages the use of play-based education methods, with the goal of laying the foundation for the overall development of the child.

4.3 Expansion of ICDS

Started initially in just 33 community development blocks, the ICDS gradually, expanded in coverage. An evaluation carried out by the Planning Commission in 1982, suggested various improvements in operational aspects. It found that the ICDS projects had overcome some of the initial difficulties in respect of recruitment of staff, training, equipment and supplies but that the programme seemed to cater more to children in the age group of 3 – 6 years than towards children belonging to the age group of 0 – 3 years. However, there was some evidence that the nutrition status and the health standards of the children had improved in the project areas. The Sixth Five Year Plan (1980 – 85) stated that:

> The Special Nutrition Programme (SNP) which provides supplementary nutrition to pre-school children, pregnant women and nursing mothers would be extended to cover 600 ICDS projects from 200 projects at the beginning of the Plan. The scheme would cover about 5 million beneficiaries at the beginning of the Plan. In the ICDS projects, integration of nutrition with health, sanitation, hygiene, water supply, education etc., would be improved (GoI, 2007j).

It also provided for an expansion of outlay on ICDS from Rs 7.4 crore to Rs 45 crore. As it turned out, the Sixth Plan period saw 869 ICDS projects being sanctioned, so that there were 1,069 projects at the beginning of the Seventh Plan. The outlay on ICDS was increased to Rs 500 crore in the Seventh Plan (1985 – 90), and the scheme was thus further expanded in terms of geographical coverage, even as the Plan document stated that "While the programme would be expanded, emphasis will be on consolidation and improving the quality of services" (GoI, 2007j).

As the ICDS scheme expanded gradually from its inception in 1975, the total Central

government expenditure amounted to Rs 1,190.21 crore for the entire period from 1975 – 76 to 1991 – 92. There was a considerable increase in outlay on ICDS during the Eighth Plan period (1992 – 1997). The expenditure on ICDS during the five years of the Eighth Plan period was Rs 2,271.28 crore, and this exceeded the approved outlay of Rs 1,285.74 crore for ICDS by a large margin. The Eighth Plan promised that the national programme of ICDS would continue to be the basic strategy for child survival and early childhood development with special focus on areas predominantly inhabited by the tribal people, Scheduled Castes, drought-prone regions and urban slums with emphasis on improving existing constraints and backing by convergence of environmental sanitation and hygiene and safe drinking water supply (GoI, 2007j).

The Ninth Plan spoke of universalisation of ICDS and plans of expansion of coverage from 4,200 ICDS blocks with 5,92,571 *anganwadis* in the country; from 426.65 lakh beneficiaries covered in 1996 to 5,614 blocks with 8,04,671 *anganwadis* and 579.36 lakh beneficiaries by 2002. However, as late as 2003 – 04, ICDS had been operationalised only in 5,262 blocks as against the Tenth Plan target of 5,652 blocks (GoI, 2006b).

Clearly, universalisation of ICDS remains an elusive goal, even though the highest court of the land has directed that it should happen, and the National Common Minimum Programme (NCMP) of the government of India 'envisages universalisation of ICDS and *anganwadi* centres in each settlement'[42].

As of 31 March 2006, 6,118 projects had been sanctioned in 35 States/UTs. Of these, 5,659 projects were operational. The details of persons availing the ICDS services as per official data were as shown in Table 4.3.

Table 4.3 Some Key All India Statistics of ICDS as of 31 March 2006

Category	No. of *Anganwadi* Centres (AWCs) providing supplementary nutrition	Number of Persons availing the service	Average per AWC
Supplementary nutrition			
Age group of 0 – 3 years	6,68,954	2,27,11,152	34
Age group of 3 – 6 years	6,68,954	2,40,06,555	36
Pregnant and Lactating Mothers	6,68,954	95,00,401	14
Total (3.i)	6,68,954	5,62,18,108	84
Pre-school education			
Boys (3 – 6 years)	7,16,973	1,24,70,302	17
Girls (3 – 6 years)	7,16,973	1,20,22,148	17
Total (3.ii)	7,16,973	2,44,92,450	34

Source: Ministry of Women and Child Development, GoI, 2007j.

[42] Midterm Assessment of the Tenth Five Year Plan. The NCMP incorporates the following commitment: 'Universalise the Integrated Child Development Services (ICDS) scheme to provide a functional *Anganwadi* in every settlement and ensure full coverage for all children'.

The numbers of Child Development Project Officers (CDPOs), supervisors, *anganwadi* workers and helpers (AWWs and AWHs) in place were well below the sanctioned strength, implying serious staff inadequacy, with obvious implications for service delivery.

In the context of the Supreme Court directive on universalisation of ICDS (see section 4.7), and the NCMP commitment on this issue, the scheme has expanded from the 5,652 sanctioned projects in the beginning of the Tenth Plan, to 6,291 projects and 10.53 lakh *anganwadi* centres, sanctioned up to March 2007. Out of this 5,670 were operational through 7.81 lakh *anganwadi* centres by the end of Tenth Plan[43].

4.4 Evaluations of ICDS

Though universalisation of ICDS is yet to be achieved, it is clear that there has been considerable expansion of ICDS over the years since it began as a pilot project in 1975. The plan expenditure on ICDS rose from Rs 2,601.28 crore in the Eighth Plan to Rs 5,720.31 crore in the Ninth Plan. The Tenth Plan provided an allocation of Rs 11,684.50 crore for ICDS (GoI, 2007j). Assessments of the functioning and impact of such a scheme are obviously important. There have been several evaluations of ICDS over this period. The evaluation by the Planning Commission in 1982, to which reference was made earlier, identified a number of administrative and structural problems in operationalising the scheme. It found that the coverage of the target population of women and children by the three health services namely, immunisation, health check-up and referral services was rather meagre. The study also found that, under the SNP, about 46 per cent of the children, 70 per cent of the pregnant women and 63 per cent of the nursing mothers yet remained to be covered. The coverage of children within the age group of 0 – 1 by the SNP continued to be extremely unsatisfactory. The SNP was rated by the respondents as the most useful of all the programmes under the ICDS. Among the beneficiaries of the SNP, Scheduled Castes and Scheduled Tribes constituted the majority (GoI, 1982). The national evaluation of ICDS conducted by the National Institute of Public Co-operation and Child Development (NIPCCD), New Delhi, in 1992 indicated that the scheme has had a positive impact on the health and nutrition status of pre-school children. The midterm evaluation of the WB assisted ICDS in Andhra Pradesh during 1995 – 96 had similar positive findings (GoI, 2003c).

The NIPCCD conducted an evaluation of ICDS in 2006 (NIPCCD, 2007). The study covered 150 ICDS projects from all 35 States and Union Territories where the projects had been operational as on 1 April 2000. There were a total of 41,842 respondents drawn from various categories of persons availing the services of the scheme as well as community leaders and ICDS personnel at various levels. The main findings of the Study are:

- The percentage of AWCs housed in *pucca* structures rose from 43.1 per cent in 1992 to 75.4 per cent in 2006.
- The percentage of AWCs with weighing scales rose from 73.4 per cent in 1992 to 90.71 per cent in 2006, and that of AWCs with the learning kit for pre-school education from 32.9 per cent to 55.9 per cent over the same period.

[43] According to Report of the Steering Committee on Empowerment of Women and Development of Children for the Eleventh Five Year Plan, 'Up to December 2006, the total number of beneficiaries covered under the ICDS was 6.62 crore comprising 5.46 crore children and 1.16 crore pregnant and lactating mothers. The number of beneficiaries included 2.76 crore children in the age group of 0 – 3 years benefiting from supplementary nutrition and 2.78 crore children benefiting from preschool education' (GoI, 2007e).

- 98.3 per cent of AWWs were trained staff in 2006 as compared to 80 per cent in 1992.
- The proportion of persons registered in ICDS as a percentage of the relevant group population in the community rose significantly for all categories – children aged 6 – 35 months, those in the age group 3 – 6 years, and pregnant and nursing mothers.
- The percentage of children with low birth weight (below 2.5 kg) declined from 41 per cent in 1992 to 29 per cent in 2006.
- In the age group of children below 3 years, the percentage with malnutrition of grades 2 to 4 declined from 29.2 per cent to 8.1 per cent. The corresponding decline for the 3 – 6 years children were 25.3 per cent and 4 per cent respectively.
- 26.3 per cent of beneficiaries were from Scheduled Castes and 20.4 per cent from Scheduled Tribes. Fiftyfive per cent of the beneficiaries were landless class. It is clear that the *anganwadis* cater to the needs of poor families.

Improvements also had occurred between 1992 and 2006 in respect of a number of other variables such as the quality of the supplementary nutrition provided, the average number of days of disruption and so on.

The Study also found several inadequacies –

- 60 per cent of AWCs had no toilets. In another 17 per cent of AWCs, the toilets were not in a satisfactory condition.
- Half the AWCs faced lack of storage space as well as lack of both indoor and outdoor space for carrying out all the activities of the AWC.
- 44.1 per cent of AWCs had no learning kits while 37 per cent had no material or aids for nutrition and health education.
- 44 per cent of children below 3 years of age and 53 per cent of children aged 3 – 6 years did not receive any health check-up while 34 per cent of the children were not fully immunised.

However, it is clear from the NIPCCD study that the ICDS, in spite of its limitations has played a role in improving maternal and child nutrition and in lowering the extent of infant and child mortality (See Box 4.3 for Tamil Nadu experience).

4.5 Evidence from the NSSO

The 61st round of the NSSO provides useful information on the reach of and access to ICDS in rural areas. Some data from the 61st round of the NSSO are brought together in Tables 4.4 to 4.6.

The data in Table 4.4, which pertains to the percentage of rural households reporting atleast one person benefiting from ICDS, highlights the limited reach of the NSSO in rural India. The reported percentages of course relate to all sample households, whereas the eligible households – those having children below 6 years of age or one or more pregnant women – will be only a subset of all sample households. Even so, it is clear that the reach of ICDS is far from universal. Interestingly, among the States reporting higher coverage are Orissa and Chhattisgarh, States generally regarded as being more backward. Maharashtra, Gujarat, West Bengal, Haryana, Kerala and Assam have a percentage of rural households with atleast one beneficiary of ICDS that is higher than the 'All India' average. The really poor performers include Bihar, Jharkhand, Uttar Pradesh, Punjab, Rajasthan and Jammu and Kashmir.

Table 4.5 presents data on percentage of rural households with atleast one member benefiting from ICDS by monthly per capita consumer expenditure

Box 4.3 ICDS and Tamil Nadu Integrated Nutrition Programme (TINP)

Tamil Nadu (TN) government introduced ICDS in three blocks – Madras (urban), Nilakkottai (rural) and Thali (tribal) in 1976. The results of Tamil Nadu Nutrition study in 1970s showed that poverty was not the only reason for malnourished children. There were families living with calorie adequacy, but children under 2 years of age suffered from malnourishment. This led to the introduction of Tamil Nadu Integrated Nutrition Programme (TINP) in the year 1980. The programme was framed to give more thrust to educating mothers about nutrition and healthcare rather than simply provide supplementary food to children.

TINP I was started with WB assistance in Kottampatti block of Madurai District and soon extended to 173 of 385 rural blocks in TN. It focused on children between 6 – 36 months and on educating women about the importance of breast feeding, immunisation and growth monitoring. The programme aimed at reducing malnutrition upto 50 per cent among children under 4 years, infant mortality rate (IMR) by 25 per cent Vitamin A deficiency among under 5 children from 27 per cent to 5 per cent, and anaemia in pregnant and nursing women from 55 per cent to 20 per cent.

Community Nutrition Centres managed by community nutrition workers were started per 1,000 population. This project had some distinct features compared to ICDS in the manner of providing nutrition supplementation for limited period to selected children, thrust on communication through regular campaigns and programmes and appointment of Community Nutrition Instructress exclusively for supervision, monitoring and training. The scheme operated till 1989.

Evaluation studies showed that under TINP I, the enrollment was less than the desired level (77 per cent) due to difficulty of access to the centres faced by the outlying hamlets. However, level of malnourishment of the enrolled children was reduced significantly and their weights, monitored on monthly basis, showed improvement. In the health intervention part, the project impact was less than envisaged except under immunisation.

TINP II project was started in 1991 and expanded to 318 blocks in rural areas covering 18,352 of 21,499 *anganwadis*. To tackle the problem of poor coordination in addressing health and nutrition lacunae at the field, a joint service delivery approach was included. The project covered both children 6 – 36 months and 3 – 5+ yearspre-school children. The centres for the pre-school age group already existing in villages under the Mid-Day Meals Programme were converted to TINP II centres and all services were delivered from these centres. TINP II ended in 1997 and the 318 projects were brought under ICDS with assistance from Central government. No evaluation study is available of TINP II.

The WB aid resumed in 1999 and phase III commenced for a 5 year period ending 2004, covering 19,500 centres from the 318 projects where TINP II was operating. From 2005, all these centres have been brought under the ICDS programme being run with Centre-State collaboration. The Central governmental allocation for 2006 – 07 was Rs 29,656 per centre for meeting recurring expenditure and Rs 5,000 per center for non-recurring expenditure. The State government allotment under the two heads was Rs 71,915 and Rs 300 respectively. The actual expenditure per beneficiary per annum, under ICDS worked out to Rs 1,441 during 2006 – 07.

Although no direct impact evaluation studies are available, different rounds of NFHS data clearly show a decline in the level of child malnutrition in the state as can be seen from the Table below:

Percentage of malnourished children in Tamil Nadu

Sl.No.	NFHS round	Year	Malnourished children (upto 3 years) (%)
1.	I	1992 – 93	46
2.	II	1998 – 99	36
3.	III	2005 – 06	33

decile category. It is clear that a higher proportion of the households who constitute the bottom 30 per cent in terms of MPCE avail ICDS services as compared to the upper deciles. There is an element of self-selection, with the relatively well-to-do households – the top three deciles in terms of MPCE – availing ICDS only to a very small extent. In the States where the ICDS performs better as measured by the percentage of all households having atleast one person benefiting from ICDS, the percentage exceeds ten for the bottom three deciles in most instances. It is close to one-fifth or more in Maharashtra, Gujarat, Chhattisgarh and West Bengal. The States of Haryana, Orissa and Kerala also do well in this regard. The laggard States of Bihar, Jharkhand, Uttar Pradesh and Madhya Pradesh do badly in this regard as well.

Table 4.6 presents the data on availing of ICDS classified by social category. At the all India level, a higher proportion of ST and SC households avail ICDS as compared to OBC and 'Other' households. In almost all States, the percentage of SC households availing the ICDS is greater than that of OBC or 'Other' households. Where ST households form a significant proportion of the population, they also generally avail the ICDS to a greater extent. But this is not the case in poorly performing States like Bihar and Uttar Pradesh.

Overall, taking into account all three tables, one can say that the ICDS scheme tends to be utilised by the poorer and socially vulnerable households to a greater extent as compared to the ones, which are better off and not socially vulnerable.

Table 4.4 Percentage of Rural Households with atleast One Member Benefiting from ICDS during the Last 365 Days, 2004 – 05

States	% hhds with atleast one beneficiary
Andhra Pradesh	4.4
Assam	6.6
Bihar	0.7
Chhattisgarh	14.7
Gujarat	9.8
Haryana	9.4
Himachal Pradesh	5.7
Jammu and Kashmir	2.2
Jharkhand	0.9
Karnataka	4.5
Kerala	7.4
Madhya Pradesh	3.1
Maharashtra	13.2
Orissa	15.5
Punjab	1.3
Rajasthan	1.5
Tamil Nadu	5.7
Uttar Pradesh	0.9
West Bengal	9.5
All India	**5.7**

Source: NSSO Report No. 510, GoI (2007k).

Table 4.5 Percentage of Rural Households with atleast One Member Benefiting from ICDS – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	10.04	3.84	1.73	4.40
Assam	11.69	7.27	3.86	6.60
Bihar	0.77	0.86	0.19	0.70
Chhattisgarh	19.41	11.57	7.12	14.70
Gujarat	19.69	12.09	4.45	9.80
Haryana	17.84	15.87	5.91	9.40
Himachal Pradesh	9.65	7.62	4.57	5.70
Jharkhand	0.72	1.19	0.76	0.90
Jammu and Kashmir	5.88	3.73	1.47	2.20
Karnataka	8.24	3.63	1.99	4.50
Kerala	13.24	10.83	5.96	7.40
Madhya Pradesh	3.41	3.90	1.01	3.10
Maharashtra	22.47	13.05	6.98	13.20
Orissa	17.38	15.05	9.21	15.50
Punjab	3.58	1.61	1.02	1.30
Rajasthan	2.22	2.25	0.54	1.50
Tamil Nadu	7.01	5.87	4.56	5.70
Uttar Pradesh	0.52	1.15	0.87	0.90
West Bengal	18.38	9.40	4.44	9.50
All India	**8.70**	**5.70**	**3.39**	**5.70**

Source: NSSO Report No. 510, GoI (2007k).

Table 4.6 Percentage of Rural Households with atleast One Member Benefiting from ICDS during the Last 365 Days (Different Social Groups), 2004 – 05

States	ST	SC	OBC	Others
Andhra Pradesh	5.6	4.8	4.9	2.7
Assam	5.4	7.2	7.2	6.8
Bihar	0.0	1.5	0.6	0.2
Chhattisgarh	17.2	11.5	14.1	11.2
Gujarat	9.4	14.6	9.8	7.6
Haryana	0.0	12.8	9.9	6.5
Himachal Pradesh	2.9	7.9	1.0	6.3
Jammu and Kashmir	0.0	1.2	0.9	2.7
Jharkhand	0.1	0.3	1.2	3.0
Karnataka	4.2	6.4	4.1	3.8
Kerala	2.1	9.5	7.2	7.3
Madhya Pradesh	3.3	5.6	2.2	1.9
Maharashtra	14.2	14.7	13.5	12.0
Orissa	20.4	17.1	11.9	13.4
Punjab	17.9	1.9	1.6	0.2
Rajasthan	2.0	2.4	1.4	0.2
Tamil Nadu	6.7	6.5	5.5	1.0
Uttar Pradesh	0.0	1.0	0.8	0.9
West Bengal	15.6	10.4	8.8	8.1
All India	**9.5**	**6.1**	**4.7**	**5.4**

Source: NSSO Report No. 510, GoI (2007k).

4.6 Evidence from State Reports of NFHS-3

State level Reports of the NFHS-3 round have become available for some of the States. These throw some light on inclusion/exclusion aspects of access and service provision.

For instance in Uttar Pradesh, only 21.3 per cent of children in the age group of under 3 years received any service from AWC; 12.2 per cent received supplementary food, 14.6 per cent got immunisation and 3 per cent underwent health check-ups.

While 77.8 per cent SC children and 70.6 per cent ST children below 6 years of age are 'covered' under AWC, only 26 per cent SC and 12.7 per cent ST children received any service from the Centre; 19.1 per cent SC and 7.3 per cent ST children got supplementary food; 14.4 per cent SC and 12.7 per cent ST children received immunization; Only 3.1 per cent SC children received health check-ups and the figure is nil for ST children.

With regard to pregnant women, 89.4 per cent living in rural areas do not get any services from AWC (the rate is 85 per cent among SC women and 92.7 per cent among ST women); only one per cent SC women received health and nutrition education and health check-ups during pregnancy while the figure is nil for women in the ST category. Juxtaposing this with the nutrition and health indicators used for women and children in Chapter 2, we find that the level of anaemia among women (15 – 49 years) is 50 per cent in the State; 37.2 per cent of women in the same category suffer from CED; 85.7 per cent children (6 – 35 months) suffer from anaemia and 42 per cent are stunted. It is obvious that better outreach and delivery under the ICDS programme is critical for improvement in indicators of food security in the State.

Similar patterns are found for the States of Jharkhand and Bihar, the picture for Bihar being worse than that of Jharkhand. Rajasthan, Gujarat and Maharashtra are the other States for which State-level reports have become available (Tables 4.7a and b). In Gujarat, 72 per cent of pregnant mothers did not get any services from the AWC (the figures in the SC and ST category being 67 per cent and 71 per cent respectively). The fact noted in Chapter 2 that 59 per cent of rural women in the 15 – 49 years category in the State suffer from anaemia and that the State falls in the category of being highly food insecure can atleast in part be attributed to the very poor reach of the ICDS.

Table No. 4.7a Percentage of Children (0 – 71 months) receiving Services from ICDS (Rural), 2005 – 06

States	Services Received (Figures in per cent)														
	Percentage Coverage			Any Service			Supplementary Food			Immunisation			Health Check-up		
	All groups	SC	ST	All groups	SC	ST	All groups	SC	ST	All groups	SC	ST	All groups	SC	ST
Bihar	97.9	91.9	86.4	10.1	8.9	11.1	4.3	4.9	5	7.9	6.5	9	0.9	0.8	0.9
Gujarat	93.9	84.6	87.8	50.6	49.5	46.7	36.2	39.5	36.6	39.9	37.1	37.1	29.4	37.5	30
Jharkhand	95.6	91.6	95.3	45.5	43.3	57.2	40.9	39.2	52.7	28.6	23.8	38.1	13.5	9.9	19.5
Maharashtra	97.9	75.7	90.7	60.3	59.1	65.2	51.2	52.4	58.9	42	38.7	51.8	44.6	45.1	54.2
Rajasthan	75.4	77	65.2	22.6	31.4	21.4	18.7	27	19.2	13.8	20.3	12.3	10.4	18.2	7.8
Uttar Pradesh	88.2	77.8	70.6	23	26.5	12.7	15.2	19.1	7.3	13.9	14.4	12.7	2.8	3.1	0

Source: State Reports of NFHS-3, 2005 – 06

Table No. 4.7b Percentage of Mothers receiving Services from an AWC during Pregnancy (Rural), 2005 – 06

States	Services Received (Figures in per cent)											
	No Service			Supplementary Food			Health Check-up			Health and Nutrition Education		
	All groups	SC	ST	All groups	SC	ST	All groups	SC	ST	All groups	SC	ST
Bihar	99.1	99.2		0.6	0.5		0.3	0.3		0.2	0.3	
Gujarat	71.8	66.8	70.7	21.0	28.9	24.5	18.4	16.7	20.3	15.9	16.4	19.1
Jharkhand	59.6	65.1	44.8	39.3	32.6	54.1	15.7	10.4	23.0	15.2	11.2	19.7
Maharashtra	62.3	61.0	60.9	32.5	35.9	32.4	27.1	23.3	28.4	17.5	19.2	18.7
Rajasthan	79.0	70.4	82.7	18.1	25.4	16.4	10.8	16.9	6.8	4.4	5.0	0.9
Uttar Pradesh	89.4	85.0	92.7	9.9	14.2	5.5	1.8	2.8	3.6	1.3	2.1	0.0

Source: State Reports of NFHS-3, 2005 – 06

4.7 Recent Developments

A key recent development in respect of infant and child food and nutrition security has been the intervention of the highest court of the land. The Supreme Court of India has given a series of interim orders or directions to governments pertaining to food entitlements of vulnerable sections of the population. These orders have arisen out of a public interest litigation filed by the PUCL in April 2001[44]. The orders of the Supreme Court pertaining to the ICDS, issued on 28 November 2001, 29 April 2004, 7 October 2004 and 13 December 2006, when taken together, direct, *inter alia*, that:

- Government of India shall sanction and operationalize a minimum of 14 lakh AWCs in a phased and even manner starting forthwith and ending December 2008. In doing so, the Central Government shall identify SC and ST hamlets/habitations for AWCs on a priority basis (13 December 2006).

- Government of India shall ensure that population norms for opening of AWCs must not be revised upward under any circumstances. While maintaining the upper limit of one AWC per 1000 population, the minimum limit for opening of a new AWC is a population of 300 may be kept in view. Further, rural communities and slum dwellers should be entitled to an "*Anganwadi* on demand" (not later than three months) from the date of demand in cases where a settlement has atleast 40 children under six but no *Anganwadi* (13 December 2006).

- The universalisation of the ICDS involves extending all ICDS services (supplementary nutrition, growth monitoring, nutrition and health education, immunisation, referral and pre-school education) to every child under the age of 6, all pregnant women and lactating mothers and all adolescent girls (13 December 2006).

[44] PUCL vs Union of India and others (Writ Petition [Civil] No. 196 of 2001)

- All sanctioned *anganwadis* shall be operationalised immediately and their number increased from 6 lakh to 14 lakh.
- Contractors should not be used in providing supplementary nutrition to ICDS. Village communities, *mahila mandals* and Self-help groups should be given the preference for preparing the food to be served in ICDS. (In the process of providing *anganwadi* in each settlement) effort should be taken cover all SC/ST habitations at the earliest. BPL criterion should not be used as an eligibility condition for a child to use *anganwadi*. While Government of India should ensure that funds are allotted on time, states should ensure that these are fully used so that there is no disruption in the provision of supplementary nutrition (7 October 2004).
- All sanctioned *anganwadis* to be made fully operational immediately and supplementary nutrition to be served for a minimum of 300 days. Other issues discussed include number of *anganwadis* required to provide one *anganwadi* in each settlement, and providing reasonable finances for supplementary nutrition (29 April 2004).
- An *anganwadi* must be provided in each settlement and every child under six, adolescent girl, pregnant woman and lactating woman is entitled to supplementary nutrition under ICDS as per prescribed norms (28 November 2001).

The Supreme Court order of 28 November 2001, specifically asked the Government of India to implement the ICDS in full and to ensure that every ICDS disbursing centre in the country provided each child up to 6 years of age 300 calories and 8 – 10 grams of protein; each adolescent girl 500 calories and 20 – 25 grams of protein; each pregnant woman and each nursing mother 500 calories and 20 – 25 grams of protein; and each malnourished child 600 calories and 16 – 20 grams of protein.

In its order of 29 April 2004, the Court directed the Government of India to file within 3 months an affidavit stating the period within which it proposes to increase the number of AWCs so as to cover 14 lakh habitations. The Court also asked the government to consider revision of the norm of Re 1 per child fixed for supplementary nutrition way back in 1991.

In its order of 7 October 2004, the Court specifically directed that the criterion of a household having to be below the poverty line shall not be used as an eligibility criterion for providing supplementary nutrition under the ICDS scheme.

The orders of the Supreme Court and the efforts on the ground by activists of various organisations have helped sustain the pressure on the government to implement its own commitment made in the NCMP. These developments have also, to some extent, influenced and informed the policy discussions on food and nutrition security and on child development at various levels of government. While, as already noted, the government has been rather tardy in carrying out the Supreme Court directions, and has not made the financial allocations necessary for universalisation of ICDS, the Eleventh Plan working group for development of children has proposed, as non-negotiable recommendations with regard to ICDS and nutrition, universalisation of ICDS with quality, strengthening infrastructure and service delivery, restructuring programme management, eradication of severe malnutrition, and strengthening of nutrition and health education, human resource management and training and capacity building as well as monitoring, evaluation and nutrition and health education (GoI, 2007i).

The subgroup on ICDS and Nutrition (of the Working Group on the Development of Children) has noted that, over the period 2002 – 06, "although the total number of children beneficiaries has increased to 51 per cent, there still exists a significant gap in reaching out to all children under 6 years in the country. As per Census 2001, there are 15.79 crores of children in the age group 0 – 6 years of which only 4.74 crores of children are covered under the supplementary nutrition programme in ICDS (as on 31.3.2006), which is only 30 per cent of all the children in the country" (GoI, 2007f).

The subgroup of the Eleventh Plan Working Group on Food and Nutrition Security on ICDS and MDMS has recommended the following norms for the establishment of *anganwadi* centres, which, if implemented, would help redress this situation:

1. In habitations with a population above 300, the number of *Anganwadis* should be such that the *Anganwadi*/population ratio is at most 1,000. Thus, there should be atleast one *Anganwadi* in habitations with a population between 300 and 1,000, two for those with population in 1,000 – 2,000 range, three for those in 2,000 – 3,000 range and so on.
2. Habitations in the 150 – 300 population range should have a 'mini-*Anganwadi*', if it is not possible to provide a full-fledged *Anganwadi*.
3. For habitations with a population below 150, case-by-case proposals for the creation of *Anganwadis*/mini-*Anganwadis*, or the provision of ICDS services through other means, should be prepared by the Project Officer.
4. As a safeguard against the possible failure to apply these norms, rural communities and slum dwellers should be entitled to an '*Anganwadi* on demand' (within, say, three months) in cases where a settlement has atleast 50 children under six but no *Anganwadi*. The list of settlements eligible for *Anganwadi* on demand could be gradually extended over a five-year period, starting with the most vulnerable communities (e.g. SC/ST hamlets and urban slums) and ending with 'all settlements'.
5. In the process of extending the coverage of ICDS, priority should be given to SC/ST hamlets and urban slums. For rural areas, this would involve conducting a survey of SC/ST-dominated habitations and ensuring that all new *Anganwadis* are placed in these habitations until such time as universalisation has been achieved for this group.
6. In residual cases where some children do not have convenient access to an *Anganwadi*, due to distance, difficult terrain, or other reasons, proposals for additional *Anganwadis* or mini-*Anganwadis* should be prepared by the Project Officer.
7. As far as possible, a mechanism should be put in place to ensure that the clearing of proposals for additional *Anganwadis* from the Project Officer is decentralized.
8. All *Anganwadis* in habitations with a population above 500 should have a second *Anganwadi* worker.

4.8 ICDS and Nutrition

The fact that ICDS is far from being universalised is only part of the story. While universalisation is both the immediate priority and a legal obligation of the State in the light of the Supreme Court judgment, a key issue is quality. Another key issue is equity. The Steering Committee for Empowerment of Women and Development of Children for the Eleventh Plan has highlighted the following critical observations of experts and evaluation studies on ICDS:

- Target group under ICDS comprises of children mostly after the age of 3 when malnutrition has already set in.
- Emphasis is more on universalisation rather than strengthening the quality of implementation and monitoring to increase its impact.
- Service delivery under ICDS is not sufficiently focused on children under 3.
- ICDS is only partially succeeding in preferentially targeting children from poor families, girls and lower castes.
- States with highest levels of undernutrition have the lowest levels of programme funding and coverage by ICDS.
- Inadequate worker skills, shortage of equipment, poor supervision and weak monitoring and evaluation detract from the programme's potential impact.
- ICDS has to refocus on the most important determinants of malnutrition.
- Activities need to be better targeted towards the most vulnerable age groups and pregnant women.
- Supplementary feeding activities need to be better targeted towards those who needed most.
- Monitoring and evaluation should be strengthened.
- Irregularities in food supply and leakages to non-targeted individuals should be prevented.

These observations need to be taken on board while strengthening ICDS to maximise its impact on child and maternal nutrition.

The most comprehensive recommendations on ICDS as a nutritional intervention have been set out in a recent document (Gupta et.al., 2007) . These recommendations are entirely consistent with those of the subgroup on ICDS and MDMS of the Eleventh Plan Working Group on Food and Nutrition Security (see Appendix 1), and can form the basis for policy formulation and implementation to ensure the universalisation of ICDS with quality and equity.

4.9 A Final Word on ICDS

The central problem in universalisation of ICDS with quality and equity is really lack of political commitment on the part of the government. Quality demands a lower population norm for sanctioning of an AWC, a second AWW to pay exclusive attention to the children below 3 years of age, investment in proper infrastructure facilities for the AWC, decent wages for the AWWs and the AWHs, upward revision of cost norms for supplementary nutrition and so on. There is also the challenge of capacity building of all stakeholders, from the ICDS and health staff to elected local body representatives to Self-Help Group (SHG) members and others associated with the implementation machinery of ICDS, which has financial implications. Political commitment on the part of Central and State Governments to devolve the necessary funds, functions and functionaries to elected local bodies to enable them to run the ICDS programme is also crucial, as is capacity building of local bodies for this challenge (Centre for Child Rights, 2005; Drèze, 2006). Mahapatra (2008) illustrates that even though Supreme Court ordered the government to spend Rs 2 per child per day and in the case of severely malnourished child Rs 2.70 per child per day, many of the States' allocation did not even touch Re 1 per child. The Central government allotted Re 1 per child for supplementary nutrition, which includes cost of

food, fuel, condiments and administration; states' have to share the remaining cost. But States like Haryana (22 paise), Himachal Pradesh (48 paise), Karnataka (33 paise), Maharastra (35 paise), Madhya Pradesh (49 paise) and Bihar (15 paise) are not spending even 50 paise per child per day. Tamil Nadu spends Rs 1.69 per child per day. It is clearly observable that funds allotted for ICDS by the governments are not even touching the norm ordered by Supreme Court. Further, even the allocations ICDS has received in the last four union budgets (Table 4.8) are inadequate even to run the existing programme with its poor quality and limited coverage.

Table 4.8 **Budgetary Allocations for ICDS in Union Budget, 2005 – 09**

Year	Amount (Rs Crore)	Percentage Increase
2005 – 06	3,142	30
2006 – 07	4,087	30
2007 – 08	5,293	19
2008 – 09	6,300	19

Source: GoI, various years.

So in sum, it does appear that the political will to make the necessary funds available so as to meet the government's legal obligation in the light of the Supreme Court's directives is sadly wanting.

Chapter 5

Mid-Day Meals Scheme

5.1 Introduction

Two key problems relating to children in India are the large numbers of children out of school and the considerable extent of undernourishment among children. In 2004, around 15 per cent of children in the age group of 6 – 14 years were out of school (Right to Food Campaign, 2006). According to the NFHS-3, 46 per cent of India's children under 3 years of age are underweight. The corresponding figure is 30 per cent in Sub-Saharan Africa while China records eight per cent and Pakistan 37 per cent (Lal, 2007). India hosts 57 million – or more than a third – of the world's 146 million undernourished children (NFHS-3, 2007). Nutritional anaemia is also widespread among children as also problems of stunting and underweight as discussed in the earlier chapters. The figures imply serious consequences for human resource development and productive potential of the nation. More importantly, they also imply denial of basic human rights, such as access to food and education, to children. While the ICDS scheme discussed in chapter 4, targets children in the age group 0 – 6, their mothers, as well as adolescent girls, malnutrition in the school-going age group has been sought to be addressed through nutritional support in schools.

Successive governments at the Centre and in the States have taken various measures to enhance enrolment and retention of children in schools with some degree of success. One of the strategies adopted to improve enrolment and retention of children in schools has been the provision of midday meals for children in schools*. While there is a long history of such initiatives, among the most well-known ones is the innovative State-wide noon meals scheme for school children initiated by the State of Tamil Nadu way back in 1982. By the mid-1980s, the governments of Tamil Nadu, Kerala and Gujarat had put in place a universal mid-day meals scheme providing hot cooked food for children in primary schools. By 1990 – 91, the number of States with such provision, either universally or on a large scale, was twelve. Five other States were also implementing similar programmes, with either international funding or a combination of own resources and international funding. It was in such a situation that the Government of India launched the National Programme of Nutritional Support to Primary Education (popularly known as Mid-Day Meals Scheme) on August 15, 1995.

Under the MDMS, free cooked meals are provided to all children studying in government and government-aided primary schools, during the working days. Children studying in classes I – V in government and government-aided schools, including those run by elected local bodies, are eligible to get lunch under MDMS programme (GoI, 2006d).

* See Box 5.1 for information on the global experience with school feeding programmes.

Box 5.1 School Feeding Programme: The Global Experience

School Feeding Programmes (SFPs) have been operational in various countries under different names. The SFPs are generally government assisted, sponsored by national and international agencies and sometimes even through students-participatory schemes.

After World War II, the McGovern-Dole School Feeding Programme was started in the US for providing food to children in impoverished countries. Organisations such as, Catholic Relief Services, CARE, and WFP are currently reaching 3 million children in nations such as Pakistan, Afghanistan, Kenya and Guatemala, under this initiative.

The beginnings of food-based intervention at the school level can be traced to initiatives in Europe in the second half of the 19th century. Holland was the first country to introduce a law for SFPs in 1900, under which free food and clothing were distributed to poor children in urban schools. The British government passed a Provision of Meals Act, in 1905 and instructed the local bodies to start SFPs in their areas; milk was also given in addition to food from 1934.

Latin American Experience: The SFP programme in Uruguay dating back to the 1900s currently consists of lunch, breakfast and/or lunch plus snack, breakfast, lunch, dinner and a snack of a glass of milk. 'Targeting' based on the needs of complementary food was introduced in 1996 – 97, where the students were selected by the school principal. In Brazil, SFP was started in 1955 as a national programme and with 37 million registered students in 2006 it is one of the biggest SFPs in the world. An anthropometric study in 2001 found that a majority of the 150,000 pupils of the age group 6 – 14 years met the medium band of height for each period of age. In Chile, the objective of SFP is giving social and food assistance to low income children by providing free meals up to 180 days per year. The SFP in Chile is a targeted one from 1982 onwards where students are ranked according to their vulnerability index. An evaluation of the programme revealed that more than 80 per cent of the students covered belong to low-income quintiles and the percentage of children completing primary school increased from 40 to 58 per cent from 1986 to 1990. Costa Rica also follows targeted SFP and the allocation received by schools varies depending on the size of the school and poverty rating of the area in accordance with Planning Ministry's poverty gap.

In the year 2001, WFP started a Global School Feeding Campaign to induce all governments to start SFP in their own countries. WFP also gives partial financial assistance for starting SFP in a country. In 2006, 21.7 million children in 74 countries were covered (WFP, 2006).

In Jamaica, USAID started its first SFP programme in 1976 giving one third of per day calorie requirement, to the children; the core objectives of the programme are to improve nutrition and improve regular attendance in schools. The Jamaican government has also introduced students' participation in SFP expenditures and each child contributes $2 per day as their share while the government gives $250 per child annually. Concession is given to poor children under this 'self-targeting programme' (Govt. of Jamaica, 2003).

From the year 2002, UNICEF started to distribute fortified wheat biscuits to school-going children in Bangladesh in collaboration with the government. Every child receives a wheat biscuit packet containing 8 biscuits during the pre-lunch session. A research survey found that the BMI of the children increased by 7.5 per cent as a result of this programme (IFPRI Forum, 2004). A UNICEF assisted SFP programme was started in Nigeria in 2002 to give breakfast to school-going children.

5.2 Evolution of MDMS in India

The earliest instance of nutrition support in schools in the country can be traced back to 1925 when the Madras Corporation introduced school lunch programme for poor school children. After that, similar programmes were introduced in Kolkata in 1927, some parts of Kerala in 1941 and Bombay in 1942 (Swaminathan, P, et. al., 2004).

The State of Tamil Nadu has in fact played a pioneering role in implementing MDMS for school children in India (See Box 5.2). The scheme was introduced in 1958 by the State government. About 2,00,000 children across 8,000 elementary schools were covered. In 1967, central kitchens were started to provide cooked meals. Subsequently, in 1982, the State government introduced a State-wide, universal and decentralised MDMS in all government-run schools (including those run by local bodies) and in government-aided primary schools. From September 1984 onwards, the scheme was extended to students of classes 6 – 10 (Swaminathan, P, et. al., 2004).

The State of Gujarat introduced noon meals programme in 1984 for primary school children (GoI, 2004b). By 1995, cooked meals were being provided throughout the State of Kerala and in some pockets of Madhya Pradesh and Orissa.

The objective of the MDMS introduced by the Government of India in August 1995 was stated thus:

> The programme is intended to give a boost to universalisation of primary education, by increasing enrolment, retention and attendance and simultaneously impacting on nutrition of students in primary classes (GoI, 1995b).

The scheme sought to integrate the noon meals schemes being already implemented by some States and to cover all the States. The scheme involved central support to the States by way of free supply of 100 grams of foodgrain per child per day and subsidy for transport of grain from the nearest distribution point of the FCI. The State governments were required to meet the costs of infrastructure and the cooking cost. Initially, the scheme was introduced in the 2,368 blocks where the RPDS or Employment Guarantee Schemes (EGS) were being implemented and in forty low female literacy (LFL) blocks all over India[45]. Local bodies were declared to be the implementing agencies, with supervision from the district and State levels of the government's administrative machinery.

Initially, the State governments were advised to derive finance from poverty alleviation schemes such as JRY for providing necessary infrastructure and meeting their share of per child infrastructure costs. But, from April 1999 onwards, responsibility for raising their share of funding was transferred to States/UTs. Some States facing financial difficulties continued with the scheme of distributing foodgrains at 3 kg/student/month as an interim measure. However, in December 2003, Planning Commission of India asked the States to earmark a minimum of 15 per cent of additional Central assistance under the *Pradhan Mantri Gramodaya Yojana* (PMGY) for the financial requirements of converting grains into cooked meals.

Universalising the scheme to cover all States proved difficult since many States were not in a position to meet the expenses that they would incur in building the necessary infrastructure and in the preparation of meals. Some States did not implement the scheme at all. Some States (like

[45] There were some States (e.g., Punjab) where RPDS was not implemented. In such States, LFL blocks and slum area schools were selected for the programme.

Box 5.2 Mid-Day Meals Programme in Tamil Nadu

The State of Tamil Nadu has played a pioneering role in introducing midday meals in schools. Late Chief Minister Kamaraj introduced the scheme in 8,000 selected primary schools covering two hundred thousand students as early as in 1956. Initially run with voluntary contribution from local persons and wheat imported from US under PL-480, the government subsequently allocated 6 paise per child. With 4 paise from local contribution, 10 paise per child was spent under MDMS from second year onwards. The government also entered into an agreement with CARE, an international organisation, to provide food (wheat) under the programme from 1961 onwards whereby children got food for 200 days in a year. The government gave rice for 100 days and CARE provided wheat for an equal number of days. From 1967, food was prepared in centralised kitchens and distributed by vehicles to local schools. But, because of bad roads and periodic breakdown of vehicles, the actual feeding days were under 200 per year.

The programme got an impetus after 1 July 1982 when the State government under late Dr. M G Ramachandran, introduced Chief Minister's Nutritious Noon Meals Programme (CMNNMP), covering all government, government-aided and local body run primary schools. The objectives of the programme were to provide adequate nutrition to economically disadvantaged children, improve literacy rate and reduce dropout rates from schools. The scheme was extended to high schools in September 1984. Successive governments improved the programme by introducing eggs and pulses in addition to rice and vegetables (See Table below for latest position). The students in primary schools get one meal for 365 days in a year, whereas high school students receive meals on all working days (220 days/year). According to the State government's 2007 – 08 policy note, 41,916 school noon meals centres covered 58,69,910 students in Tamil Nadu. The State spent Rs 288.62 crore on 54,98,309 students under the programme during 2006 – 07 (around Rs 525 per child per annum).

Feeding scale per beneficiary per day

Sl. No	Food Commodities Quantity in grams (g)	Age groups (Years)				Old-age pensioners
		2 – 5	5 – 9	10 – 15		
				Std VI – VIII	Std IX – X	
1	Rice	80 g	100 g	100 g	120g	200g
2	Dhall	10 g	15 g	15 g	15g	15g
3	Oil	2 g	1 g	1g	1g	1g
4	Salt	1.9 g	1.9 g	1.9g	1.9g	1.9g
5	Vegetables, Condiments and Fuel*	35 paise	35 paise	35 paise	35 paise	35 paise
6	Egg – two eggs per week Minimum 46 grams for all children (Mon & Wed)**					

* Vegetables (15 paise), condiments (9 paise) and fuel (11 paise)

** The State government announced three eggs per week for students from 15 July 2007.

Source: Policy Note 2007 – 08, Department of Social Welfare, Government of Tamil Nadu

Only few evaluation studies are available on the implementation of the programme. The earliest impact survey done by Irudayarajan and Jayakumar (1992) found that the average attendance of students enrolled improved after introducing Nutritious Meals Programme (NMP) and this applied to both boys and girls. This was reiterated by Swaminathan, P, et. al., (2004), on the basis of field study in different districts. The studies also highlighted the need for improvement in the government delivery system and the need to engage local people's participation and Panchayat Raj Institutions for successful functioning of the system.

Madhya Pradesh) provided uncooked grains at the rate of 3 kg per month (100 grams per day) per child as take-home rations. It took a long time and a change of government for the Central government to respond to the fiscal constraints the States faced in providing children a hot cooked meals at school. The scheme was modified only in 2004 to address this issue. It was modified further in 2006, improving its content and providing greater support to States than before. However, long before the Central government took these steps, an important judgment of the highest court of the country, the Supreme Court, delivered in November 2001 as interim orders in a public interest litigation filed in April 2001 by the PUCL, went a long way towards converting the MDMS from a mere scheme into a legal entitlement of school children.

5.3 The Supreme Court Orders

In 2001, a public interest petition was filed by a civil society organisation in the Supreme Court against distributing uncooked grains to school children and against States not implementing MDMS[46]. In an interim order dated 28 November 2001, the Supreme Court ordered that cooked meals had to be given to children and asked all States to implement the programme of MDMS.

Specifically, the Supreme Court directed the State governments and Union Territories "to implement the MDMS by providing every child in every Government and Government assisted primary school with a prepared midday meals with a minimum content of 300 calories and 8 – 12 grams of protein each day of school for a minimum of 200 days". In subsequent orders, the Supreme Court further strengthened the right of children to a midday meals at school. In its orders of 20 April 2004, the Court observed, *inter alia*, that:

- The conversion costs for a cooked meal, under no circumstances, shall be recovered from the children or their parents.
- The Central Government … shall also allocate funds to meet the conversion costs of foodgrains into cooked midday meals.
- In drought affected areas, midday meals shall be supplied even during summer vacations.
- In appointment of cooks and helpers, preference shall be given to Scheduled Castes and Scheduled Tribes.
- The Central Government shall make provisions for construction of kitchen sheds.
- Attempts shall be made for better infrastructure, improved facilities (safe drinking water etc.), closer monitoring (regular inspection etc.) and other quality safeguards as also the improvement of the contents of the meals so as to provide nutritious meals to the children of the primary schools.

One of the key commitments of the Common Minimum Programme (CMP), later after adoption by the cabinet, the NCMP, was the following:

> A national cooked nutritious midday meals scheme, funded mainly by the Central government, will be introduced in primary and secondary schools. An appropriate mechanism for quality checks will also be set up.

5.4 Revisions in Guidelines

Subsequently, in line with the Supreme Court orders and the NCMP commitments, the Central government released new guidelines for NP-NSPE in 2004. The guidelines observed that:

[46] WP (c) 196/2001 PUCL vs. Union of India and others

> A large number of States continued to face financial difficulties in meeting cooking cost and providing cooked meals to their students, and accordingly distributed only foodgrains @ 3 kg per student per month, as was envisaged in para 12 of the Guidelines, as an interim measure. To ameliorate this situation, Planning Commission asked State Governments in December, 2003, to earmark a minimum 15 per cent of Additional Central Assistance (ACA) under the PMGY from the financial year 2004 – 05, for meeting cooking cost under Mid-Day Meals Scheme (GoI, 2004b).

Invoking Articles 38 (f) and 47 of the Indian Constitution[47], the document noted that:

> [E]ven nine years after the commencement of the NP-NSPE, 1995, serving of cooked meals could not be universalised in six States which included certain major States. In many of the remaining States, quality of the meals served to children was not satisfactory. Keeping these aspects in view, changes in the Scheme had become necessary. Hon'ble Supreme Court has also been seized of the matter, and has been giving certain directions in this regard in its orders passed from time to time in WP(C) 196/2001 [PUCL vs. Union of India & Others] (GoI, 2004b).

The scheme's basic objectives were to boost universalisation of primary education (classes I–V) by improving enrolment, attendance, retention, learning levels of children, especially those belonging to disadvantaged sections, improve nutritional status of students of primary stage and provide nutritional support to students of primary stage in drought-affected areas during summer vacation also.

According to the guidelines, the lunch should provide 300 Kcal and 8 – 12 grams protein per primary school child per day. This programme was to be implemented in all government (including local bodies) and government-aided primary schools as well as the Alternate and Innovative Education (AIE) centres under the EGS. The responsibility for implementing the scheme was vested in the State Government/Union Territories. The Central government allotted 100 grams of grain per day per child and Rs 50 per quintal of grain as transportation cost. Total assistance per child per day was Rs 2.21 (Rs 1.11 for foodgrain; Re 1 for cooking cost; 8 paise for transport subsidy; and 2 paise for management, monitoring & evaluation).

New guidelines were issued in 2006. The Guidelines also noted the impact it was having on addressing social and gender inequities.

Noting that, "Today, the NP-NSPE is the world's largest school feeding programme reaching out to about 12 crore children in over 9.50 lakh schools/EGS centres across the country", the Guidelines states the objective of the scheme as follows:

NP-NSPE, 2006 seeks to address two of the most pressing problems for the majority of children in India, namely, hunger and education by:

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[47] Article 39 (f) states: "The State shall, in particular, direct its policy towards securing … that children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment".

Article 47 states: "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".

(i) Improving the nutritional status of children in classes I – V in Government, Local Body and Government aided schools, and EGS and AIE centres.

(ii) Encouraging poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities.

(iii) Providing nutritional support to children of primary stage in drought-affected areas during summer vacation.

There is also evidence to suggest that apart from enhancing school attendance and child nutrition, midday meals have an important social value and foster equality. As children learn to sit together and share a common meal, one can expect some erosion of caste prejudices and class inequality. Moreover, cultural traditions and social structures often mean that girls are much more affected by hunger than boys. Thus the midday meals programme can also reduce the gender gap in education, since it enhances female school attendance (GoI, 2006d).

The Guidelines identified three important grounds for revising the norms and modalities of the MDMS since the previous amendments in 2004. The provision for cooking cost of Re 1 was rather inadequate, with the problem becoming more severe following the discontinuance of PMGY with effect from April 2005. Second, the lack of kitchen sheds was a major problem, leading to use of class rooms for storage, and even, in some instances, for cooking, thus disrupting the educational process significantly, besides being fraught with risk. Third, professional opinion strongly suggested the need for revision of nutritional norms upwards, and for adding components of micronutrient supplementation and deworming. Following the recommendations made in this regard by the National Steering and Monitoring Committee for the NP-NSPE, the Central government revised the scheme and its norms by issuing new guidelines.

Under the new guidelines of 2006, the nutritional norm in respect of calories/student/day was revised to a minimum of 450 from 300 in 2004. Protein intake norm per student per day was also increased from 8 – 12 grams in 2004 to a minimum of 12 grams in 2006. In order to meet the new norms, a minimum of Rs 2 per child per day was allotted for cooking expenses – an increase of Re 1 from 2004 (Table 5.1). Of this, the Central government provided, per day per child, Rs 1.80 to northeastern States and Rs 1.50 to other States. The States would meet the rest 20 paise and 50 paise respectively per child per day for Northeastern and for other States. The revised guidelines also provided for central support under the MDMS scheme, up to a maximum of Rs 60,000 per shed, for the construction of kitchen sheds (to serve as kitchen-cum-store) wherever the State/Union Territory was unable to meet the cost through convergence with other centrally funded programmes. The new guidelines provided for a one-time grant of Rs 5,000 per school towards 'assistance for cooking/kitchen devices [gas stove with connection, stainless steel water storage tanks, cooking and serving utensils, etc.]'. The revised scheme also provided Rs 100 per quintal for 11 special category States and Rs 75 per quintal for other States towards meeting the cost of transport of grain. Finally, the Central government provided 1.8 per cent of scheme cost to the States/UTs for management and monitoring and evaluation (MME), with the Centre spending 0.2 per cent of scheme cost towards MME[48].

While the new guidelines vest the overall responsibility for the scheme with the States/UTs,

[48] During the financial year 2006 – 07, the Central government allocated 21.6 lakh metric tonnes of grain, Rs 2,607 crore towards recurring expenses for cooking cost, transport subsidy and management, monitoring and evaluation. It provided an additional assistance of Rs 1,586 crore for infrastructure spending for kitchen sheds and devices (GoI, 2007l).

Table 5.1 Central Government Norms for per Child Allotment under MDMS

Sl. No	Category	2004 guidelines (per child per day)	2006 guidelines (per child per day)
1.	Protein	300 Kcal	450 Kcal
2.	Nutrients	8 – 12 grams	Minimum 12 grams
3.	Micronutrients	Not prescribed	Adequate quantities of micronutrients like iron, folic acid, vitamin-A etc.
4.	Cooking cost	Re 1	Rs 2

they also provide for a detailed programme management structure, from the national right down to the level of local bodies, as well as guidelines for associating NGOs in the scheme. A particularly innovative aspect here is the activity mapping exercise suggested for application by the State governments with a view to enhancing the involvement of local bodies and the community in the scheme. The guidelines also provide for systematic concurrent monitoring and evaluation, using detailed formats and reporting systems.

It is thus evident that, over the last decade or so, the midday meals programme has come to stay, thanks to governmental initiatives, judicial intervention and social movements for the right to food. While it may be too early to assess the functioning and the impact of the MDMS in a comprehensive manner, especially in terms of long term aspects like nutritional improvement, it is nonetheless useful to undertake a preliminary exploration.

5.5 MDMS: Promise and Performance

The stated objectives of MDMS, as we have seen, include:

i) An increase in number of school going children, in terms of both attendance and enrolment

ii) Improvement in nutritional status of the children

iii) Promotion of social equity in terms of gender and caste

There have been several evaluation studies of the working of MDMS in recent years. Some data on school enrolment and attendance is also available. These make possible a preliminary assessment of MDMS.

A study in Birbhum District of West Bengal found, in its evaluation of MDMS that the scheme had led to a significant increase in enrolment and attendance of children, the increase being particularly marked in the case of girls and children from the Scheduled Castes and Scheduled Tribes. It also found that the MDMS had averted severe undernourishment, reduced social distances and curbed teacher absenteeism (Pratichi Trust, 2005).

Similar findings have been reported from studies in Rajasthan, which have found that more than two-thirds of parents found the quality of the midday meals to be satisfactory and 85 per cent wanted the scheme to continue (Mathur et. al., 2005). A survey in seventy 'most backward' villages of Madhya Pradesh reported that 90 per cent of teachers and cooks said the meals was being regularly provided, and that 96 per cent of parents wanted the scheme to continue. Also, 63 per cent

of parents and 74 per cent of teachers felt that the meals has helped improve the children's learning abilities. There was a 15 per cent increase in overall enrolment. The increase was much higher in the case of SC and ST children (43 per cent), girls (38 per cent), SC and ST girls (41 per cent) (Jain and Shah, 2005).

A study of MDMS in rural Rajasthan (Blue, 2005) reported that:

- Cooked midday meals had become a permanent part of the daily routine of rural primary schools in Udaipur.
- There were efforts in introducing variety of menus.
- Meals were helping nutritional needs of poor children.
- Enrolment and attendance had increased.

Afridi (2005) reports improved functioning of MDMS in Madhya Pradesh while noting that there is room for further improvement. Rama Naik (2005), reports that the MDMS had led to a considerable increase in student enrolment and a decrease in teacher absenteeism in Karnataka. She also found that midday meals were being served regularly and that there was a high degree of satisfaction with the scheme on the part of both parents and students.

A study in Chittorgarh District, Rajasthan found that:

"[O]verall implementation of MDM scheme is good and has had some impact on enrollment, retention and attendance of students in primary schools. The quality of education, nutrition and health has also improved to some extent. But the schools are still lacking in infrastructure facilities like kitchens, storerooms, latrines and sufficient classrooms. Water facility is also not available in many schools" (CART, 2006).

The study, covering 211 schools in 14 blocks of Chittorgarh District also found that the enrolment and retention had increased in about 64 per cent of the schools over the last 3 years (Drèze and Goyal, 2003).

In an earlier study conducted between January and April 2003 and covering 27 randomly selected villages in the three States of Chhattisgarh, Rajasthan and Karnataka, Drèze and Goyal found that in 76 out of 81 sample schools, midday meals were being regularly served (Drèze and Goyal, 2003). Taking the 81 sample schools together, Class 1 enrolment rose by 15 per cent between July 2001 and July 2002, with female enrolment in Chhattisgarh (17 per cent) and Rajasthan (29 per cent) being even higher. As Drèze and Goyal observe, 'Provisional enrolment data for Chhattisgarh and Rajasthan, 19 per cent and 18 per cent, respectively as a whole, supplied by the Education Department, also suggest major jumps in female enrolment, in 2002 – 03. There is a striking break here from the trend increase in school enrolment (about 2 per cent per year in the 1990s), and the bulk of this break is likely to reflect the impact of midday meals (ibid.).

The MDMS evaluation study carried out by NIPCCD in Madhya Pradesh during 2005 – 07 found that the scheme played an important role in reducing dropout rates, especially among girls. Around 71 per cent of the stakeholders accepted this fact. They also further stated that the MDMS scheme increased social equity by bringing children from different social groups and letting them sit under the same roof. The report finally stated that the system brings down gender gap in education by improving female enrollment rates and also gives employment to rural and tribal women (NIPCCD, 2007).

Table 5.2 Students Covered under Mid-Day Meals Scheme in India, 2001 - 06

States	2001 – 02	2002 – 03	2003 – 04	2004 – 05	2005 – 06
Andhra Pradesh	77,58,454	74,56,254	77,17,673	90,81,299	63,61,814
Assam	30,57,221	31,49,361	32,10,526	33,87,583	47,95,759
Bihar	72,52,547	80,95,780	88,68,044	97,91,760	1,26,38,429
Gujarat	48,56,615	32,59,341	30,04,496	30,11,034	51,32,959
Haryana	16,17,412	15,38,006	15,78,538	16,27,834	16,45,509
Himachal Pradesh	6,68,604	6,39,974	6,14,847	5,90,351	5,77,998
Jammu and Kashmir	7,16,592	8,21,890	7,38,777	7,38,777	10,28,425
Karnataka	55,85,159	56,21,960	53,49,540	51,26,042	49,62,764
Kerala	23,34,680	23,55,686	21,66,510	21,16,354	19,07,000
Madhya Pradesh	74,82,769	75,79,750	77,29,652	76,49,784	86,65,342
Maharashtra	1,01,25,032	99,30,938	97,21,167	96,65,362	97,79,283
Orissa	44,23,250	46,21,934	46,31,826	51,51,346	51,56,154
Punjab	16,59,750	16,20,811	15,59,682	14,98,697	15,52,404
Rajasthan	62,21,663	71,77,718	76,78,153	76,62,192	1,02,15,570
Tamil Nadu	58,00,543	54,01,644	55,29,945	43,05,932	41,52,167
Uttar Pradesh	7,63,093	1,48,55,697	1,63,74,892	1,69,96,916	1,86,44,467
West Bengal	95,81,419	1,05,63,148	1,02,68,683	1,02,90,761	1,08,86,311
All India	**10,34,52,587**	**10,35,94,682**	**10,56,65,960**	**10,87,27,254**	**11,93,91,681**

Note: The numbers relate to children in primary schools.

Source: Ministry of HRD, GoI

5.5.1 Increase in enrolment

Continuing with the analysis, it is clear from the available data (Table 5.2) that since the initiation of the National Programme of Nutritional Support to Primary Education (NP-NSPE) in 1995, and with its further strengthening consequent to the Supreme Court orders, there has been a steady increase in the number of children covered under the midday meals scheme across many States in the country.

States such as Tamil Nadu and Kerala, where a universal or near universal MDMS has been in operation for a long time and where the demographic regime has stabilised and the population in the primary school age group is not increasing, do not show dramatic changes in midday meals participation for obvious reasons. On the other hand, in States where the NP-NSPE of 1995 had been indifferently implemented or remained largely unimplemented on account of financial constraints arising from non-provision of assistance by the Central government towards cooking costs, there is a clear improvement after the NP-NSPE guidelines of 2004 came into force. The improvement comes in the aftermath of the Supreme Court judgment of November 2001, but compliance with the historic judgment remained poor or lukewarm prior to 2004. This is especially evident when one looks at the figures for States such as Rajasthan and Bihar. In Rajasthan, the number of children getting a hot cooked meals in the school increased from 62.22 lakhs in 2001 – 02 to 71.78

lakhs in 2002 – 03 following the Supreme Court judgment of November of 2001, and further to 76.76 lakhs in 2003 – 04 before falling marginally in 2004 – 05 to 76.62 lakhs. But it jumped to 102.16 lakhs in 2005 – 06, following the implementation of the NP-NSPE guidelines of 2004 by the Centre. Bihar shows a similar picture, but with a more steady expansion from 72.53 lakhs in 2001 – 02 to 97.92 lakhs in 2004 – 05, and a big jump, as in the case of Rajasthan, to 126.38 lakhs in 2005 – 06. Uttar Pradesh and Madhya Pradesh also show considerable increase in the number of children reached under the MDMS in 2005 – 06 as compared to 2004 – 05 and earlier years. States, such as Maharashtra, which have only partially implemented the MDMS do not show improvement while the large fall in Andhra Pradesh in 2005 – 06 as compared to 2004 – 05 is puzzling.

At the level of India as a whole, the number of children covered under the MDMS rose gradually from 10.36 crore in 2001 – 02 to10.87 crore in 2004 – 05, and then registered a sharp increase to 11.94 crore in 2005 – 06.

MDMS, by providing cooked meals on all working days at the school itself contributes not only to increase in school enrolment but also increases regular attendance. The alternate policy of providing dry rations of grain once a month would presumably be less effective in this regard. It would also not ensure that the grain thus distributed was actually consumed by the children for whom it was intended. Several studies and reports have reported that MDMS increases regular attendance in MDMS implementing centres[49]. According to the Department of Basic Education, the agency for implementing MDMS in Uttar Pradesh, the large rise observed in school attendance during 2005 – 06 and 2006 – 07 was mainly due to MDMS, which was started in the State in 2004 (Awasthi, 2007).

MDMS also has the potential for creating awareness among the children about hygiene and clean environment. The midday meals in school provides an opportunity to educate students about the importance of washing hands and plates, of hygienic toilets and of maintaining a clean environment in and around the school. Similarly, a participatory MDMS, where parents will be involved in monitoring the programme, can play an indirect role in improving basic knowledge about nutrition and elementary education among the parents of school-going children.

5.5.2 MDMS and nutritional status of children

India's population of children in the age group of 0 – 14 is less than 20 per cent of the world's total population of children in the same age group. However, India's malnourished children account for around 40 per cent of malnourished children in the world (World Bank, 2004). Data presented in Table 5.3 below provide some idea of the permanent nutritional emergency among the children in India.

Table 5.3 Undernutrition among Indian Children

Age	Undernutrition/underweight children, per cent		
	Mild	Moderate	Severe
6 – 9 years	31.9	54.0	8.6
10 – 13 years	18.2	47.8	30.1

Source: NNMB, NIN & ICMR, 2002

As stated in the beginning, NFHS-3 data for reference year 2005 – 06 show that 45.9 per cent of children under 3 years of age are malnourished in India, a figure practically no different from that for 1998 – 99 given by NFHS-2. Both earlier studies from the early 1980s through the mid 1990s and more recent evidence from NFHS-2 and NFHS-3 also bring out the fact that a large proportion of Indian children suffer from iron-deficiency anaemia

[49] Blue (2005); Drèze and Goyal (2003); Khera (2006b); School Health (2006); The Assam Tribune (2007).

as well as other micronutrient and vitamin deficiencies[50].

While the ICDS scheme discussed in Chapter 4 is intended to provide supplementary nutrition for children below 6 years of age, the MDMS is intended to provide supplementary nutrition to school going children as well as address the problem of classroom hunger.

While it is too early to judge the long term impact of midday meals on child nutrition in the age group of 6 – 14 years, there are clearly a priori arguments which strongly suggest that it would be positive, especially in the case of vulnerable sections of the population. As Drèze and Goyal point out, "mid-day meals facilitate the abolition of classroom hunger. Many Indian children reach school on an empty stomach in the morning, as early morning breakfast is not part of the household routine. In the absence of a mid-day meal, pupils often go hungry after a few hours and find it hard to concentrate". Further, "in the more deprived areas, the mid-day meals is a protection against hunger in general. This year, for instance, mid-day meals have helped to avert an intensification of child undernutrition in many drought-affected areas. Similarly, poor households such as those headed by widows or landless labourers value the assurance of a free lunch for their children. The contribution of mid-day meals to food security seems to be particularly crucial in tribal areas, where hunger is endemic" (Drèze and Goyal, 2003).

Studies show that MDMS has benefited children whose parents work as casual wage labourers. These children are generally hungry during the day, because their parents work as wage labourers either far away or go to work early. MDMS is a supplement to, not a substitute for, a home meals among these children. Studies of MDMS have shown that it is the weaker sections that avail the MDMS regularly (Blue, 2005; NIN, 2004). The midday meals can also be expected to contribute in the long run to food security by ensuring education, which in turn will increase productivity and ultimately income.

5.5.3 MDMS and social equity

A central social problem in India is that of pervasive caste discrimination. In particular, discrimination against scheduled castes and scheduled tribes is a striking feature, especially sharp in rural India. Particularly abhorrent is the practice of untouchability and social segregation of SCs from caste Hindus. Midday meals, by getting children to eat together regardless of caste divides, and by involving SCs along with other communities in the operation of the scheme including cooking, can contribute to breaking barriers of caste and help promote egalitarian values among children. This is of course far from being an automatic process. Available evidence does point to considerable resistance to elimination of social discrimination in the MDMS. As Drèze and Goyal note, "mid-day meals can also be a tool of reinforcement of prevailing social inequalities. For instance, during the pilot survey in Rajasthan, we found one village (Joz in Rajasamand district) where SC children had to drink from separate pitchers. This is an abominable instance of caste discrimination in the classroom, which defeats the socialisation role of mid-day meals..... Further, there does seem to be much upper-caste resistance to the appointment of SC cooks. In Karnataka, half of the cooks in the sample were SC, and there seems to be wide social acceptance of this arrangement. In Chhattisgarh and Rajasthan, however, cases of SC cooks were largely confined to schools with no upper-caste children. We also noted instances of active parental resistance to the appointment of SC cooks, as in Kolu Pabuji

[50] *Guidelines of the NP-NSPE, 2006,* Annexure 1, MoHRD, GoI, 2006d.

(Jodhpur district, Rajasthan) where a Rajput parent had thrown sand in the mid-day meals because it had been cooked by a Meghwal woman" (Drèze and Goyal, 2003).

However, Drèze and Goyal also note that, "The survey evidence suggests that open discrimination is rare. For instance, we did not find any cases of separate sitting arrangements or of preferential treatment for upper caste children. Pupils of all social backgrounds seem to be quite happy to sit together and share the same food. Parents, too, claim to welcome the arrangement in most cases. Teachers confirmed that parents rarely objected to their children sharing a meals with children of other castes. And among disadvantaged castes, very few parents felt that their children had ever experienced caste discrimination in the context of the mid-day meal" (ibid.).

A survey conducted by the Indian Institute of Dalit Studies in five States (Lee and Thorat, 2004)[51] found that in Uttar Pradesh and Bihar where one third of the country's dalit population is concentrated, the dalits are being denied access by the refusal to implement the cooked meals scheme; and there is caste discrimination in the distribution of dry grains to government school children. The survey also found that in the other three States, viz. Rajasthan, Tamil Nadu and Andhra Pradesh, opposition to dalit cooks, segregated seating and segregated meals and unfavourable treatment in food allotment are the means of caste discrimination observed. Andhra Pradesh, however, was found to have shown political will in employing dalit cooks and organisers.

As the MDMS is strengthened over time, and as the community comes to 'own' it, one hopes that it will play a role in breaking down caste barriers and discrimination.

The impact of MDMS on gender equity can, on the other hand, be expected to be unambiguously positive. There is clear evidence of significant increase in female enrolment when MDMS gets implemented (Afridi, 2005; Drèze and Goyal, 2003; Drèze and Kingdon, 2001; Khera, 2006b). MDMS employs women for cooking and for helping with cooking and also as local organisers. This will also contribute to empowerment of women and to addressing the issue of gender inequality.

MDMS helps address the issue of child labour as well. The dire economic status of many poor households forces children of these households to work for survival rather than go to school.

5.6 Evidence from NSSO Data

Data from the 61st round of the NSSO for reference year 2004 - 05 suggest that 22.8 per cent of India's rural households had atleast one member benefiting from the MDMS (Table 5.4)[52]. The eligible households — those with one or more children attending primary school — would of course be a subset of all households, and so effective coverage figures would be higher than the numbers given here. The proportion varied across States, with 40.6 per cent for Chhattisgarh to 3.1 per cent and 1.3 per cent respectively for Punjab and Jammu and Kashmir. Karnataka reported 33.4 per cent, Madhya Pradesh 32.3 per cent and Tamil Nadu 31.8 per cent. West Bengal followed closely with 29.8 per cent. However, the States of Bihar, Jharkhand and Uttar Pradesh, where the programme is most urgently needed, lagged behind at 10.7 per cent, 11.2 per cent and 16.1 per cent respectively.

[51] www.rightofoodindia.org

[52] The data and findings are subject to the limitations expressed in section 4.5 of Chapter 4.

Table 5.4 Percentage of Rural Households with atleast One Member Benefiting from MDMS during the Last 365 days, 2004 – 05

States	% of hhds
Andhra Pradesh	21.6
Assam	18.0
Bihar	10.7
Chhattisgarh	40.6
Gujarat	27.2
Haryana	15.8
Himachal Pradesh	27.7
Jammu and Kashmir	1.3
Jharkhand	11.2
Karnataka	33.4
Kerala	21.7
Madhya Pradesh	32.3
Maharashtra	26.6
Orissa	26.5
Punjab	3.1
Rajasthan	21.6
Tamil Nadu	31.8
Uttar Pradesh	16.1
West Bengal	29.8
All India	**22.8**

Source: NSSO Report No. 510, GoI, 2007k

The 61st round NSSO data also show that the MDMS is availed to a proportionately greater extent by the STs (28.8 per cent) and SCs (25.3 per cent) than by other communities (OC) – Table 5.5[53]. While this is to be expected, it is clear that even among these vulnerable sections, only a minority of households is accessing the scheme. It is likely that, with NP-NSPE 2006 coming into implementation, these figures may have improved marginally, but it is also a fact that, despite the Supreme Court's unambiguous directives for universal provision of hot cooked meals for children at primary schools across the country, the programme is far from being universally implemented. The other point which emerges from the NSSO data as far as social exclusion is concerned is that the OBCs, SCs and STs avail MDMS to a significantly higher extent than do the OCs. Some social status-based self-selection is evident.

Table 5.5 Percentage of Rural Households with atleast One Member Benefiting from MDMS, during the Last 365 days (Different Social Groups), 2004 – 05

States	ST	SC	OBC	Others
Andhra Pradesh	23.1	26.2	22.9	14.7
Assam	17.0	22.7	17.5	17.6
Bihar	8.0	13.4	10.8	6.5
Chhattisgarh	38.1	48.3	42.1	26.0
Gujarat	40.4	24.4	29.9	13.4
Haryana	19.0	25.4	16.6	8.1
Himachal Pradesh	24.8	34.8	27.2	24.8
Jammu and Kashmir	0.0	0.6	0.6	1.7
Jharkhand	12.0	11.4	11.2	8.6
Karnataka	45.6	33.6	33.9	29.7
Kerala	35.8	29.7	23.5	14.4
Madhya Pradesh	38.9	34.4	29.4	25.7
Maharashtra	28.6	29.1	25.6	25.9
Orissa	27.2	29.0	26.4	22.
Punjab	0.0	4.1	5.3	7.0
Rajasthan	24.7	23.1	22.9	13.3
Tamil Nadu	31.8	41.1	29.1	7.1
Uttar Pradesh	10.8	20.0	15.8	11.6
West Bengal	26.9	28.7	31.9	30.6
All India	**28.8**	**25.3**	**22.1**	**19.1**

Source: NSSO Report No. 510, GoI, 2007k

[53] The proportion for agricultural labour and other labour households is 29.1 per cent and 26.4 per cent respectively, as against the overall average of 22.8 per cent.

Table 5.6 presents data on percentage of rural households with atleast one member benefiting from MDMS by MPCE decile category. As in the case of ICDS, it is clear that a higher proportion of the households who constitute the bottom 30 per cent in terms of MPCE avail MDMS services as compared to the upper deciles, the proportions being 50 per cent and above in Chhattisgarh, Gujarat, Himachal Pradesh, Karnataka, Tamil Nadu and Kerala. In Andhra Pradesh, Madhya Pradesh, Maharashtra and West Bengal, the figure exceeds one-third. The proportion exceeds 25 per cent in most States, the only States falling below this figure being Punjab, Bihar and Jammu and Kashmir. In the case of the next four MPCE deciles also, the MDMS reach is not too bad. It exceeds 30 per cent in the States of Chhattisgarh, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and West Bengal.

Table No. 5.6 Percentage of Rural Households with atleast One Member Benefiting from MDMS – MPCE Classwise, 2004 – 05

States	Bottom 30%	Middle 40%	Top 30%	All
Andhra Pradesh	34.76	23.84	11.75	21.60
Assam	28.63	19.83	11.54	18.00
Bihar	12.65	10.53	5.95	10.70
Chhattisgarh	52.62	30.77	24.44	40.60
Gujarat	50.14	36.07	12.03	27.20
Haryana	27.85	27.69	9.76	15.80
Himachal Pradesh	56.72	41.92	19.05	27.70
Jharkhand	14.69	10.11	5.83	11.20
Jammu and Kashmir	3.19	0.65	1.56	1.30
Karnataka	49.82	33.09	16.78	33.40
Kerala	41.30	35.63	16.26	21.70
Madhya Pradesh	41.81	31.01	15.00	32.30
Maharashtra	42.74	26.74	15.26	26.60
Orissa	30.06	25.27	15.84	26.50
Punjab	3.41	7.40	1.26	3.10
Rajasthan	36.52	25.40	12.72	21.60
Tamil Nadu	49.61	36.29	15.49	31.80
Uttar Pradesh	24.14	16.88	7.89	16.10
West Bengal	42.38	32.60	19.11	29.80
All India	**33.40**	**24.68**	**12.58**	**22.80**

Source: NSSO Report No. 510, GoI, 2007k

5.7 Weaknesses and Limitations

Lack of universal implementation as brought out from the NSSO data is one important weakness of the MDMS at present.

There are several other weaknesses of MDMS, both in implementation on the ground and in its concept and design. The MDMS has addressed to some extent the nutrition security of nutritionally deprived school children. But it does not cover children out of school. When we move away from an instrumentalist understanding of MDMS as merely an instrument to get children into school, and adopt a rights-based viewpoint that regards the nutrition security of the child as a human right, the need to expand the MDMS to cover out-of-school children becomes evident. The most vulnerable children in our rural society are denied both the right

to food and the right to education[54]. This issue needs to be addressed and the MDMS redesigned accordingly. A working group of the Planning Commission has noted that the number of children in the primary school age group either out-of- school or studying in non-fee charging private schools would not amount to more than 10 to 12.5 million and recommended the expansion of the MDMS to cover these segments (GoI, 2006e).

A key problem in implementation has to do with both the quantum of funds required and the flow of funds in the scheme. Until the revised norms of 2006 came into effect, the States, on their part, pleaded serious financial constraints in mobilising the resources for cooking costs. Even the revised norms may not solve the resource problem completely, since estimates of cooking costs on the ground are bound to go up, if the cooks, helpers and organisers at the noon meals centres are to get atleast minimum wages. The cost estimates for foodgrain and other ingredients going into the midday meals will also face upward pressure in view of the uncertain situation on the grain front and inflationary pressures in the economy. Even as it is, a Planning Commission working group has noted that "A large number of States continue to face financial difficulties in meeting cooking costs and providing cooked meals. Central assistance to meet cooking cost is much lower than the actual requirement" (ibid.). It has also recommended that "The minimum cost norm for mid-day meals should be raised from the present 'Rs 2 per child per day' to 'Rs 3 per child per day' and that this norm should be automatically adjusted for inflation every two years using the food component of the Wholesale Price Index" (ibid.).

On the other hand, there have been complaints that the delays in disbursement of funds to the implementing agencies at the field level from the State government impact negatively on the scheme in many States. As can be seen from Table 5.7, perhaps as a result of such delays or financial constraints of States, the offtake of grain under the MDMS has consistently fallen short of allocation, the ratio of the former to the latter varying between 75 per cent and 78 per cent during the period 2002 to 2005, and showing only a modest improvement after the Supreme Court verdict of November 2001.

Table 5.7 Allocation and Offtake of Foodgrain under MDMS (lakh tonnes)

Year	Allocation			Offtake		
	Rice	Wheat	Total	Rice	Wheat	Total
2001 – 02	18.67	9.96	28.63	13.48 (72.2)	7.28 (70.9)	20.76 (72.51)
2002 – 03	18.84	9.40	28.24	13.75 (72.98)	7.45 (79.26)	21.20 (75.07)
2003 – 04	17.72	9.08	26.80	13.49 (76.13)	7.20 (79.30)	20.69 (77.20)
2004 – 05	20.14	7.35	27.49	15.41 (76.51)	5.92 (80.54)	21.33 (77.59)
2005 – 06	17.78	4.72	22.50	13.64 (76.74)	3.63 (76.89)	17.28 (76.77)

Note: Figures in parenthesis are percentage of offtake from total allocation

Source: 1) Department of Food and Public Distribution, GoI

2) Ministry of Human Resource Development, GoI

[54] The category of vulnerable children ought to include street children, homeless children, children in chronic hunger, children of migrant labourers, child workers and differently abled children.

The issue of adequacy or inadequacy of resources also arises with respect to provision of infrastructure such as cooking sheds, cooking devices such as smokeless *chulahs* as well as utensils for food preparation and serving[55]. Moreover, schools need to provide plates to be used by the children to ensure uniformity and minimise social distances under the MDMS. There needs to be provision for training and skill upgradation for staff in the scheme. Funds also need to be allocated for 'Information, Education and Communication' activity to disseminate messages of health and nutrition. It is very evident that even the revised funding norms and provisions of the NP-NSPE 2006 need to be re-examined in the light of these needs.

5.8 Recommendations

Ultimately, the success of MDMS ultimately depends critically on sustained community support and ownership of the scheme. The 11th Plan working group on Literacy and Elementary Education notes, "The key weakness of the programme has been inadequate involvement of grassroot level structures and elected local bodies. Either they have been totally ignored or their roles and functions have not been delineated properly". It recommends that:

> States need to be encouraged to entrust management and monitoring of the programme to Panchayati Raj Institutions (PRIs). Both foodgrains and funds should devolve to the Gram Panchayats and urban local bodies, which would utilize the same for regular provision of mid-day meals in schools. This will ensure an over-arching role for PRIs in actual implementation. The PRIs should be provided with guidelines on the nutritive value of foods and allowed the flexibility to use culturally appropriate food in the menu and diversify it to suit the local needs and tastes. Adequate representation of *dalits* and women's representative should be there in the Standing Committee of Panchayat, which would oversee the planning, implementation and monitoring of the programme. For their appropriate role and functioning, training and capacity building activities need to be provided (GoI, 2006e).

From the point of view of food and nutrition security, there needs to be a much greater degree of integration between the MDMS and government interventions in health and nutrition. Currently, it is only in a few States that the school health programme or health and nutrition interventions like de-worming or provision of iron and folic acid tablets is integrated into the MDMS. Similarly, the MDMS could be a very useful vehicle for nutrition and health education, not only for children, but also their parents, teachers and the other participants/ stakeholders such as the members of elected local bodies, SHGs and Village Education Committees.

The Supreme Court intervention has helped promote the view that MDMS is to be seen not as a contingent welfare measure of the government but as a partial fulfillment of children's right to food, consistent with the relevant constitutional provisions and India's obligations as a signatory to international conventions governing the rights of children. However, this emerging view is still held with considerable fragility, and there is a need for strengthening this view through community

[55] A field study in Kerala found the funds allotted by the government to be inadequate and also reported delay in the transfer of contingency fund to schools (Gangadharan, 2006).

Box 5.3 Fortification Initiatives

Wheat Flour (*Atta*) Fortification

The NFHS-3 showed a sharp jump in the prevalence of anaemia in the country. This is of serious concern because anaemia leads to serious impairments and increased morbidity from infectious diseases. Wheat, the staple food widely consumed, has good calorie and protein content, but lacks iron.

A pilot project initiated by WFP in Surendranagar District of Gujarat aims at improving the nutritional quality of wheat flour and bajra, the local staple foods, by fortifying them with iron and folic acid. A model has been developed for fortification of flour on a small scale in village *chakki* mills to complement the ongoing large-scale fortification of flour in Gujarat. It is important to work with the village *chakki* millers to fortify flour produced in the villages because it is this flour that is consumed by the people living in rural areas. With successful replication of the pilot project in other districts in Gujarat, more than 90 per cent of the wheat flour produced and consumed in the State would be fortified.

Fortification of Midday Meals

Surveys have shown that the diet the children of school-going age consume are not only deficient in calories and proteins, but are also deficient in growth-promoting vitamins and minerals. A nutritionally balanced meals with the recommended levels of micronutrient fortification is, therefore, essential for achieving optimum development of children. The WFP is testing a new approach of fortifying cooked midday meals (MDM) with a micronutrient premix formulation that is based on WHO recommendations. Each meals when fortified will provide 75 per cent of the daily micronutrient requirements. WFP is testing this approach in a pilot project in Uttarakhand.

The acceptability study shows that the fortified MDM was as acceptable as the non-fortified MDM. There will be an impact assessment, which will look at Blood Haemoglobin values, levels of Serum retinol, Serum Ferritin, Serum Zinc and C-reactive Protein. In addition, the impact of the incidence of diarrhoea and fecal parasite on school attendance, on anthropometric measures and on behavioral change will be studied. Lessons drawn from this pilot initiative will be applied for promotion of the project in other States.

Source: WFP, 2008, India Country Office, New Delhi

mobilisation and social activism. An important role in this regard has been played, for instance, by the vibrant right-to-food movement. It needs to be recognised that the rights-based approach is inconsistent with a neoliberal policy regime, and will therefore require constant reinforcement under the present dispensation. It is encouraging, therefore, to see that the 11th Plan Working Group on Literacy and Elementary Education has recommended the extension of the MDMS to the upper primary stage of school education as well as its extension to out-of-school children. The Group has recommended provision of 700 calories and 20 grams of protein for upper primary children, and a corresponding provision of 150 grams of grain, 25 grams of pulses, 65 grams of vegetables (including leafy vegetables) and 10 grams of oil, besides condiments to taste. It has also recommended a cooking cost of Rs 4 per student, to be shared in the ratio of 3:1 by Centre and States (90:10 in the case of special category States)[56].

The MDMS has, on the whole, been an important and relatively successful intervention to enhance the food and nutrition security of children*. It needs to be strengthened and its quality improved by ensuring community ownership and participation through elected local bodies and through more effective monitoring and management. Its scope needs to be widened to encompass out-of-school children and to cover all children till they complete secondary school. The recurring financial requirements of the scheme, for both the Centre and the States combined, is unlikely to exceed Rs 15,000 crore, a rather modest sum, both when weighed against the benefits to the nation in terms of human resource development and when viewed as a share of total government expenditure. It is in fact a commitment of the NCMP of the Government of India.

[56] The MDMS has been extended to children in upper primary classes in 3,479 educationally backward blocks from 1 October 2007 and will be expanded to cover the entire country from financial year 2008 – 09. But the cooking cost provision by the Central government has been kept at Rs 2.50 per student. (GoI, 2007l)

* See Box 5.3 on WFP initiatives to fortify MDMS

PART III

Chapter 6

Conclusions and Policy Recommendations

6.1 Brief Review

We began this Report by examining the global evolution of concepts and concerns in respect of food and nutrition security. We then went on to study the situation in India and its major States with regard to food security by looking at the three aspects namely availability, access and absorption. Following a discussion of trends in availability, access and absorption at the All India level, we carried out an exercise of constructing an index of Food and Nutrition Insecurity for the major States of India. The focus was on chronic food and nutrition insecurity; therefore the problems of transitory and silent hunger were not dealt with. Four outcome measures, the percentages respectively, of ever married women age (15 – 49 years) who are anaemic, of women (15 – 49 years) with CED, of children in the age group 6 – 35 months who are anaemic and of children in the age group 6 – 35 months who are stunted, entered into the Index. Three input measures, the percentages respectively, of rural population consuming less than 1890 Kcal /cu/diem, of rural households not having access to safe drinking water and of rural households not having access to toilets within the premises were considered. While the first is the bare minimum calorie intake level to ward off long-term malnourishment, the other two are non-food factors having a direct bearing on food absorption and health. The UNDP Human Development Report 2006 emphasises clean water and sanitation as the most powerful drivers for human development. Poor sanitation has a direct impact on the biological absorption of food in the body. Halving the proportion of world population without sustainable access to safe drinking water and basic sanitation – Goal 7, target 3 of the UNMDG – is a key target that can help achieve other goals like reducing maternal and child mortality and addressing malnutrition.

The exercise of index construction and mapping was done for two time periods, 1998 – 2000 and 2004 – 06 and this showed significant changes in the relative ranking of various States over time[57]. While Kerala remained the least food insecure State between the two time periods, more States are observed to have become relatively less food insecure between 1998 – 2000 and 2004 – 06. These include the States of Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal and Himachal Pradesh. The improvement is most striking in the

[57] The data underlying the index calculated for the period 1998 – 2000 have been drawn from NSSO 1999 – 2000 and NFHS-2 1998 – 99 and the Census 1991. Similarly, the data underlying the Index for the period 2004 – 06 have been drawn from NSSO 2004 – 05 and NFHS-3 2005 – 06 and the Census 2001.

case of Himachal Pradesh and marginal in the case of Punjab. Both the States move from the status of low food insecurity to the category of very low food insecurity, on par with Kerala. The other four States have shown significant, though not dramatic, improvement. There is no change in the status of other States. Only Chhatisgarh and Jharkhand which were part of Madhya Pradesh and Bihar respectively during the first time period, are found to have very high level of food insecurity in the latter period, while Bihar and Madhya Pradesh continue to remain in the category of 'highly food insecure'. Detailed analysis of the performance of each State and reasons for deterioration in ranking on the food security scale would however require more research. The three States that have seen a spate of farmer suicides in the current decade, Maharashtra, Andhra Pradesh and Karnataka find themselves in the category of 'highly food insecure' in both time periods, a reflection perhaps of the manifestation of the agrarian crisis in the States and its consequent negative impact on the health and well-being of the rural population.

The Midterm Appraisal of the Tenth Five Year Plan also drew attention to the loss of dynamism in agriculture and allied sectors after the mid-1990s "In fact during the last decade or so Indian agriculture has faced a number of severe challenges, superimposed on the long-term demographics" (GoI 2008b). Growth of employment in rural India was also extremely poor in the period between 1993 – 94 and 1999 – 2000, going by the data from the 50th and 55th rounds of the National Sample Survey Organisation. The increase in the rate of growth of rural employment between 1999 – 2000 and between 2004 – 05 as seen from the 61st round of the NSSO has still not been sufficient to reach the rural employment growth rates of the period 1983 – 1993/94; much of it has been in self-employment and in informal sector activities, raising serious questions about the quality and terms of employment and the impact on food security of such employment.

After analysing the trends in the state of food and nutrition insecurity in major States over the period 1998 – 2000 and 2004 – 06, we went on to discuss the flagship food security programme of the country – the Public Distribution System – as it has evolved over the decades, focusing especially on the period of economic reforms under way since 1991. It was our finding that the PDS had served the country well as it expanded from a few urban centres in early 1950s to more or less the whole country by the early 1980s. There were, no doubt, several operational problems including inefficiencies and leakages, but few would deny that the PDS had played a crucial role in ensuring access to foodgrain for a significant proportion of the population that would otherwise have gone hungry. We noted that this role of the PDS was closely linked to the strategy for agricultural development evolved in the mid-1960s and to the leading role of the State in India's growth and development. However, as the country embarked on a structural adjustment programme in 1991, the policy thrust on reduction of budgetary deficits primarily through expenditure reduction meant curtailing of subsidies and a sharp rise in the issue prices of food grains through the PDS. Subsequently, the targeted PDS was introduced in 1997. The consequences of the TPDS for both food security and the viability of the PDS itself were examined on the basis of available data and research studies, and we came to the conclusion that the PDS can be improved and made more effective through certain policy interventions and reform. Second, if PDS is to address the issue of food security at the household level, the ration must be on a 'per capita' basis and not on a 'per household' basis. Third, there must be effective dissemination of all information including various entitlements pertaining to the PDS to the users. Fourth, elected local bodies must be actively

involved in monitoring the PDS. Given that the viability of the ration shop is critical to PDS, the margin needs to be appropriately revised. Given that, under normal circumstances, the food subsidy has been around or less than one-half of one per cent of GDP, and given the importance of food and nutrition security from both the rights perspective and a human development viewpoint, the case for universal PDS with a uniform, affordable price – which will also restore the market stabilising function of the PDS – is indeed compelling (See Box 6.1 on feasibility of moving towards universal PDS). It may also be noted that the State of Tamil Nadu has continued with the universal PDS.

Following the discussion of the PDS, we went on to examine rather briefly two other important interventions of the State in the arena of food and nutrition security, namely the Integrated Child Development Services scheme and the Mid-Day Meal Scheme, the developments in respect of the which have been more encouraging.

Box 6.1 Is Universal PDS Economically Feasible?

1. Let us assume that the PDS is made universal in the sense that its reach is around 80 per cent of our population who are either malnourished or at the risk of malnutrition, that is, food insecure. The PDS should only exclude (if necessary by self-selection or voluntarily) the richest 20 per cent of our population. So the target group is about 800 million persons.
2. Let us assume that 80 per cent of the population is given the present BPL allocation and price, that is, 35 kg of grain at the subsidised price of Rs 4.15 for wheat and Rs 5.65 for rice.
3. If the economic cost is Rs 1,286 per quintal of rice and Rs 983 per quintal of wheat (estimates for 2005 - 06 in the Economic Survey), then the unit subsidy is Rs.7.21 per kg of rice and Rs 5.68 per kg of wheat.
4. If 800 million persons are to be included, it can be assumed to service 160 million families (average of 5 persons per family).
5. So, first, the grain requirement for the PDS will be 160 million times 35 kg (ceiling) or 56 million tonnes. In 2005 - 06, the PDS offtake was 49.7 million tonnes (including Antyodaya), so this is quite feasible. (In 2004 - 05, the offtake was 30 million tonnes).
6. The cost of the food subsidy, assuming all the grain is distributed at the same price will be

For 30 million tonnes of wheat	Rs 17,040 crore
For 26 million tonnes of rice	Rs 18,746 crore
Total	Rs 35,876 crore

The above estimates of a grain requirement of 56 million tonnes and a subsidy of Rs 35,000 crore is an overestimate since all 160 million households are unlikely to purchase 35 kg of grain a month.

Further, the total subsidy works out to just a little over 1 per cent of GDP. If the tax to GDP ratio, which has fallen since 1991, can be raised by 1 percentage point, then this can be easily financed. This expenditure will be more than compensated by the rise in national income arising from higher productivity as a result of eliminating endemic hunger and malnutrition.

Source: Dr. Madhura Swaminathan, Reproduced from NCF, GoI, 2006c.

Thanks both to judicial intervention in the form of a series of path-breaking interim orders by the Supreme Court of India, following the sustained work put in by the right to food movement and a number of activist organisations and individuals*, and to the outcome of the parliamentary elections of 2004 which led to the formulation of a National Common Minimum Programme (NCMP) by the government of India on the basis of an understanding arrived at between the ruling coalition and the Left Parties supporting it from outside, the MDMS and the ICDS programmes have moved forward in important ways. The programme where the largest gains in terms of food security have come has been the MDMS. Though the Government of India announced the launch of a National Programme of Nutritional Support to Primary Education (NP-NSPE) in 1995, it was only subsequent to the intervention of the Supreme Court in 2001 that things moved forward. Since then, the MDMS has become nearly universal, with hot cooked meals being served to millions of primary school children across the country. The guidelines of the scheme have also been revised twice – in 2004 and in 2006 – in ways that strengthen the programme and its impact on food security of children in the government and government-aided primary schools. Two working groups of the Planning Commission have proposed further strengthening of the scheme through suitable revision of financial norms and extension of the scheme to cover children up to the eighth class.

The picture in respect of ICDS is rather mixed. While court orders with regard to ICDS have been strongly in favour of its universalisation to cover every habitation and hamlet, the response from the Government of India has been lukewarm. There has been a substantial increase in the number of ICDS centres. However, financial allocations to ICDS have fallen far short of the requirements for even running the existing ICDS centres properly, let alone meet the requirements of universalisation. The problems of quality – addressing some of which require substantial modifications in the design of the scheme itself – and of social exclusion remain a major challenge, as does universalisation. ICDS and PDS are two areas where a policy framework with insistence on deficit reduction almost solely through expenditure reduction would not help in enhancing food and nutrition security.

The performance of the public food delivery programmes has been mixed across States that emerge as either food secure or food insecure. This has been brought home by the recent reports available from the NSSO 61st Round and the NFHS-3 that contain data on reach and access and aspects of social exclusion[58]. These clearly bring home the need for more focused direct investment in nutrition and health even in States that are categorised food secure as well as States which may have high rates of economic growth but do not emerge as food secure, a point that has been emphasised in Chapter 2.

Even though universalising PDS will involve a higher quantum of food subsidy, given the hardening of wheat and rice prices in the world market and the higher procurement prices that would have to be provided to Indian farmers, its beneficial consequences in addressing our rather poor record in terms of food and nutrition security far outweigh these costs. Such universalisation should of course go hand in hand with measures to improve the functioning of the PDS.

This Report has focused only on the PDS, the ICDS and the MDMS, and confined itself to the issue of chronic food and nutrition insecurity. The gamut of food security interventions is of course

* See Box 6.2 on Right to Food Campaign

[58] This has been examined in each of the Chapters 3-5.

Box 6.2 Right to Food Campaign

The term 'right to food' refers to the human right to access adequate food to lead a healthy life. The concept gained prominence after the United Nations General Assembly adopted the Universal Declaration of Human Rights (UDHR) in 1948. The right to food not only refers to food distribution but also a decent standard of living and providing nutritious food to children in particular (FAO, 2000; Sengupta, 2000).

In India, the concept of 'right to food' was brought to the forefront by a group of voluntary organisations who started a Right to Food Campaign (RFC). In 2001, the government reported that more than 50 million tones of 'surplus' foodgrains were stored at FCI godowns; even as there were reports of starvation deaths taking place in Orissa and some other parts of the country. At that time, PUCL, Rajasthan filed a Public Interest Litigation (PIL) against the Government of India and all the States. The writ petition demanded that the country's surplus food stocks should be used for protecting people from starvation and death. The Supreme Court issued a series of interim orders in response to the PIL filed by PUCL and motivated voluntary organisations and they formed RFC. Currently, RFC is an informal decentralised network consisting of organisations and individuals working to realise the right to food in India.

The RFC not only deals with sustainable food systems, but also livelihood security. The campaign draws on 'right to life' in Article 21 of the Indian Constitution, to realise freedom from hunger and undernutrition by every individual. The demands under the campaign have been national employment guarantee act, universal midday meals scheme in primary schools, universal integrated child development services for children under six, effective implementation of nutrition schemes, reviving universal public distribution system, social security arrangements for persons unable to work due to old age/disability, equitable land and forest rights. Public campaign activities, like *dharnas, padyatras* and conventions to further their demands are undertaken by the campaign on a regular basis.

The campaign collected signatures from individuals across the country demanding an employment guarantee act, in December 2004, which lead to the Central Government to pass the NREGA in the year 2005. Under the NREGA, the government assures 100 days of employment in a year to rural labourers in selected districts. The campaign is also following up on implementation of the Act in different parts of the country. Likewise, the Supreme Court's series of interim orders on implementation of ICDS and MDMS are the result of right to food campaign (Some of the demands have already been accepted and some are under consideration). As part of their work, the campaign has released primers on NREGA, PDS, MDMS and ICDS. The RFC (www.righttofoodindia.org) continues to be a loosely knit network of most civil society organisations with coordinators in most of the States. At the All India level, the campaign has a steering committee consisting of 11 members. These members represent the eleven organisations that convened the first 'convention on the Right to Food and Work' in Bhopal in June 2004.

Source: Right to Food Campaign India, www.righttofoodindia.org

wider. A number of grain-based welfare programmes have been in operation for several years as part of the set of food security interventions of the government. In the recent period from 2000 – 01, the grain offtake from the central pool under some of these programmes have been substantially higher than before. For instance, the grain allocation to *Antyodaya Anna Yojana* (AAY), meant for 'the poorest of the poor', rose from just 0.24 lakh tonnes in 2000-01 to 74.42 lakh tonnes by 2005 – 06 and rose further in 2006 – 07. The offtake of grain under various welfare programmes (other than TPDS and AAY) rose from 31.93 lakh tonnes in 2000 – 01 to 113.8 and 135 lakh tonnes respectively during the drought years of 2002 – 03 and 2003 – 04 but declined subsequently to 97.48 tonnes in 2005 – 06 (Economic Survey, GoI, various issues).

There are also successfully operating interventions in pockets of food for work in tribal areas (See Box 6.3).

6.2 Some Recent Developments

Overall capital formation in agriculture as percentage of GDP from agriculture was 12.5 per cent in 2006 – 07, the highest in 25 years[59]. The Eleventh Five Year Plan document while highlighting this as a welcome development, cautions against complacency in this regard and talks of the need to further increase public investment in agriculture, the need to improve efficiency of the investment and for measures to ensure that 'future growth is more efficient, sustainable and inclusive' (GoI, 2008b).

The Government has several ongoing schemes where the conscious building in of the food and nutrition security component can go a long way in addressing the problems of hunger and malnourishment. Awareness of these schemes and effective coordination at the implementation level cutting across departmental boundaries can lead to faster and more sustained impact. It has been emphasised for long that, "Given an appropriate blend of improved agricultural technologies, effective delivery systems and services and government policies designed to stimulate both production and consumption, enduring national nutrition security systems can be built within this century" (Swaminathan, M S, 1986).

The country now has a *National Policy for Farmers*[60] in which one of the policy goals is fostering of 'community-centred food, water and energy security systems in rural India to ensure nutrition security at the level of every child, woman and man'. The Eleventh Five Year Plan has emphasised the need for nutrition security through rapid increase in dietary diversification. The *National Horticulture Mission* has improvement of nutritional security, income support of farm households and employment generation among its objectives (See Box 6.4). The *National Bee Board* realizing the potential of employment and income generation through honey production focuses on effectively harnessing bees thereby also increasing yields in agriculture and horticulture. Likewise the focus of the National Bamboo Mission is to direct the development of the sector to meet domestic and international demand and in the process generate local employment.

The National Development Council (NDC) in its 53rd meeting adopted a resolution to enhance the production of rice, wheat and pulses by ten, eight and two million tonnes respectively over the

[59] Gross capital formation in the public sector in agriculture as percentage of GDP from agriculture, increased from 2.1 per cent in 2003 - 04, to 2.8 per cent, 3.2 per cent and 3.7 per cent respectively in the years 2004 - 05, 2005 - 06 and 2006 - 07 (GoI, 2008b).

[60] Based on the recommendations of the National Commission on Farmers, and adopted in November 2007.

Box 6.3 Innovative Food Security Initiatives: The Food for Work Programme in Tribal Areas

Blessed with bountiful natural wealth and rich in human resources, the forested and tribal dominated areas in the country are, nonetheless, among the poorest and severely food insecure areas. They are characterised by degraded natural resources, stark poverty, chronic hunger, high indebtedness and heavy out-migration. For the sustainable development of some of these regions, Tribal Development Programmes are being implemented in the States of Chhattisgarh, Jharkhand and Orissa. These were launched by the State government with the objective of ensuring household food security and improving livelihood opportunities based on the sustainable and equitable development of natural resources. The programme is supported by the International Fund for Agricultural Development (IFAD) and the World Food Programme. The latter provides food assistance for a Food For Work (FFW) component.

Given the abysmal poverty in the area, it is no surprise that the FFW activity has become enormously popular. Payment for FFW includes a cash component, 2.5 kg of grains and 200 grams of pulses. The programme, based on the performance of manual labour, is self-targeting towards the poor. It provides 70 days of work in the lean season when food insecurity is high.

Participatory Processes and Community Ownership

The point of departure in this programme, compared to other government programmes is the philosophy that the poor should be enabled to overcome their own poverty. This principle is woven intrinsically into all processes. To this end the project stresses participation of the poor, community ownership and capacity building. Food is given to the community and they take decisions. Inclusion of the most marginalised begins with the planning. All activities are discussed in the gram sabha. The project facilitates them in prioritising, planning and implementing the plans. Valuable lessons in collective decision making, negotiating, handling conflicts and targeting are being learnt.

The most marginalised are for the first time in their lives finding a platform for articulating their views. It is for this reason, that most community assets created under the programme are strategically located so as to benefit poor hamlets and households and there is a significant impact on the food security of a desperately poor population living in remote and inaccessible areas.

Food for Work Activities

Tribal communities share a symbiotic relationship with forests that are a major source of food, nutrition and livelihoods. Empowering the community to engage in forestry related activities that include plantation, rehabilitation of degraded forests, harvesting of Non Timber Forest Produce (NTFP) and other activities like stem dressing, weeding, fire-management measures, and forest road repair has led to increase in yields of NTFP and enhanced food availability.

The list of activities taken up under FFW is very long and *inter alia* includes land development, earth bunding, stone bunding, gully plugging, pond construction and restoration, backyard plantations, plant nurseries, digging wells and building canals, trenches and check dams. These activities have helped to irrigate large areas. For the first time people have been able to get a second crop of wheat apart from the single rain fed crop of rice that they used to harvest earlier. Many farmers have cultivated vegetables for the first time in generations. '*Neither our fathers nor our grandfathers ever cultivated these crops*' they say with obvious pride.

In some villages, as for instance in Semra in Chhattisgarh, under the food for work programme, villagers have almost literally moved mountains. They dug a well that has been lined with massive boulders they hauled from nearby hills. Apart from providing work and food for a large number of the poorest, it has helped ease the problem of drinking water for them and their livestock.

Enhanced Production and Productivity

There has been a big boost in production in many villages. In village Sagasai, in Jharkhand, as a result of new sources of irrigation and water harvesting, paddy production through transplantation has become possible. This has doubled yields, enhanced incomes and ensured food security.

Demand driven approaches that give play to people's initiatives throw up as many diverse ways of doing an activity as the activities themselves. They draw on people's intuitive knowledge of local conditions, their creative urges and their innate skills in a way, no top-down programme can. In village Ghangari, in Chhattisgarh, bunding was taken up around fields of the poor. In addition, they had the innovative idea of planting *arhar* (a pulse rich in protein) on the bunding. This not only utilised the land which would otherwise have gone waste, but the roots of the plant also strengthened the bunding which would otherwise have got washed off in the rains, because the field was situated on a slope.

Impact on Migration and Indebtedness

Ask anyone what has been the impact of the food for work programme, and the first answer would be 'people do not go hungry anymore'; the second will certainly be, 'people have stopped migrating for work'. Migration has stopped almost totally, particularly distress migration to far off areas. In Ranchi, the capital city of Jharkhand it is tragic, if common, to see hordes of adolescent tribal girls standing by the main square, waiting for labour contractors who entice them with promises of employment. In project areas migration of adolescent girls from the Ho tribe used to be a common phenomenon. This has almost stopped now. The impact has not been even across the project areas, but there is little doubt that it is one of the most important positive outcomes of the programme.

The other significant impact has been on indebtedness. In fact, the main 'casualty' of the project has been the moneylender. Self help groups have mushroomed in the project areas and as their lending operations expand, the business of the moneylender has been shrinking.

Strengthening of Local Institutions

The most intangible, but the most critical impact of the food for work programme, and one that holds the promise of sustainability, has been the strengthening of people's grass-roots level institutions; particularly the Gram Sabha and SHGs.

The lessons learnt by the village community in decision making, handling, distributing and monitoring the food for work activity has had visible positive spin-offs on other programmes. The impact on improved functioning of the ICDS and schools, for example, is in evidence in several villages.

Women's SHGs have become vibrant vehicles of change. They are empowering women in many remarkable ways. For one, they are helping women to become financially sound through income-generating activities. The enhanced availability of water has enabled them to take up diverse income-generating activities. Some women have taken up vegetable cultivation; others are engaged in aquaculture. At the same time SHGs have helped women develop confidence to challenge regressive social norms and attitudes.

The projects are being implemented in the most poverty stricken belt of India. Wherever there is poverty, there is alienation and strife and the project areas have been the site of frequent violence. In all this the food for work programme has proved invaluable in building trust and confidence and has taken care of the primary need of people — food with dignity. In the words of a young labourer, it is a *vardan* or a "gift of God".

Source: WFP, 2007, India Country Office, New Delhi

benchmark levels of production by the end of the Eleventh Five Year Plan period (See Box 6.5). A *National Food Security Mission* (FSM) with an outlay of Rs 4,882.50 crore during the Eleventh Five Year Plan period has since been set up to operationalize this resolution of NDC. The scheme is to be implemented in a mission mode through a farmer-centric approach, with active involvement of all stakeholders. It envisages close monitoring to ensure that the targets are reached. Under the National FSM, State and district level FSMs are to be set up as autonomous bodies, and the executive committees of these bodies will actively participate in and monitor the implementation of the Mission. The Mission will target, in the case of rice, districts with more than 50,000 ha area under rice and a productivity level below the State average. For the wheat, the criteria are sizeable area under wheat, a high proportion of irrigated area and productivity below the National/State average. The *Rashtriya Krishi Vikas Yojana* (RKVY) with an allocation of Rs 25,000 crore for the Eleventh Five Year Plan (2007 – 2012) aims at achieving the 4 per cent annual growth in the agriculture sector during the period by ensuring a holistic development of agriculture and allied sectors. Supported by 100 per cent Central grant, it emphasises attention to local needs and priorities and has scope for innovative proposals. The *National Rainfed Area Authority* is expected to bring convergence among the many different watershed schemes in operation for better results. The gap between potential and yield is a crucial area to be addressed. Under *Bharat Nirman*, 10 million hectares of additional irrigation capacity is also to be created by 2009.

Provision for storage at the village level is another felt need. The Gramin Bhandaran Yojana provided for this but this has not been effectively harnessed.

The *National Rural Health Mission* (2005 – 12) seeks to provide effective healthcare to rural population throughout the country with special focus on 18 States, which have weak public health indicators and/or weak infrastructure. The *Rajiv Gandhi Drinking Water Mission* with an investment of Rs 76,000 crore already aims to ensure coverage of all rural habitations especially to reach the 'unreached' and facilitate access to safe drinking water, ensure sustainability of the systems and sources and tackle the water quality problems in affected habitations. The goal under *Bharat Nirman* is to ensure that every habitation has a safe source of drinking water by 2009. Two points have to be emphasised. The first is that agricultural productivity, safe drinking water, better rural transport and storage infrastructure all have potentially positive implications for food and nutrition security, as they impact on the availability and absorption components of food security. The second is that they must be synergised by appropriate interdepartmental coordination and linked with programmes such as the National Rural Employment Guarantee Scheme (NREGS) that improve the access component of food security.

Indeed, perhaps the potentially most important intervention has been the passing of the National Rural Employment Guarantee Act (NREGA)[61] in September 2005. Initially 200 districts were notified in February 2006 under the Act. Another 130 districts were notified in the Union Budget of 2007 – 08, but the financial allocation was meager in relation to the 65 per cent increase in the number of districts that had to be covered (from 200 to 330 districts). However, the government has decided to extend the scheme to the rural areas of all the districts in the country from April 1, 2008 (GoI, 2007h). According to the website of the Ministry of Rural Development of the Government of India,

[61] See Appendix 2

Box 6.4 Horticulture Promotion and Nutrition Security

In India micronutrient deficiencies are widely prevalent. Anaemia due to iron and folate deficiencies affect majority of the population irrespective of socio-economic status. Biochemical evidence of vitamin A deficiency is widespread in the country though clinical signs are relatively rare. These are mainly due to the low consumption of fruits and vegetables by Indians.

India ranks first and second, respectively, in the global production of vegetables and fruits. Intake of vegetables, however, is very low, not even a third of the requirement. Consumption of adequate quantities of vegetables, especially green leafy ones, is essential for meeting the dietary requirement of vital micronutrients. Besides, vegetables also provide several phytochemicals and fibre essential for good health. Over the last three decades there has not been a substantial increase in the per capita fruit and vegetable consumption in the population. This is, perhaps, partly due to the fact that the importance of fruits and vegetables in meeting the micronutrient and phytonutrient requirements are not understood by the population and partly because vegetables and fruits are not available at affordable cost through out the year. Many greens are not widely consumed because they are not tasty. It is, therefore, imperative that nutrition education on the importance of vegetables for nutrition security gets the attention it deserves and all media of communication needs to be employed in this endeavour. Introduction of vegetables in MDMS and ICDS programme and focused nutrition education using these supplementary feeding programmes on how to use low-cost highly nutritious vegetables in traditional dishes may help in improving vegetable content in home diets.

Simultaneously, there is a need to ensure that there is an increase in production of inexpensive locally relished vegetables in different regions of the country. It is also imperative to assure the farmers that what is good for human health is also good for their livelihood. Vast areas of India have tropical and agro-climatic conditions, which are well suited for cultivation of horticulture and plantation crops. Horticulture is an ideal crop for marginal and degraded lands. Besides, providing nutritional and livelihood security and helping poverty alleviation and employment generation, this sub-sector can sustain a large number of agro-industries, which can generate huge additional non-farming employment opportunities in terms of food processing. Horticultural products provide higher yield per hectare and the sale price is also higher.

These factors have led to greater area being brought under horticulture and consequent increase in production of fruits and vegetables. The horticulture sector contributes about 28 per cent towards agriculture GDP from only about 13.7 per cent of the cultivated area. However the focus is not on cultivation and marketing of low-cost, locally acceptable green leafy vegetables, yellow vegetables and fruits. As a result, these vegetables are not available at affordable cost throughout the year. Health and nutrition education emphasizing the importance of consuming these inexpensive but rich sources of micronutrients will not result in any change in food habits unless the horticultural resources in the country are harnessed and managed effectively to meet the growing needs of the people and provide fruits and vegetables at an affordable cost. Technology for the processing of waste, e.g. cauliflower leaves and radish leaves rich in micronutrients, have been available but

have not been scaled up. Adequate storage facilities and linkages between producers and markets similar to what has been done in operation flood has to be replicated for the low-cost nutritious vegetables in order to bring about improved access to nutritious vegetables at affordable cost through out the year.

Losses of vegetables and fruits during packaging and transport are estimated to be about 30 per cent and when coupled with poor offtake, it can spell major economic disaster for the farmers. It is therefore imperative that creation of essential infrastructure for preservation, cold storage, refrigerated transportation, rapid transit, grading, processing, packaging and quality control get the necessary investment to enable the horticultural sector to achieve its full economic potential.

Source: Note from Dr. Prema Ramachandran, Director, Nutrition Foundation of India, New Delhi and Former Advisor, Planning Commission, Government of India

Box 6.5 Promotion of Pulses for Nutrition Security

Pulses are a major source of not only good-quality proteins but also many micronutrients in the diets of the poorer segments of population. Over the last three decades there has been a fall in pulse consumption in all income groups though expenditure on pulses has remained unaltered or has even increased. This is due to a tremendous increase in the cost of pulses over this period since the pulse production has not increased. In the post-Green Revolution period, the per capita availability of pulses has declined sharply in the country, as growth in pulse production did not keep pace with the population growth. The country has experienced progressive decline in per capita availability of pulses from 69 gram in 1961 to 32 gram in 2005. Because of the shortfall in national production, the country has been importing pulses.

It is estimated that to meet the needs of the growing population the requirement in pulses will go up to 21.3 million tonnes by 2012. To make the nation pulse sufficient there is a need to increase the area under pulse cultivation and improve productivity. The National Food Security Mission hopes to bridge the gap between pulse production and demand. A proactive strategy from researchers, planners, policy makers, extension workers, market forces and farmers aiming not only at boosting the per unit productivity of land but also at reduction in the production costs is needed to improve availability and affordability of pulses. Lack of assured market is one factor responsible for the stagnation in pulse production. Appropriate market intervention and promotion of post-harvest technology are also necessary to encourage farmers to invest more in the production of pulses. Distribution of pulses through PDS may improve access to pulses and help in stabilisation of the cost of pulses, so that the poorer segments of population benefit.

Source: Note from Dr. Prema Ramachandran, Director, Nutrition Foundation of India and Former Advisor, Planning Commission, Government of India

> The Act was able to provide employment to 2.10 crore rural households, in the first phase districts, during 2006 – 2007, creating 90.50 crore person days, on which more than 60% share was of ST and SC groups and 40% of women. With due focus on creating durable assets, 8.00 lakh works were taken up, of which 54% pertained to water conservation and water harvesting. There is also increasing evidence of stemming distress migration and improving land productivity. An amendment to the schedule of the Act now permits works pertaining to land development, horticulture, plantation, minor irrigation on the land holdings of not just SC/ST families but also all BPL families, thereby directly linking wage employment with agricultural productivity (ibid.).

The Union Budget for 2008 – 09 formalised the expansion of NREGS to all the 596 districts of the country. If backed by sufficient resource allocation, this is certainly a promising development. Properly implemented, the scheme could make a significant impact on food and nutrition security of the rural poor.

6.3 A Few Larger Issues

Our entire analysis and recommendations have to be viewed in the larger global context of issues relating to climate change and its impact on food security as well as the trend of global food price rise, the debate on production for food versus fuel and the consequent impact on food security which is already being felt by the most vulnerable and food insecure across the world[62].

6.3.1 Climate change and food security

It is now widely accepted that climate change is a reality and that it would have important consequences for food security. The International Panel on Climate Change (IPCC) has warned us that warming is likely to be above the global average throughout sub-Saharan Africa, eastern Asia and South Asia. In many water-scarce regions, climate change is expected to further reduce water availability (UNDP, 2008). The FAO has noted that "Significant changes in climatic conditions will affect food security through their impacts on all components of global, national and local food systems".

According to the second report of the IPCC, coastal areas, especially the densely populated delta regions in South, East and Southeast Asia, will face high risks from floods, both riverine and coastal. Similarly, glacier melt in the Himalayas is projected to increase flooding and affect water supplies in the coming decades. This will be followed by decreased river flows as the glaciers recede. Further, freshwater availability in Central, South and Southeast Asia would decrease. This could affect more than half a billion people by the 2050s (Khor, 2007).

The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) states, in its executive summary:

> In mid- to high latitude regions moderate local increases in temperature can have small beneficial impacts on crop yields; in low-latitude regions, such moderate temperature increases are likely to have negative yield effects. Some negative impacts are already visible in many parts of the world;

[62] The theme for the World Food Day 2008 was "World Food Security: The Challenges of Climate change and Bioenergy".

> …additional warming will have increasingly negative impacts in all regions. Water scarcity and the timing of water availability will increasingly constrain production. Climate change will require a new look at water storage to cope with the impacts of more and extreme precipitation, higher intra- and inter-seasonal variations, and increased rates of evapotranspiration in all types of ecosystems. Extreme climate events (floods and droughts) are increasing and expected to amplify in frequency and severity and there are likely to be significant consequences in all regions for food and forestry production and food insecurity. There is a serious potential for future conflicts over habitable land and natural resources such as freshwater. Climate change is affecting the distribution of plants, invasive species, pests and disease vectors and the geographic range and incidence of many human, animal and plant diseases is likely to increase (IAASTD, 2008a).

Climate change modeling exercises 'indicate that global warming shortens growing seasons in the Tropics and lengthens growing seasons at high latitudes' (Darwin, 2001). Other things remaining the same, this could 'reduce agricultural output in equatorial regions where many developing countries are located' (ibid.).

The Indian policy makers have recognised the process of climate change and its implications while drafting the Eleventh Five Year Plan which is to run from 2007 – 08 to 2011 – 12. The Eleventh Five Year Plan has noted:

The impact projections for India indicate a rise of 0.68°C in the twentieth century with an increasing trend in the annual mean temperature. Precipitation is likely to increase and extreme rainfall and other climatic events may occur more frequently. Extreme rains in the South West monsoon and fewer rainy days along the East Coast have been projected. An increase in temperatures of 0.5°C to 1.5°C could produce a decline of between 2.5% in wheat and maize production in India (GoI, 2008a).

It also notes:

> Climate change would therefore result in lower incomes of the vulnerable populations and increase in the absolute number of people at risk of hunger unless these outcomes can be countered through the development of cost effective technologies (ibid.).

By way of action, a Council on Climate Change was constituted under the chairmanship of the Prime Minister in June 2007 to coordinate national action for assessment, adaptation, and mitigation of climate change. A national action plan detailing the actions taken and proposed to be taken by India in relation to climate change has been prepared. The National Action Plan on Climate Change (NAPCC) stresses both adaptation and mitigation, and emphasises the importance of sustainable agriculture and food security. Several missions (Solar Mission, Mission for Enhanced Energy Efficiency, Mission on Sustainable Habitat, Water Mission, Mission for Sustaining the Himalayan Ecosystem, Mission for a Green India, Mission for Sustainable Agriculture, Mission on Strategic Knowledge for Climate Change) have been formed under the NAPCC to work on preparedness and adaptation measures needed in the face of the challenges posed by this environmental factor. The risks posed by climate change in respect of food security only serve to emphasise the need for the government to play a proactive role and to step up public investment in agriculture and rural development, besides taking measures to ensure

both remunerative prices for farmers and affordable access to food grains for the poor. The conclusions of the FAO High Level Conference of June 2008 also remind us that sustainable efforts to increase food availability should focus on strengthening small farmers.

6.3.2 The challenge of global food price rise

Global food prices have been rising rapidly since 2006. FAO's Food Price Index increased by 8 per cent in 2006 compared to 2005 and by 24 per cent in 2007 over 2006. Between the first three months of 2007 and those of 2008, the FAO food price index rose by 53 per cent. Between January – April 2007 and January – April 2008, the FAO cereal price index rose by 83 per cent. Over the same period, the index for wheat rose by 126 per cent and that for rice by 81 per cent, while the index for coarse cereals registered a rise of 37 per cent. It has been noted by the FAO that this food inflation has pushed an additional 75 million into a state of hunger, bringing the estimated number of undernourished people worldwide to 923 million in 2007 (FAO, 2008a; 2008b; 2008c).

Several factors underlie this sharp rise in food prices in the recent past. On the supply side, there has been a fairly long period of stagnation in productivity in cereals, arising in part from a decline in investment in agriculture in many countries under structural adjustment conditionalities and neoliberal policies which dictated a considerable reduction in the proactive developmentalist role of the State. Between 1960 and 1970, global grain yields grew by 2.6 per cent per year on the average. From 1990 to 2007, average annual yields rose by only 1.2 per cent (Jomo, 2008). This has led to a rather slow growth of global cereals production in recent years as compared to earlier decades. With global grain consumption rising faster than production, there has been substantial decline in stocks. The sharp rise in fuel prices has led to sizeable increase in costs of production. Further, the diversion of corn and vegetable oils to biofuel uses and the accompanying diversion of cultivatable area to biofuel crops constitute an important factor in the rise of food prices. A key message of the recently released FAO Report on State of Food and Agriculture, which focuses on biofuels, highlights their role in fuelling the food price rise. It states, "Rapidly growing demand for biofuel feedstocks has contributed to higher food prices, threatening the food security of poor net food buyers in both urban and rural areas". There is also the fact of rising demand for grain resulting from increasing consumption of both grain and meat by sections of the population in countries experiencing rapid economic growth. Climatic changes and more frequent occurrence of extreme weather conditions have played a part in increasing the instability of supply. Finally, there is the role of speculation in commodity futures, especially heightened by the migration of speculators from financial markets in incipient crisis, in pushing up food prices (Ghosh, 2008; FAO, 2008a).

Whatever may be the specific roles played by each of the above factors, the rise in food prices poses a new challenge for policy makers in developing countries. The rise in food prices has already led to both great suffering for the urban and rural poor in many countries as well as considerable social unrest. As already noted, around 75 million have joined the ranks of the 'food insecure' across the developing world. The poor households face increased food insecurity and nutrition deficits. They have to compromise on health, education and other non-food expenditures so as to achieve even survival levels of food intake (FAO, 2008a).

Indian policy makers have taken several measures to curb the rise in food prices. These include restrictions on exports and on futures trade in grains as well as efforts taken to improve agricultural productivity by renewed public

investment in agriculture. It needs to be recognised that these policies need to be carried forward, and designed with great care. Most important, the proactive role of the State which played a critical role in the success of the Green Revolution between the mid 1960s and the mid 1990s needs to be reasserted, as against the more fashionable and facile view prevalent in recent times that trade and economic liberalization are the tools for achieving food security. As the background paper of the High Level Conference on Food Security organized by the FAO in Rome in June 2008 noted:

> Global attention is also now focused on the plight of the poor and hungry. At the national level, governments, supported by their international partners, must now undertake the necessary public investment and provide a suitable environment for private investments, while at the same time ensuring that the most vulnerable are protected from hunger. They must initiate actions to ensure accelerated progress towards the permanent eradication of chronic hunger and malnutrition in the world, making this a fundamental element of their development policies and poverty reduction strategies. For as long as a large number of people remain hungry, the threat of a repetition of the current crisis will remain (FAO, 2008a).

6.4 Recommendations – Towards Food and Nutrition Security for All

On the basis of the analysis in the preceding pages, and consultations on food security held with professionals, activists and policy makers, we propose the following priorities:

1. Availability of foodgrain in adequate quantities needs to be ensured, now and in the future. Keeping in mind the need to ensure livelihoods in rural areas, the strategy for increasing availability must place emphasis on increasing small-farmer production and productivity. For this purpose, we need to step-up public investment in irrigation and rural infrastructure and provide other forms of State support including credit and post-harvest storage facilities such as rural warehouses. Such public investment should also strive to address the issue of regional inequalities. With respect to irrigation, there should be a special focus on revitalisation of existing local water storage systems and water bodies and on decentralised community controlled systems of water use. The NREGS and similar schemes could be utilised for this purpose. All these steps will simultaneously help address availability and access.

2. With a view to ensuring assured and remunerative price for produce, the government must expand the Minimum Support Price (MSP) system, based on the cost of production including a reasonable rate of return on investment and ensuring prompt and open-ended purchase for all major crops including foodgrains other than paddy and wheat. This will serve as an incentive to increase availability and improve access by enhancing the purchasing power of farmers.

3. The economic policies should be reoriented to provide adequate support for India's agriculture and its vast rural population. In particular, policies must provide adequate rural infrastructure (including power), and promote employment besides ensuring credit facilities and remunerative prices for produce for our farmers. The unfinished agenda of land reforms must be completed and distribution of ceiling surplus land must be done on a priority basis. Appropriate attention should be paid to conservation of common property and biodiversity resources and rehabilitation of wastelands. These steps will address availability, access and sustainability concerns.

4. There should be substantial increase in public investment in agriculture-related infrastructure such as irrigation and drainage, land development, water conservation, development of road connectivity etc.[63]. Such investments are specially needed in the poorer and low rainfall areas of the country.

5. The analysis of the PDS and its functioning, has built a well-argued case for replacement of the TPDS by a universal PDS with uniform prices affordable to the poor[64]. The centralisation that took place under the TPDS should be reversed and State governments should, in the first instance, have the right to determine the required allocation under PDS for their State.

6. Further, the allocation per household in the PDS should be based on the number of consumption units in the household. Besides rice and wheat, other relevant and nutritious food grains and pulses may be distributed through PDS at subsidised rates, in order to enhance nutritional outcomes. Further, in order to improve viability of Fair Price Shops (FPS), and simultaneously enhance the purchasing power of the incomes of the poor, commodities like edible oil, cloth and other daily use items may be sold in the FPS[65] (See Box 6.6). Ration shops should be strengthened and made viable through the provision of appropriate margins or subsidies. To ensure effective utilisation of the PDS, the public must be free to draw their allocations on a weekly basis. Migrants should be able to access PDS allocations in the area where they work.

7. Panchayati Raj Institutions (PRIs) may also be actively involved in the monitoring of the PDS. These PRIs should be empowered, trained and facilitated in monitoring hunger, and malnutrition as well as the schemes implemented to reduce hunger/malnutrition such as PDS, MDMS, ICDS and FFW programme. This will help strengthen the delivery mechanisms.

8. While a universal PDS, appropriate supplementary programmes and other safety nets funded by the government are critical to ensuring food security, there is also an important role for community-based food security systems, such as community grain banks (See Box 6.7). Community food security systems appear especially relevant in socially cohesive communities characterised by limited inequality and found in locations, where they find it difficult to access other delivery mechanisms such as PDS. Community food security systems may also be encouraged so that production of nutritious millets and other local foodgrains receive much needed support. To ensure sustainability, such initiatives must work closely with elected local bodies.

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[63] The FAO Director General's message on the occasion of World Food Day 2008 also emphasised this point in the global context – '…During the last three years, due to the soaring food and energy prices, the number of hungry people has increased by another 75 million at the end of 2007. This crisis is due to decreasing investments in agriculture in the poorest countries in the last 30 years. The share of agriculture in public development has declined from 17 per cent in 1980 to 3 per cent in 2006. We need to reverse this trend to come back to the previous level of investment. …….Agriculture has to be able to double global food production by 2050, when the current population of the globe now at 6 billion will reach 9 billion. …'

[64] Government of Tamil Nadu has started sale of rice at Re 1/kg from PDS outlets since 15 Sept 2008.

[65] Tamil Nadu has started selling packets of 10 spices priced at Rs 50 each through FPSs from 2 Oct 2008

Box 6.6 Experience of PPP model in PDS in Gujarat

PDS reform for improving the accessibility and viability of FPS under PDS was initiated in Gujarat in mid-2006. The attempt was to make them operate as a business model for selling a wider variety of goods/commodities and not just as a ration shop. This has covered more than 6,000 shops out of a total chain of 15,000 making it by far the biggest retail chain. An impact study has reportedly shown trebling of income levels in medium towns and doubling of incomes in remote villages.

Government of Gujarat initiated a policy for de-licensing and decontrolling the FPS in the State to spur the rural economy. The model, drawing its basis from Public Private Partnership (PPP) Model has been found to be economically sustainable and has financially equipped all the stakeholders with a win – win situation for all – customers, shop owners and even the Government agencies. The different stakeholders in the revamping of PDS have their own potential and perceived gains and have started to derive benefits as highlighted hereunder:

A. Government

- Enhanced outreach with deep penetration in remote areas.
- Improved effectiveness of the programme by enhanced outreach to the target section.
- Being proactive to face the onslaught of globalisation and offsetting its impending dangers of open market mechanism for small producers.
- Role of DSOs in information dissemination, putting-in-place centralised purchasing system, tie-up with manufacturing companies and ensuring visibility, accessibility and transparency of these retail units.

B. Model Fair Price Shops (MFPS)

- Increase in income/social status/new motivation and increased operations for full sustainability.
- Better growth opportunities.
- Equipping shopkeepers to face impending competition with entry of MNCs in rural market.

C. Credit Institutions like Banks

- Opportunity to tap burgeoning and largely untapped rural markets.
- Increase in rural sector lending for productive purposes whereby repayment becomes more assured, minimising chances of defaults; also making them plan for future financial products for microfinance needs.

D. Manufacturing Companies

- Vibrant platform to penetrate into rural markets.
- Able to generate and earn the goodwill of consumers before the entry of MNCs and therefore better equipped to compete.

E. PIAs/ Panchayats

- Given the extent of outreach, Panchayat-based decentralised system is needed for effective implementation to review food availability and delivery.

- Panchayats can identify local youth/owners with potential for playing diversified roles – by turning into stockists, distributors and also play a role in centralised purchasing system.

Besides these gains, the initiative can spur economic development by generating increased employment opportunities in MFPS and facilitate emergence of local leadership.

The broad areas where there is scope for exploring expansion of existing PPP model can be

- Developing and revamping of PDS through integration with community-based organisations like SHGs. The long chain of PDS can be utilised for selling the locally made handicrafts and locally produced agri-products like Tal and Mahuva after value addition.
- Bringing in efficiency in distribution channels to effectively reduce the cost of foodgrain supply to PDS owners.
- Enhancing supply chain efficiency.
- Availability of other essential items like medicines at PDS backed by corporate support (under CSR initiatives).
- Training of FPS owners to improve their personal and business effectiveness skills by involving educational institutions.
- Marketing of value added and processed products of horticulture, medicinal and aromatic plants.

Source: Note from Dr. S K Nanda, Former Principal Secretary, Food and Civil Supplies, Govt. of Gujarat. Based on a study by Sanguine Management system sponsored by Food &Civil Supplies Department in 2007 and again in 2008.

9. The overall approach of the food delivery system should be lifecycle based and involve appropriate supplementation programmes to ensure that all stages of the lifecycle are addressed. Horizontal integration of vertically structured programmes is urgently called for.

10. While food and nutrition insecurity needs to be addressed at all stages of the lifecycle, certain groups such as pregnant and lactating mothers, adolescents and children under three years of age need to be given special attention because of their physiological needs. The MDMS and ICDS are crucial programmes in this regard and their effective implementation can contribute to the better health and food security of the population.

11. Food and nutrition security needs to be addressed through integrated complementary strategies, namely dietary diversification, supplementation, food fortification and community and public health measures.

12. Substantial investments need to be made in health and education especially for the rural population. Improvement in basic infrastructure like ensuring access to safe drinking water, toilets and healthcare facilities will have a positive impact on health and nutrition of the population, a fact highlighted by the States with better facilities. Education will lead to greater awareness and understanding on practices to be adopted, which is highlighted by the experience of States like Kerala.

13. Changes in macroeconomic policies so as to enhance aggregate demand will enhance the prospects of the growth of rural employment. Quality employment has to be promoted. This requires enhancing the skill levels of the

labour force on a large-scale through massive training and capacity-building programmes both by the government and by the private sector. In this context, the expansion of the NREGA to the whole country is a step in the right direction. The National Commission on Farmers has in fact called for moving forward from this towards a Food Guarantee Act.

The *National Commission on Farmers* in its comprehensive report to the Government of India, has put forward a number of suggestions on how to ensure food and nutrition security for all[66]. These suggestions lend strength to the recommendations emanating from our findings. The NCF Report makes the point that, "In a country with a high prevalence of poverty and malnutrition, the Government of India should always retain a commanding position in the management of the food security system" (GoI, 2006c). It says further that, "Food security with homegrown foodgrains can alone eradicate widespread rural poverty and malnutrition, since farming is the backbone of the livelihood security system in rural India. **This will enable Government to remain at the commanding height of the national food security system.** Building a food security system and containing price rise with imported foodgrains may sometimes be a short-term necessity, but will be a long-term disaster to our farmers and farming"[67]. The NCF makes the important point that, "**Building a sustainable food security system will require attention to both the availability of sufficient stocks and who controls them**"[68].

As we have pointed out earlier, the food security situation in India is a matter for concern. It is hoped that all the recent steps taken including NREGA will help to reverse the current unacceptable situation. A strategy to ensure food and nutrition security for all has to pay concurrent attention to food availability, access and absorption. The observations of the NCF are of great relevance in this context (See Box 6.8).

These have to be complemented by the measures of universalisation of ICDS with quality and equity, with special attention paid to infant and young child feeding practices; extension of employment guarantee to urban areas and enhancement of minimum number of days of guaranteed employment; adequate investment in health, drinking water and sanitation to improve absorption and biological utilisation of food; and giving both MDMS and ICDS the status of legal entitlements of the relevant target population. There should be a massive campaign for sanitation literacy and mainstreaming sanitation in all relevant national programmes like National Rural Health Mission, National Horticulture Mission, National Rural Employment Guarantee Programme with appropriately adequate allocations. Such a set of actions will put the country on track towards achieving the goal of food security for all.

Accompanying all this has to be an effort to see that the mismatch between outlay and output is minimized by improving delivery, plugging leakages, increasing accountability and bringing in greater professionalism at all levels, to get maximum benefit. Agriculture is a State subject in India and issues of governance and delivery at the State level need to be addressed seriously. The importance of this factor is brought out clearly by the State of Kerala which is found to be ahead of all the States in terms of food security, even though it depends a good deal on foodgrain imports from the rest of the country.

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[66] see www.kisanayog.gov.in

[67] Ibid. p.246; Emphasis in original

[68] Ibid, p.60; Emphasis in original

Box 6.7 Community Food Security Systems

Triggered as an immediate response to the prevailing ground level situation, several decentralised initiatives have proved to be effective at the microlevel in mobilising the community and building their capacity to effectively devise mechanisms for food and livelihood security. Community Foodgrain Banks, constitute one such initiative. There is a sizeable literature on CFB experiences of government and NGOs in India. Government efforts in promoting CFBs have been largely in partnership with local NGOs, since a very high level of community mobilisation is necessary. Initiatives spearheaded by NGOs reflect a range of approaches. A few examples are highlighted below:

- In Gujarat, the Self-Employed Women's Association (SEWA) has worked in several villages, especially in the rain fed areas, on agricultural improvements through self-help groups. Women organised into cooperatives undertake collective farming and afforestation. They raise nurseries for improved saplings, as well as high quality seeds, for sale through the SEWA *Gramin Mahila Haat*. They have also facilitated the setting up of community-managed grain banks, based on the principle of 'local procurement and local employment'. A nominal membership fee is charged by way of grain contribution. Excess requirement of grain is met by purchase from the local market at wholesale prices. An active member of the grain bank is linked with livelihood generation activities of SEWA.

- Gramin Vikas Trust (GVT) under a DFID (Department of Funding for International Development, UK) sponsored programme has undertaken extensive watershed development in the States of Gujarat, Rajasthan and Madhya Pradesh, and promoted foodgrain banks in the watershed villages through self-help groups (SHGs).

- Seva Mandir in Udaipur district of Rajasthan State has been working with the community for removal of encroachments from common lands through collective efforts, and subsequent protection and development of village commons. There is assured fodder and fuel security for the community, and a gradual build up of the *Gram Vikas Kosh* (Village Fund), administered by a representative village institution, which interfaces for linking with government's food support schemes.

- Deccan Development Society (DDS) in Medak District of Andhra Pradesh (AP) has demonstrated successful regeneration of dry lands through appropriate agriculture done by women's groups. There is emphasis on indigenous cropping and organic processes. Women's groups also manage foodgrain banks in several of these villages setting an example of an alternative PDS with locally consumed grain (sorghum) and not rice or wheat that is distributed under the government PDS.

- Centre for Environmental Concerns (CEC), also operating in AP, has facilitated SHG of women to bring fallow land taken on lease under sorghum cultivation and store the produce in a foodgrain bank for use by them later.

- The Academy of Development Science (ADS) has been setting up grain banks in Raigad and Thane Districts of Maharashtra. The initial corpus of grain is given as a loan to the community, to be repaid in four years. From the fifth year, the bank is expected to become self-sustaining and measures have to be put in place to ensure this.

- In Orissa, Agragamee, Antyodaya and Gram Vikas, to name a few NGOs, have nurtured self-help groups and built up a corpus of food grain through village contributions. Groups are linked with National Bank for Agriculture and Rural Development (NABARD), Integrated Tribal Development Agency (ITDA), Tribal Cooperative Marketing Development Federation of India Limited (TRIFED) and others, to access a matching grant and avail of other support including storage facilities. A rather unique and perhaps stand-alone example of a Grain Bank that has developed without any external support or facilitation is the Darfal Grain Bank in operation in Sholapur district of Maharashtra. The bank came into existence in the mid 1960s, at the initiative of people influenced by socialist thinking, to stop exploitation by moneylenders. The village has about 500 households of mixed communities. One has to contribute grain (*jowar*) to become a member shareholder. The accounts are audited, and the management committee elected once in three years decides the terms of lending, dealing with excess grain etc. The grain bank deals only in jowar and continues to find relevance and thrive even as there are three PDS outlets in operation in the village itself. Attempts at replication by neighbouring villages have, however, ended in failure.

- The M. S. Swaminathan Research Foundation (MSSRF) has been developing models of Gene-Seed-Grain-Water Bank continuum based on sustainable use of available resources for food and livelihood security. Starting with mobilising the village community around the CFB initiative to address the immediate problem of food scarcity, over time attention has moved to improving production and productivity of the land, microwatershed management, facilitating formation and capacity building of SHGs to undertake microenterprise activities (e.g. value-added products from rice, millet), development of village fund for common village development activities, to ensure sustainability of the mechanism, and address other issues pertaining to improving their quality of life. Awareness generation on government programmes for food security through Entitlement Cards listing out the various schemes, has led to instances of these programmes being accessed, e.g. old-age pension.

Apart from these, there are a range of efforts to improve agriculture, afforestation, watershed development, which are intended to lead to improved food and livelihood security. It is important to note however that such initiatives have limited outreach, given the constraints of capacity and resources. The grain bank scheme of the government unfortunately suffers from the weakness of not providing for storage facility for the foodgrain.

Box 6.8 Hunger Free India – Components of Action Plan

Reform of the Delivery System:

The overall approach should be life-cycle based and involve appropriate supplementation programmes. The delivery systems relating to all nutrition support programmes must be restructured on the basis of the life cycle starting with pregnant women and 0 – 2 infants and ending with old and infirm persons. Elected Panchayats and local bodies should be involved in restructuring the delivery system.

Policy must promote the establishment of Community Grain and Water Banks, involving Panchayats and other local bodies. This programme should be based on the principle 'store grain and water everywhere'.

Eradication of Hidden Hunger:

Hidden hunger caused by micronutrient deficiencies must be addressed based on natural food cum food fortification approaches. Food and nutrition security needs to be addressed through integrated complementary strategies, namely dietary diversification, supplementation, food fortification and community and public health measures.

New Deal for the Self-employed:

The menu of income-earning opportunities for the self-employed need to be enlarged. This calls for a paradigm shift from microfinance to livelihood finance. SHG Capacity Building and Mentoring Centres should be established.

Enhancing the Productivity and Profitability of Small Holdings:

Agriculture is the backbone of the livelihood security system for two-third of India's population and farmers constitute the largest proportion of consumers. The smaller the farm, the greater is the need for marketable surplus in order to get cash income. Hence, improving small farm productivity, as a single development strategy, can make the greatest contribution to the elimination of hunger and poverty.

Designing and introducing a Food Guarantee Act:

A National Food Guarantee Act, combining the features of the Food for Work and Employment Guarantee Programmes, will represent a win – win situation both for producers and consumers. Following up on the NREGA and recognising that the right to food and the right to livelihood are intimately related, we need to move towards a comprehensive 'Food Guarantee Act'.

Building a sustainable food security system will require attention to both the availability of sufficient stocks and who controls them. A National Food Security and Sovereignty Board with the Prime Minister as Chairperson can help to keep sustainable food security and sovereignty as a National Common Minimum Programme (in the same manner that UN MDGs represent a global common minimum programme for Human Security).

Extracted from "Making Hunger History", Chapter II, Fifth and Final Report, NCF, Vol. I, Oct. 2006

Finally, as the NCF puts it, "Economic growth which bypasses a large population is joyless growth and not sustainable in the long run. Equity considerations cannot be ignored for too long. Faster growth in agriculture with improvement in welfare of the rural population is important. The need is not only to register increase in agriculture production in million tonnes but actual improvement in rural incomes" [69].

All the measures suggested above can only be implemented if it is recognised that the State has a crucial role to play in enhancing foodgrain output, ensuring the widest access to food through expansion of livelihood opportunities and promoting biological utilisation through appropriate investments in public health measures.

Such recognition seems to be emerging[70]. The Eleventh Plan document notes that "Food security considerations remain an immediate priority', and speaks of a 'Central Food Security Mission as a Central sector scheme in mission-mode aimed at increasing foodgrains production by at least 20 million tonnes by the end of Eleventh Plan" [71].

The National Policy for Farmers states: "A well-defined food security policy with homegrown foodgrains is important for eradicating rural poverty and malnutrition. In order to strengthen and regularly monitor food security issues, the government would constitute a Cabinet Committee on Food Security" [72].

While the initiatives like the National Food Security Mission and Horticulture Mission will help address the food availability issue, extension of NREGS to all districts in the country, expansion of MDMS and reform of the PDS and ICDS will help ensure access. Appropriate investments in public health measures and nutrition education are needed to address the issue of absorption.

The recommendations and suggestions put forward and those made in other forums cited here have necessarily been broad in nature. Clearly, State-specific strategies would have to be worked out, taking into account the specific issues in each State. A decentralised approach involving elected local bodies, like Panchayats and Nagarpalikas, will help to address location specific issues, including those related to class, caste, gender and age more effectively. Involvement of local bodies in strengthening food security will also help in fostering community food and water security systems involving the organization of village level gene – seed – grain – water banks.

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[69] NCF Fifth and Final Report, GoI, 2007c, p.99.

[70] However, the Cabinet decision of February 2008 to limit allocations of wheat and rice for APL households at last year's level of offtake (8.5 MT) runs counter to the goal of food security.

[71] Eleventh Five year Plan, GoI, 2008a.

[72] National Policy for Farmers, accessed at www.agricoop.nic.in

APPENDIX

APPENDIX 1

Report of the Sub Group on ICDS and MDMS of the Working Group on Food and Nutrition Security for the Eleventh Plan (2007-2012) – ICDS

I. General Recommendations

I.1. Overarching Goal

1. **Universalisation with quality:** The core objective for ICDS in the 11th Plan should be "universalization with quality". This would involve: (1) ensuring that every hamlet has a functional Anganwadi; (2) ensuring that all children under six and all eligible women have access to all ICDS services and (3) enhancing the quality of ICDS services.

I.2. Coverage of ICDS

2. **Universal coverage**: Every household should have convenient access to an Anganwadi (or to a mini-Anganwadi, for the time being, in the case of tiny settlements).

3. **Improved norms**: The "population norms" used for the creation and placement of Anganwadi*s* should be revised, in line with the goal of universalisation with quality. The improved norms should ensure that every household has convenient access to an Anganwadi (or mini-Anganwadi, if applicable).

4. **Anganwadis on demand**: As a safeguard against possible failure to apply the "improved norms", rural communities and slum dwellers should be entitled to an "Anganwadi on demand" (within, say, three months) in cases where a settlement has at least 50 children under six but no Anganwadi. The list of settlements eligible for Anganwadi on demand could be gradually extended over a three-year period, starting with the most vulnerable communities (e.g. SC/ST hamlets and urban slums) and ending with "all settlements".

5. **Open enrolment:** Every child under six should be eligible for enrolment at the local Anganwadi. There should be no eligibility criteria other than age (and especially no restriction of ICDS to "BPL" families), and no ceiling on the number of children to be enrolled in a particular Anganwadi.

6. **Full services**: All ICDS services should be available to those (children under six, pregnant or nursing mothers, and adolescent girls) who wish to be enrolled at the local Anganwadi.

7. **Time-bound universalisation**: An explicit time frame for universalisation (based on the improved norms) should be clearly specified in the 11th Plan.

8. **Equity**: In the process of extending the coverage of ICDS, priority should be given to SC/ST hamlets and urban slums. For rural areas, this would involve conducting a survey of SC/ST-dominated habitations and ensuring that all new Anganwadis are placed in these habitations until such time as universalisation has been achieved for this group. Special provisions should also be made for other disadvantaged communities.

9. **Inclusion**: Special provisions should be made for the inclusion of marginalised children in ICDS, including differently abled children, street children and children of migrant families. For instance, migrant children should be entitled to admission at the nearest Anganwadi.

10. **Special focus on children under three:** A major effort should be made to extend ICDS services to all children under the age of three years, without affecting the entitlements of children in the 3 – 6 age group. In particular, this would involve posting a second Anganwadi worker in each Anganwadi (see 1.4.15). Her primary responsibility would be to take care of children under three as well as pregnant or nursing mothers. This new focus would also involve giving much greater attention to "infant and young child feeding", nutrition counselling, ante-natal care and related matters.

I.3. Infrastructure

11. **Independent buildings**: By the end of the 11th Plan, each Anganwadi centre (AWC) should have its own, independent pucca building. Construction grants should be made available for this purpose, and also for the maintenance of buildings. A specific proportion of ICDS funds could be earmarked for construction (e.g. 30%, as with Sarva Shiksha Abhiyan).

12. **Dovetailing with NREGA**: To facilitate large-scale construction of AWCs, "construction of AWCs" should be added to the list of permissible works under NREGA. Additional funds for the material component could be mobilised from Bharat Nirman, the Backward Regions Grant Fund and related sources.

13. **Minimum infrastructure**: Each AWC 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, toys etc.) should be drawn up.

14. **Untied grants**: Each AWC should receive an annual untied grant (similar to the various untied grants under Sarva Shiksha Abhiyan and the National Rural Health Mission), to facilitate local initiatives aimed at improving the AWC facilities and environment.

I.4. Staff

15. **Two-worker norm**: Each AWC should have at least *two* "Anganwadi workers" (AWWs), and an "Anganwadi helper" (AWH). The primary responsibility of the one Anganwadi worker should be to take care of children under three and pregnant or nursing mothers, in collaboration with the local Accredited Social Health Activist

(ASHA), if any. The responsibility of the other would be to conduct pre-school for children in the 3 – 6 years age group (including providing them with the mid-day meal).

16. **Concerns of Anganwadi workers**: AWWs should be recognised as regular, skilled workers and their concerns should be addressed, particularly those relating to work overload, inadequate remuneration, delayed salary payments and poor working conditions. Anganwadi workers should not be recruited for non-ICDS duties and their official job description should be adhered to.

17. **Integration with ASHA**: Specific arrangements should be put in place to facilitate smooth coordination between AWWs and ASHAs. Examples include joint training programmes for AWWs and ASHAs, joint participation in the monthly "health and nutrition day" (see 11.2.28) and joint home visits.

18. **Improved training**: The regularity and quality of AWW/AWH training programmes should be improved. Training programmes should include training for care of newborn babies and children under three, nutrition counselling, and pre-school education. Improved training is also required for supervisors, CDPOs and related staff. Joint trainings with ASHAs, ANMs and medical officers should be conducted to facilitate smooth coordination of ICDS with health services as well as supportive supervision.

19. **Gender issues**: Women should be better represented among supervisors, CDPOs and other ICDS staff above the Anganwadi level. Training programmes and reinforcement structures should be sensitive to women's concerns, and geared to the empowerment of Anganwadi workers.

20. **Staff recruitment:** Urgent action is needed to address the shortage of ICDS staff at all levels. Programme management structures should also be strengthened by inducting subject-matter specialists (e.g. for pre-school education, health and nutrition) at the district, state and central levels, especially women.

II. Service-Specific Recommendations

II.1. Nutrition- Related services

(i) SNP for children aged 3 – 6

21. **Cooked food:** For children aged 3 – 6 years, the supplementary nutrition programme (SNP) should consist of a nutritious cooked meal prepared at the Anganwadi, based on local foods and with some variation in the menu on different days of the week.

22. **Cost norms**: A provision of at least Rs 3 per child per day (at 2006 – 7 prices) and 80 grams of grain should be made for SNP in the 3 – 6 age group. This is similar to the norms being recommended for mid-day meals in primary schools. The cost norms should be adjusted for inflation every two years using a suitable price index.

(ii) SNP for children below three

23. **Take-home rations**: For children below the age of three years, nutritious and carefully designed take-home rations (THR) based on locally procured food, delivered every week, should be the recommended option. A provision of at least Rs 3 per child per day (at 2006 – 7 prices) and 80 of grain should be made for SNP.

24. **Nutrition counselling:** Supplementary nutrition should always be combined with extensive nutrition counselling, nutrition and health education (NHE), and homebased interventions for both growth and development, particularly for children under three. Special priority should be given to counselling and related services for "Infant and Young Child Feeding" (IYCF). In particular, IYCF counselling and support should be recognised as a 7th "service" under ICDS, with a clear budget head.

(iii) SNP for pregnant and nursing mothers

25. **Take-home rations**: Nutritious take-home rations should be provided to pregnant and nursing mothers every month, on "health and nutrition day" (see 11.2.28). Anganwadi workers should ensure that THRs also reach mothers who may have missed the "health and nutrition day".

(iv) Micronutrient supplementation

26. **Iron and Vitamin A:** For children under six, national programmes for the prevention of Iron and Vitamin A deficiency should be implemented through ICDS. Appropriate doses and formulations should be specified by the Auxiliary Nurse Midwife (ANM).

27. **Iodine**: Iodised salt should also be used in all Anganwadis.

II.2. Health-Related Services

28. **Monthly "health and nutrition day":** In each AWC, a pre-fixed day of the month should be reserved for specific activities such as distribution of take-home rations to pregnant and nursing mothers, immunisation sessions, NHE sessions, weighing of children under three, identification of severely malnourished children and so on. The "health and nutrition day" can also act as a meeting point for the Anganwadi worker, ASHA and ANM, and an entry point for the involvement of PRIs.

29. **Medicine kits**: Every AWC should have a medicine kit with basic drugs (including ORS and IFA tablets), to be distributed by the Anganwadi worker with appropriate training as well as guidance from the ANM (unless adequate provision has been made for the ASHA to provide this service). The procurement of medical kits should be decentralised (detailed guidelines should be prepared for this purpose). Medicine kits should be inspected and replenished at the time of the monthly "health and nutrition day".

30. **Severe malnutrition**: Rehabilitation facilities (e.g. Nutrition Rehabilitation Centres) should be available at the PHC level for children suffering from Grade 3 or 4 malnutrition as well as far their mothers. Anganwadi workers should be responsible for identifying such children and referring them to rehabilitation facilities. Financial provision should be made to support these children's families during the period of rehabilitation. Also, these children should be entitled to enhanced food rations under the Supplementary Nutrition Programme. ICDS and the Health Department should be jointly responsible for the prevention of severe malnutrition and hunger deaths.

31. **Special training**: Anganwadi workers should receive training in Integrated Management of Neonatal and Childhood Illnesses (IMNCI).

II.3. Pre-School Education

32. Right to Education Act: Entitlements to pre-school education facilities for children under six should be included under the Right to Education Act.

33. Sarva Shiksha Abhiyan: Pre-school education programmes, suitable for implementation through ICDS, should be developed under Sarva Shiksha Abhiyan. SSA funds should also be made available to strengthen existing PSE activities under ICDS, e.g. by arranging training programmes or supplying better equipment.

34. PSE facilities: Each AWC should have basic PSE facilities including adequate space for indoor and outdoor activities (with clean and hygienic surroundings), appropriate charts and toys etc.

35. Training and supervision: Pre-school education should receive higher priority in AWW training programmes, and also in the support activities of ICDS supervisors and CDPOs.

36. Location of AWCs: New AWC buildings should generally be situated on or near the premises of the local primary school, unless the latter is at some distance from the children's homes. When AWC and primary school are close to each other, they could share a common kitchen shed.

III. Future Recommendations

37. Outreach facilities: An "outreach model" should be developed under ICDS to extend essential services (including immunisation and nutritional support) to hitherto excluded groups (e.g. street children and migrant families) through designated outreach workers.

38. Right to information: All ICDS-related information should be in the public domain. The provisions of the Right to Information Act, including pro-active disclosure of essential information (Section 4), should be implemented in letter and spirit in the context of ICDS. All agreements with private contractors (if any) and NGOs should be pro-actively disclosed and made available in convenient form for public scrutiny. All AWCs should be sign-posted and the details of ICDS entitlements and services should be painted on the walls of each Anganwadi. Social audits of ICDS should be conducted at regular intervals in Gram Sabhas and/or on "health and nutrition day".

39. Record maintenance: The burden of record maintenance at the Anganwadi level should be reduced. As far as possible, record-keeping should be confined to registers that are mandatory under the ICDS Guidelines. The possibility of assigning some of the responsibility of record-keeping to persons other than the Anganwadi worker should be explored. This would also help to ensure some independence, objectivity and transparency in record-keeping.

40. Involvement of PRIs: Steps should be taken to promote more active involvement of PRIs in the management and monitoring of ICDS, bearing in mind that "women and child development" is listed in the Eleventh Schedule of the Constitution. In particular, PRIs should be actively involved in the monthly "health and nutrition day" at the AWC, and in the selection of ICDS functionaries. Resources should be made available for training and capacity building of PRIs, e.g. under the Backward Regions Grant Fund.

41. **Anganwadi divas**: As an extension of the "health and nutrition day", a pre-fixed day of each month could be reserved not only for health and nutrition related activities but also for various forms of community participation in ICDS, such as wall painting at the Anganwadi, renovation of the AWC, preparation of PSE aids, social audits of ICDS services and so on. This would help to foster public interest and involvement in ICDS.

42. **Bal Adhikar Patra**: Each child under six should have a "Bal Adhikar Patra", combining birth certificate with immunisation details, weight at various ages, AWC registration, health checkup and sickness records etc. Essential NHE messages could also be printed on this card. The card would be kept by the parents but the Gram Panchayat would be responsible for updating it regularly with the assistance of the Anganwadi worker as well as for maintaining a copy of the records at the Anganwadi and/or Panchayat Bhawan.

APPENDIX 2

National Rural Employment Guarantee Act (NREGA)

The Government of India passed the NREGA in 2005, in line with its commitment under the Common Minimum Programme (CMP). As per the Act, the Government has to provide 100 days of unskilled employment within a time frame to every household demanding employment for their adult (above 18 years) members. The primary objective of this Act is poverty alleviation by creating employment opportunities at the village level. The programme also has secondary objective of asset creation at the local level. According to NREGA, every person working under the scheme is eligible to get the minimum wage prescribed by the particular State government and payment is to be made by banks or post offices only. The Government also emphasised in an attempt, to curb leakages, that no contractors should undertake execution of the work under NREGA. The central government provides funds to States governments and the States implement the scheme (choosing worksite, activity, eligible persons) through Panchayat Raj Institutions (PRIs). The Act builds on our experience with earlier programmes like the *Sampoorna Grameen Rozgar Yojana* (SGRY), National Food for Work Programme (NFFWP) and Maharashtra Employment Guarantee Scheme.

The implementation of NREGA started from 2 February 2006 in 200 selected districts across 27 States. The government extended the programme to another 131 districts (thus raising the total to 331 districts) in phase II (April 2007) (Appendix Table A1). Subsequently in October 2007, a decision was taken to extend the programme to rural areas of all the remaining districts (GoI, 1 October 2007). Under this scheme, there are two types of works, "panchayat works" created by PRIs and "general works" created by the intermediate panchayat under the guidance of a programme officer at the block level. The works require unskilled labourers and the Act itself has listed out the activities: a) water conservation & water harvesting; b) drought proofing; c) irrigation canals; d) irrigation facility to SC/STs and land reform beneficiaries' lands; e) tanks de-siltation; f) rural connectivity; g) flood control and protection works. The PRI has to provide employment within 15 days of receiving an application failing which an unemployment allowance should be given. Employment at anytime has to be for a period of 14 continuous days.

The programme gives space for social audit by Gram Sabha. One of the main implications of NREGA, according to researchers, is reducing distress rural migration to urban areas which has social and personal costs.

Inspite of safeguards to stem corruption and clear guidelines, problems have been found on the ground level. Studies from Jharkhand, Bihar and Rajasthan have reported large scale lack of awareness about NREGA. The programme is

Appendix Table A1 State-wise Total Districts under NREGA

Sl. No.	State	Phase I (Feb '06)	Phase II (April '07)	Phase III (Oct '07)
1.	Andhra Pradesh	13	19	22
2.	Arunachal Pradesh	1	3	16
3.	Assam	7	13	27
4.	Bihar	23	38	38
5.	Chattisgarh	11	15	16
6.	Gujarat	6	9	26
7.	Haryana	2	4	20
8.	Himachal Pradesh	2	4	12
9.	Jammu and Kashmir	3	5	14
10.	Jharkhand	20	22	22
11.	Karnataka	5	11	19
12.	Kerala	2	4	14
13.	Madhya Pradesh	18	31	48
14.	Maharashtra	12	18	33
15.	Manipur	1	3	9
16.	Meghalaya	2	5	7
17.	Mizoram	2	4	8
18.	Nagaland	1	5	11
19.	Orissa	19	24	30
20.	Punjab	1	4	20
21.	Rajasthan	6	12	33
22.	Sikkim	1	3	4
23.	Tamil Nadu	6	10	30
24.	Tripura	1	3	4
25.	Uttar Pradesh	22	39	70
26.	Uttranchal	3	5	13
27.	West Bengal	10	17	18
	All India	**200**	**330**	**595**

Source: Ministry of Rural Development, *National Rural Employment Guarantee Act- 2005*, GoI http://nrega.nic.in

Appendix Table A2 State-wise Status of NREGA Implementation, 2006 – 08

Sl. No.	State	NREGA wage rate Rs	Employment provided no. of persondays per household		% of Households completed 100 days of employment	
			2006 – 07	2007 – 08	2006 – 07	2007 – 08
1.	Andhra Pradesh	80	31.4	39.6	2.7	9
2.	Assam	66	72.5	34.7	23.4	17.1
3.	Bihar	77	35.3	21.1	3.6	0.7
4.	Chhattisgarh	66.7	55.6	57.6	10.4	11.2
5.	Gujarat	50	43.7	29.6	5.4	3.9
6.	Haryana	99.21	48.2	50	11.1	10.4
7.	Himachal Pradesh	75	49.8	35.9	26.5	5.1
8.	Jammu and Kashmir	70	26.9	31.7	9.7	1.4
9.	Jharkhand	76.68	37.4	44.5	3.7	3
10.	Karnataka	74	41.1	44.4	12.8	4.2
11.	Kerala	125	22.8	28.6	0.5	32.1
12.	Madhya Pradesh	67	68.9	63.3	18.5	21
13.	Maharashtra	69	40.8	39	1.5	1.8
14.	Meghalaya	70	26.9	38.9	0.6	6.4
15.	Mizoram	91	15.6	35.8	11.7	0
16.	Orissa	70	57.5	37	11.1	3.4
17.	Punjab	94.48	52	10.5	16.8	5.3
18.	Rajasthan	73	85.4	75	54.4	42
19.	Sikkim	85	60	45.3	5.4	10.2
20.	Tamil Nadu	80	26.9	57.2	0.3	6.2
21.	Tripura	60	71.6	32.5	26.3	0.4
22.	Uttar Pradesh	100	32	33.1	26.3	0.4
23.	Uttranchal	73	31.2	42.5	2.8	8.3
24.	West Bengal	70	14.3	22.5	0.6	0.8
	All India	**—**	**43.1**	**41.8**	**10.2**	**10.8**

Source: 1. Ministry of Rural Development, GoI
2. Santosh Mehrotra (2008)

basically demand-driven but field studies from Kerala to Jharkhand reveal that the scheme is not operating in the manner envisaged. The studies further revealed the lack of prescribed worksite facilities (like drinking water and on-site crèche), especially for women and children. Sometimes the worker has to walk upto 5 km to the worksite; women with "breast-feeding" children have to perforce leave their children behind.

The States with no local bodies (e.g. Jharkhand) find it difficult to identify the eligible households and therefore lag behind in implementing the programme compared to other States. Bhatia and Drèze (2006) compared NREGA implementation in Rajasthan and Jharkhand and highlighted the role of political interest behind the programme's performance at the ground level. In Rajasthan, the ruling and opposition parties along with civil society organisations intensively campaigned for the programme and are very keen on the NREGA's implementation within the time frame. On the other hand, this kind of interest is missing in Jharkhand where the programme's implementation status is comparatively lower than other states. Lack of sufficient awareness about the programme is also seen as a reason for many not applying for employment. Appendix Table A2 gives details of the wage rate, persondays of employment provided under NREGA and households having completed 100 days of employment. The table clearly shows that even though the persondays of employment per household improved from 2006 – 07 to 2007 – 08, the proportion of households getting 100 days of employment to total employed households is still very low. It is also to be noted that sharp inter-state variations existed, for instance, in 2007 – 08, Rajasthan generated 75 person-days per household followed by Madhya Pradesh 69, Chattisgarh 58, Tamil Nadu 57 persons-days; but, six States reported that they created less than one-third of the prescribed employment days. This once again highlighted inadequate awareness about the scheme.

Till July 2008, a total of 5,11,335 works had been completed and 5,37,402 works were in progress under NREGA, water conservation and irrigation got first priority and occupied 56 per cent of total works, followed by rural connectivity (14 per cent), land development (12 per cent) and drought proofing (10 per cent).

Evaluating the two-and-a-half year old programme at this stage is not feasible. However, social audits done by civil society organisations, university scholars, representatives of Right to Food Campaign, All India Democratic Women's Association (AIDWA) and other NGOs have pointed out the problems of NREGA's implementation at the village level. Instances have been found of proper amount of wage not being paid; the job card not having any entry although the holders say they did work and got paid; unemployment allowance not being given even if work is not given within 15 days, leakages and use of machines. The relevance of the programme is, however, beyond question. Campaigns for greater awareness by civil society, continuous monitoring and social auditing could help reduce these shortcomings.

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