Prosjektnotat nr. 3-2015

Arne Dulsrud, Unni Kjærnes og Marthe Hårvik Austgulen

Institusjonelle betingelser for matvaresikkerhet blant husholdninger i India

SIFO

Prosjektnotat nr. 3 – 2015

STATENS INSTITUTT FOR FORBRUKSFORSKNING
Sandakerveien 24 C, Bygg B
Postboks 4682 Nydalen
0405 Oslo
www.sifo.no

Prosjektnotat nr. 3- 2015

SIFO Statens institutt for forbruksforskning
National Institute for Consumer Research

Tittel	**Antall sider**	**Dato**
Institutional Conditions for Household Food Security in India	76	26.02.2015
Title	ISBN(kun for fagrapporter)	ISSN (ikke for prosjektnotat)
Institusjonelle betingelser for matvaresikkerhet blant husholdninger i India		
Forfatter(e)	**Prosjektnummer**	**Faglig ansvarlig sign.**
Arne Dulsrud, Unni Kjærnes and Marthe Hårvik Austgulen	P- 11201242	

Oppdragsgiver

Norges forskningsråd

Sammendrag

Dette notatet er skrevet som en del av prosjektet *Matvaresikkerhet i India: samspillet mellom klimaendringer, økonomi, politikk og handel*. Et viktig mål med dette prosjektet er å identifisere sårbare grupper gjennom institusjonelle analyser og å lete etter mekanismer for hvordan institusjonelle forhold påvirker matsikkerhet på husholdningsnivå. Vi gjør dette ved å diskutere viktige teoretiske bidrag - spesielt knyttet til nøkkelbegrep som «food entitlements». Vi ser videre på hvordan slike rettigheter tenkes å påvirke matvaresikkerhet i sårbare husholdning i India med en særlig vekt på husholdningers kjøpekraft, egen matproduksjon, sosiale støtteformer og uformell distribusjon. Vi har valgt to stater som representerer variasjon når det gjelder viktige dimensjoner: Karnataka i sør og Bihar i nord. Videre presenterer vi en sammenligning mellom disse statene på viktige indikatorer som forbruksmønster, ernæringsstatus og helse. Avslutningsvis presenteres en modell for å studere matsikkerhet i sårbare husholdninger i en indisk kontekst.

Summary

This paper is written as part of the project *'Food Security in India: the Interactions of Climate Change, Economics, Politics and Trade'* funded by the NORGLOBAL program under Research Council of Norway. A key aim of this project is to identify vulnerable groups through institutional analyses, searching for mechanisms for how institutional conditions affect food security at the household level. We do this by discussing major theoretical contributions – particularly on the key concept of food entitlements. Furthermore, we explore major entitlements affecting food security in vulnerable household in India with a particular emphasis on purchasing power, own production, social support and informal distribution. We have selected two states that represent variation on key dimensions: Karnataka in the South and Bihar in the North. A comparison between these states on major indicators of consumption patterns, nutritional status and health are presented.

Stikkord

Matvaresikkerhet, India, sårbare husholdninger, mat, Karnataka, Bihar.

Keywords

Food security, India, entitlements, vunerable households, Karnataka, Bihar.

Institutional Conditions for Food Security in India

Exploring a Model of Household Food Security through the Study of Literature, Key Concepts and Statistics

av

Arne Dulsrud, Unni Kjærnes and Marthe Hårvik Austgulen

2015

STATENS INSTITUTT FOR FORBRUKSFORSKNING
postboks 4682, Nydalen N-0405 Oslo

Forord

Dette notatet er skrevet som en del av prosjektet *Food Security i India: de Samhandling av klimaendringer, økonomi, politikk og handel* finansiert av Norges Forskningsråd under NORGLOBAL programmet (2012-2016) der SIFO leder et forskningskonsortium med NUPI, IFPRI og CUTS som partnere. Notatet inngår som en del SIFOs arbeidspakke i prosjektet som omhandler matsikkerhet og sårbare forbrukere og utgjør bakgrunnen for en survey som skal gjennomføres i de indiske delstatene Karnataka og Bihar våren 2015.

Oslo, 26. februar 2015

STATENS INSTITUTT FOR FORBRUKSFORSKNING

Innhold

Sammendrag

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1 Introduction

The primary objective of this paper is to identify and concretize the research questions to be explored in work package 3 of the project. We will do that by reviewing relevant literature, available statistics, and theoretical concepts. We will also explore the analytical possibilities of a comparison of the two Indian states Karnataka and Bihar. At the onset, we will outline a model addressing the key interrelationships considered to be relevant to an institutional approach to household food security. From the point of view of households, these will be identified as providing different forms of entitlements (ownership rights, wages and support schemes), concepts of vulnerability (socioeconomic inequalities, demographic and regional issues, etc.), as well as access through formal and informal distribution systems and infrastructural issues. This model is meant to form a point of departure for analysing how vulnerability to food insecurity coincides with natural, climate and institutional factors. We will discuss how to define vulnerable groups – in terms of statistical categorisations (income statistics, census data, the poverty line, etc.) as well as social classes (unemployed, day labourers, access to land, etc.). Moreover, we need to consider the availability and role of various public support systems, including food oriented measures like NREGA, PDS and MSP, and support in cash. In this regard, some impacts of the new Food Security Bill are discussed.

The paper will conclude by producing an operationalized model for empirical investigation. We will also identify some preliminary assumptions and questions. Our next step is to develop these further through qualitative interviews with key informants in the selected states, including public officials, as well as representatives from civil and market organisations.

The paper is very much work in progress. Chapter 4 on food availability for poor Indian households will rely heavily on contributions from workpackages 1 and 2. We will also need input from former studies carried out by IFPRI and CUTS as well as experience among our partners in these institutions. Input from CUTS will also be needed to chapter 7 on social security systems and to our plans for empirical studies outlined in chapter 9.

Our selection of states is meant to demonstrate variety when it comes to effects of climate change, trade patterns, market reforms and the role of social security systems. Through a comparative approach, we aim at hypothesizing on the dynamic and function of interconnected institutional factors at the local and household levels. In particular, it would be interesting to explore how agricultural market reforms and changes in employment structures interact with social entitlements (such as PDS and NREGA). Moreover, we intend to capture public and political debates and mobilisation around such issues. We suggest interviewing around ten persons in each state. These interviews should take place prior to the household survey taking place at local level under part C), preferably during our consortium hosted by IFPRI by spring next year.

The last part of WP 3 includes a survey taking place both in urban and rural households in two states, Karnataka and Bihar. This paper will, in addition to the literature review summarising knowledge on food security in India and how it is being combatted, aim at narrowing

down and focussing our research questions and, building on that, develop an operationalised conceptual model for the study.

2 Theoretical approach and key concepts

2.1 Food security and insecurity

In academic literature, the social condition of not having enough food is usually characterized as 'food insecurity'. Food insecurity exists when people have limited or uncertain availability of nutritionally adequate and safe foods, with limited or uncertain ability to acquire acceptable foods in socially acceptable ways, for example without resorting to emergency food supplies, begging, scav
enging, stealing or other coping strategies (Bickel et al., 2000). Severe food insecurity will result in hunger or malnutrition. Hunger, referring to the uneasy and painful sensation caused by the recurrent and involuntary lack of food, can occur in many situations, such as dieting or being too busy eating. Hunger caused by food insecurity is, however, a condition resulting from financial, material, and social constraints hindering access to food. Malnutrition refers to a lack of or imbalance of protein, calories, vitamins or minerals, including even unbalanced diets leading diseases of overnutrition and obesity. In addition to physical and mental ill-health and the increased mortality that follows, food insecurity may have social consequences, such as migration, riots and economic instability.

Food security, by contrast, refers to a condition where all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary preferences for an active and healthy life (FAO, 2006; Maxwell, 2001). Following the world food crisis of 1972-1974 'food security' emerged as the primary cognitive lens through which the prevalence and complexity of malnutrition and hunger were viewed. A renewed interest in this topic is in these days observed due to events like the economic crisis erupting in 2008 (Hadley and Crooks, 2012) as well as the effects of climate change. This comprehensive literature on food security is dominated by quantitative and productivist approaches which concentrate on a need to produce more food globally (see e.g. FAO 1996; Foster and Leathers 1999; Quinn and Kennedy 1994). There is no doubt that research is needed on such topics, not the least with regard to the handling of environmental sustainability and climate change.

Yet, efficient production and liberalised global trade, aiming at larger supplies and low prices, has not succeeded in producing the intended food security for all. The productivist capture seems to direct attention away from outcomes in terms of whether people have enough and healthy food to eat, outcomes that depend on many other factors than overall volumes of supply, poverty representing the primary cause of under- and malnutrition. Other food policy issues also tend to be overlooked in the productivist centred discourse, including environmental and climate challenges, national/regional self-sufficiency, and the welfare of small farmers. With this as a reference, other concepts have been introduced, especially the concept of 'food sovereignty'. However, in spite of their focus on imbalances of power, these concepts do not seem to be of much help for analysing the situation on the household level, where food may be procured through own production as well as through public or market based distribution systems. On this background, we have retained the concepts of 'food security' and 'food security'.

Food insecurity is multi-dimensional and its causes may vary accordingly. According to the United Nation's Food and Agriculture Organization (FAO) (2006), the concept of food security rests on four pillars: food availability, access, use, and stability. Food availability means

having available sufficient quantities of food on a continuous basis. As already mentioned availability depends not only on supply in terms of production volumes, but even on the character and functioning of the whole provisioning chain. The next two pillars address the situation at the household level. Food access is having sufficient resources, both economic and physical, to obtain appropriate foods for a nutritious diet. Food use is the appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation. Stability refers to how availability, access and use develop over time.

Challenges to food supply in terms of the overall quantities of food available are rarely found to explain food insecurity at the household level. Poorly developed logistical systems may be limiting, where people living far from shops or depending on inadequate food services may experience problems of getting nutritious food. It is limited access, strongly influenced socio-economic structures, that is found to be the dominant explanation to food insecurity (see eg Sen and Dreze). This seems to be the case in poor as well as in rich societies, in ordinary times as well as in times of crises.

On this background, the understanding has developed that food supplies and poverty cannot be seen as isolated factors influencing household food security, but need to be studied as a concrete and institutionalised dynamic (Ingram 2011). While production quantities have increased globally, poor people lose out on the production side as well as on the consumption side and food insecurity among poor people have remained (Jha 2009).

Ingram (2011) argues that a food systems approach is needed, integrating analyses of the full set of food system activities with those of the food security outcomes for poor households, including stability of food access, utilization and availability, considering even impacts of environmental change. This will, in turn, enable the identification of intervention points for enhancing food security.

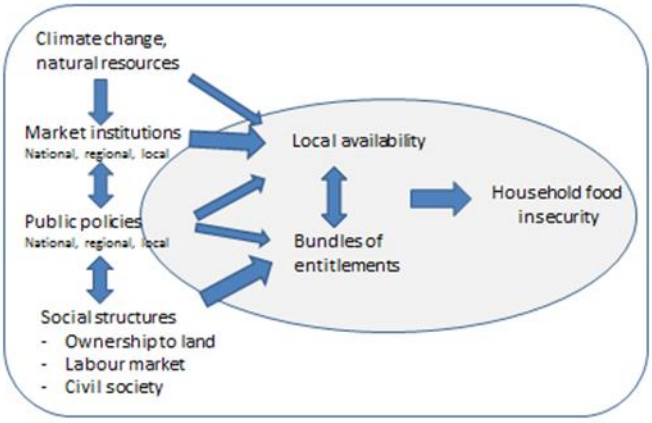
Food security at the local and household level is influenced by the shifting interrelationships between production systems, food distribution systems, and state involvement. Despite its rapid economic development (and democratic institutions), India has been less successful than China and even Bangladesh in improving the satisfaction of basic needs (Sen 2011). Sen (1982) demonstrated in his classical study of the Bengal famine of 1943 that the severity of this famine did not emerge from a lack of food supplies per se, but rather from inequalities built into the mechanisms for distributing food. The tendency of poor people losing out with regard to food access is still evident. Today, poor Indians' food insecurity is aggravated by environmental degradation and climate change. A recent case study in the Himalayas illustrates the point, showing that food security in the region depends on interactions between local agricultural productivity, family income, availability of employment outside the region, food purchasing power, and infrastructural facilities for the transportation, storage and distribution of food (Tiwari and Joshi 2012).

We lack critical research on how local food security systems are affected by changes in climate as well as labour markets, food trade, and public policies (Vyas 2000; O'Brien et al 2004). Several studies have been conducted on the impacts on Indian food security of climatic changes on the food production, (national and international) food trade and policy initiatives to mitigate food insecurity (see e.g. Douglas 2009; Butler 2009; Dorosh 2009; Jha et al 2011; Chatterjee et al 2011). However, few have aimed at understanding how these macro level changes together impact on food security on the household level in India. This calls for the development of a meso level approach that can capture how changes in climate is handled through agricultural adaptations, trade institutions, and public initiatives, and how that materializes in terms of food security for vulnerable population groups.

2.2 An institutional approach to household food security in India

In this project we will use the concept 'entitlement' to identify the different types of institutional conditions for household food security. Entitlements have been defined by Sen (1984) as "the set of alternative commodity bundles that a person can command in a society using the totality of rights and opportunities that he or she faces". The concept allows us to recognise poverty as a lack of entitlements which can be exchanged for food, while also considering supply side factors. In this project we distinguish between three types of entitlements: 1) entitlements through a person's own production, which presuppose access to agricultural land or other sources of food (like hunting and gathering), 2) entitlements through market distribution, which presuppose sufficient market supplies, trade systems for efficient reallocation of food, functioning logistics, and purchasing power, and 3) entitlements through public systems (income replacement, price regulation, distribution in kind), which presuppose social rights and social security systems. It is the combined 'bundle of entitlements' (plus informal access) that decides whether households have sufficient and stable access to a healthy diet and thus their degree of vulnerability to food insecurity. When entitlements obtained through a person's own labour or own production fail, access to sufficient and appropriate alternatives, such as social security or food relief, become crucial. The following literature overview will be organized according to the three types of entitlement.

A model of institutional influences on entitlements and household food insecurity



With its formal and social references, the concept of entitlement points to a relational and institutional approach to food insecurity. A situation of household food insecurity depends not only on the bundle of legally founded entitlements that each person and household has at a given point, but even on how these entitlements function, how they are realised. In addition, there must be food available locally. Both are formed by institutional and structural conditions, including market institutions, the labour market, structures of ownership – especially ownership to land, as well as public policies regulating markets and social security. Our aim is to understand the dynamics of entitlements and local availability as influenced by specific policies as well as market based provisioning systems. This leads up to an inclusive model of institutional conditions for household food security. Concentrating on how availability and access, as produced by bundles of entitlements, come together locally, the model includes various types of institutional and macro level preconditions. Food market institutions affect local availability in a number of ways, including overall supplies as well as the organisation and infrastructures of market distribution. Public policies influence availability as well as social security and labour market policies. We also need to consider how market provisioning

is influenced by natural conditions, including climate change, and regulatory interventions. Likewise, entitlements are directly and indirectly influenced by key aspects of social structure, such as the distribution of ownership to land, labour market developments, and the functioning of civil society. Yet, since the aim is to study local and household food security, these macro level and institutional preconditions are not subject to study per se, but primarily through their interaction with and effects upon the local and household situation.
Using this model as a frame of reference, this paper includes an overview of the food security situation, provisioning structures, and different types of entitlements – through purchasing power, own production and public provisioning systems. In the final section, we will suggest ways in which the model can be operationalised and focused in our empirical investigation

2.3 Comparing two states

Our model of food security, focusing on institutionalised interrelationships, means that we need to be specific. Our aim is to study how different conditions affect the availability and access to food for poor households. In order to do that, we have selected two state cases that represent variation in key dimensions, including:

- Availability of natural resources and vulnerability to climate effects
- Poverty level and socio-economic vulnerability
- Public policy making and political culture

We have chosen two states that appear to be quite different in these respects, namely Bihar and Karnataka.

Bihar is in a relatively humid region (rainfall 1200-1700 mm/yr) in northern India, which will provide a contrast to other regions we might select in drier parts of India. It is a flood-prone state, with increasing intensity over years. Also some problems of frost are now arising, affecting wheat yields. The extent of deep poverty and malnutrition is large. State-level policy-making has been trying to act progressively and has been getting support and cooperation from the central government, but the results are meagre.

In contrast, Karnataka is in the southern, semi-arid tropical region which is vulnerable to rising temperatures from climate change. Relative to Bihar it is much drier (rainfall 700-800 mm/yr). Water resources are limited, with very deep groundwater. Frequent droughts have been a problem in this state. The extent of poverty and malnutrition is high, but the situation does not seem as severe as what is observed in Bihar. The state government appears more pro-active with policy and seems ready to institute reforms. Karnataka has been in the process of reforming markets and offers some lessons to be learned with regard to the effects on household food security.

By comparing these two states we intend to get better insight into conditions that together produce and protect against vulnerabilities, thus showing where there is the greatest need for intervention. At the same time, by considering different policy environments, we can discuss existing possibilities to address the perceived need for action.

3 Food security in India

3.1 Too little food to eat

World Health Assembly decided in 1977 that the main social target in the coming decades should be the attainment by every citizen of the world of a level of health that will permit him to lead a socially and economically productive life. India has adopted a multi-sectorial and multi-pronged strategy to combat under-nutrition and improve the nutritional status of the population (Mishra 2013).

India is facing food crisis. Global Hunger Index ranked India at 65 out of 88 countries, Pakistan and China ranked ahead of India. The World Bank estimates poverty at 40 per cent – 400 mill. The figures for malnutrition and nutrition related health problems in India are staggering. Health problems associated with low energy intakes and lack of micro nutrients are endemic.

3.1.1 The incidence of nutrition related health problems

One half of the children under the age of 5 years are moderately or severely malnourished. 30 percent of newborn children are significantly underweight. Chaturvedi (2013) presents figures from the National Family Health Survey 2005-06; indicating that 42.5 percent of children are underweight, 19.8 percent are wasted, and 48 percent of children have a stunted growth. Stunting reflects a vicious circle of child under-/mal-nutrition, producing higher susceptibility to infectious diseases, with episodes of illness leading to even lower food intakes.

Nearly 60 percent of women are anemic. According to Mishra (2013), iron deficiency anemia is the most widespread micronutrient deficiency, representing one of the major indirect causes of Indian maternal mortality, triggering increased susceptibility to infectious diseases and lower performance in schools. The National Family Health Survey (NFHS-3) indicates that as many as 69.5 percent of children are anemic. Among women aged 15-49 the proportions are 57.4 in rural and 50.9 percent in urban areas, respectively, are anemic.

Vitamin A deficiency is also one of the major deficiencies among lower income strata in India. 5.7 percent of children suffer from eye signs of vitamin A deficiency, in severe cases leading to blindness. Vitamin A deficiency may also affect growth and normal development in children.

Malnutrition diseases like anemia and vitamin A deficiency are associated with an unbalanced diet dominated by cereals, especially if the cereals are refined, like white rice. Valuable sources include green/red vegetables, some fruits, lentils, carotene rich oils, and meat/fish.

In areas with iodine poor soil, iodine deficiency, manifested as goitre, can be a serious problem, leading to pre-natal mortality and mental retardation. In severely endemic areas, cretinism may affect up to 5-15 percent of the population.

Children born to mothers who were illiterate or who belonged to scheduled castes/tribes were more likely to be anemic than their counterparts. The effect of malnutrition is thus intergenerational. Maternal under-nutrition often leads to low birth weight, which contributes to 60 percent of neonatal deaths and irreparable mental and physical impairments among newborns that do survive. Malnutrition in children under the age of two can cause irreversible brain damage, retard normal growth and increase the risk of developing chronic disease later in life. All these factors combined lead to less productive adults and higher health care costs – in addition to the severely impaired quality of life for the people that are affected.

There are few indications that conditions are improving. On the contrary, according to The State of the Indian Consumer 2012 (CUTS), the number of hunger-stricken people in India increased by 65 million during the period 1990-2005 . CUTS relate this to the growing social inequalities during the post-reform period – in spite of PDS.

3.1.2 Nutritional intakes

Intake of dietary energy per person continues to be the most widely used indicator of the level of nutrition of a population. Levels of calorie intake are used, in particular, as indicators of adequacy of nourishment of populations of the developing countries and of economically deprived or geographically isolated segments considered to be at risk of undernourishment. This section presents estimates of various aspects of dietary energy intake – its average, its distribution over households and persons, the contributions of different food categories, etc., for India and the major States. The data presented in this section is drawn from the NSS reports on the 66th round of consumer expenditure survey. In examining the estimates of distribution of calorie intake over persons, it needs to be borne in mind that data on food consumption was collected for households as a whole and no break-up over individual household members is available. Accordingly, in line with NSS practice, the distribution of calorie intake over persons is derived by assigning to each person in a surveyed household the per capita calorie intake of the household.

In 2009-10 average dietary energy intake per person per day was 2147 Kcal for rural India and 2123 Kcal for urban India. All the major States had per capita rural/urban levels of calorie intake within + or -10% of the all-India rural/urban average. Average caloric intake per capita was in 2009-10 similar in Bihar and Karnataka, with 2036Kcal and 2026Kcal, respectively in rural areas and 2213Kcal and 2115Kcal, respectively in urban areas. In each sector average calorie intake increased steadily with monthly per capita expenditure (MPCE) class. The difference between the bottom decile class (poorest 10% of population ranked by MPCE level) and the next decile class (the next 10%) in per capita calorie intake was as high as 189 Kcal in urban India and 176 Kcal in rural India.
Estimates of average calorie intake for India and the major States from six quinquennial surveys of consumer expenditure including the 66th round show a decline in average calorie intake between 1972-73 and 2009-10. The overall decline is substantially greater for rural than for urban India, and appears to have been sharper in the period since 1993-94 (50th round), especially in the urban sector. The proportion of households with calorie intake below the level of 2700 Kcal per consumer unit per day has grown more or less steadily since 1993-94: from under 52% in rural India to nearly 62%, and from 57% in urban India to about 63%.

In Table T5, the distributions of households are shown using only 4 broad calorie intake classes. In all tables of distribution of calorie intake, calorie intake per consumer unit is expressed as a percentage of a level of 2700 Kcal per day per consumer unit. At the all-India level, about 19.4% of rural households and 20.5% of urban households had a calorie intake level in

the "<80" category (less than 2160 Kcal per consumer unit per day) in 2009-10 Table T5). We find similar proportions in Bihar and Karnataka with calorie intakes below 80% in rural areas (24.6 and 24.2%) as well as in urban areas (14.9 and 14.4%).

Table T5: Per 1000 distribution of hhs by level of calorie intake per consumer unit per day in 2009-10: major States

per 1000 no. of RURAL hhs with calorie intake per consumer unit per day*				State	per 1000 no. of URBAN hhs with calorie intake per consumer unit per day*			
<80	80-100	100-120	≥120		<80	80-100	100-120	≥120
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
154	296	270	280	Andhra Pradesh	161	331	262	245
173	420	273	133	Assam	164	352	310	174
246	387	211	157	Bihar	149	381	232	237
263	307	226	203	Chhattisgarh	204	388	195	214
263	346	197	195	Gujarat	242	315	235	206
166	285	289	258	Haryana	238	247	273	241
252	367	213	168	Jharkhand	204	277	257	262
242	338	231	189	Karnataka	144	386	251	219
219	287	214	280	Kerala	229	257	196	317
268	312	217	204	Madhya Pradesh	258	325	207	209
131	349	266	254	Maharashtra	220	326	246	208
130	305	296	268	Orissa	139	299	266	297
129	307	269	296	Punjab	145	318	233	303
107	304	340	249	Rajasthan	157	371	244	227
249	282	226	243	Tamil Nadu	177	337	215	271
170	316	265	248	Uttar Pradesh	243	326	195	235
249	366	230	156	West Bengal	261	342	224	173
194	**328**	**253**	**225**	**India**	**205**	**332**	**233**	**230**

* expressed as a percentage of a level of 2700 Kcal per consumer unit per day

Table T7 shows that the share of energy intake contributed by cereals was about 60% for rural India and about 50% for urban India. The share of cereals varied across the major states from 46-48% (Punjab, Kerala and Haryana) to 70% (Orissa and Assam) in the rural sector and from 43- 44% (Punjab, Kerala and Gujarat) to 62-63% (Orissa, Assam and Bihar) in the urban sector. The share of energy from cereals is 64.7% in rural Bihar, the highest of all Indian states. In rural Karnataka, the share from cereals is 56.5%, close to the Indian average. Even for urban areas, the Bihar figure is the highest (with Assam) – 52.9%, while it is lower for urban Karnataka households – 42.3%.

The share of cereals of total calorie intake has declined since 1993-94 by nearly 7 percentage points in rural and about 30 percentage points in urban areas. Cereals have been replaced by oils and fats, which have risen by 3 percentage points, and milk and milk products, which have grown by about 1.4 percentage points in urban areas, but only 0.6 percentage points in rural areas.

Table T7: Percentage share of food and cereals in total household consumer expenditure, and percentage contribution of cereals to calorie consumption: major States, 2009-10

State	% expenditure on food		% expenditure on cereals		% of calories from cereals	
	rural	urban	rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Andhra Pradesh	58.1	44.8	13.6	9.6	60.0	52.2
Assam	64.4	52.9	20.7	12.8	70.0	62.3
Bihar	64.7	52.9	21.3	14.8	68.8	62.1
Chhattisgarh	58.2	43.7	15.4	10.4	69.0	58.6
Gujarat	57.7	46.2	10.7	7.6	50.3	44.2
Haryana	54.0	43.1	7.3	5.8	48.2	45.9
Jharkhand	60.9	51.5	19.2	11.9	65.9	57.8
Karnataka	56.5	42.3	12.3	9.0	56.6	49.7
Kerala	45.9	40.2	8.0	6.3	47.4	43.8
Madhya Pradesh	55.8	41.7	13.6	7.6	61.6	52.4
Maharashtra	54.0	41.0	11.3	6.6	53.6	44.9
Orissa	61.9	48.4	18.6	11.8	70.3	62.9
Punjab	48.2	44.3	6.9	6.2	46.1	43.0
Rajasthan	54.8	48.0	12.0	8.4	56.1	52.5
Tamil Nadu	54.7	45.0	9.0	7.7	56.1	50.1
Uttar Pradesh	57.9	46.3	15.2	9.3	63.0	55.5
West Bengal	63.4	46.2	18.3	9.1	63.7	53.2
All-India	**57.0**	**44.4**	**13.7**	**8.1**	**60.4**	**50.4**

In rural India non-cereal food contributed about 40% of calorie intake. The percentage break-up of this part of calorie intake (the part coming from non-cereal food) was: oils and fats: 23%; miscellaneous food, food products and beverages: 20%; milk and milk products: 16%; sugar and honey: 11%; pulses, nuts and oilseeds: 11%; roots and tubers: 9%; vegetables and fruits: 7%; meat, eggs & fish: 3%. Reflecting the lower share of energy from cereals in urban India, non-cereal food contributed about 50% of calorie intake. The percentage break-up of this part of calorie intake was similar to that in rural India, though the share of roots and tubers was noticeably lower at 6%. "Sugar and honey" generally had a higher contribution to calorie intake in states with higher average levels of living, while "roots and tubers", and also "vegetables and fruits", had a larger share in poorer states.

Protein intake per consumer unit per day was about 73g in rural and 72g in urban areas . The range of inter-state variation was much wider in rural areas (from 48.8g per capita per day to 71.4g) than in urban areas (54.6g to 64.5g). In some of the poorer states, protein intake was markedly lower in rural than in urban areas. On the other hand, in the states with the highest levels of protein intake, it was the rural population and not the urban that had higher protein intake. These disparities may be associated with how the lower proportion of energy from cereals is replaced by other food items; protein-rich pulses and food of animal origin, or protein-deficient sugar and fats, respectively.

Over the period 1993-94 to 2009-10 Indian protein intake has decreased from 60.2g to 55.0g per person per day in rural and from 57.2g to 53.5g in urban areas. The decline has taken place in most major states but has been sharpest in rural areas of Rajasthan, Haryana, Uttar Pradesh and Punjab – where intake has fallen by 9-12g. During this period, the contribution of cereals to protein intake has fallen by about 4 ½ percentage points in rural India and by 3 percentage points in urban India. The contribution of pulses appears to have undergone a slight fall in both rural and urban sectors. In rural areas there has been an increase of about 3 ½ percentage points in the contribution of the "other food" category, and also a rise of 1 percentage point in the contribution of "milk and milk products". In urban areas, the share of "milk and milk products" has seen a rise of 2 percentage points.

Protein intake is associated with income level. Average protein intake per capita per day was seen to rise steadily with MPCE level – from 43g in the lowest MPCE decile class to 82g in the top decile class in rural India, and from 44g in the lowest decile class to 78.5g in the highest in urban India. The contribution of cereals to protein intake was seen to fall steadily from 73% in the lowest decile class to 47% in the highest in rural India and from 69% to 36% in urban India. On the other hand, the contribution of milk and milk products to protein intake was seen to rise from 3% in the lowest decile class to 15% in the highest in the rural sector and from 5% to 18% in the urban sector.

Average fat intake for the country as a whole was about 43g per person per day in the rural sector and 53g in the urban sector. Considerable inter-state variation existed, especially in rural India, where 6 out of 17 major States had an average per capita intake less than 33g per day while 4 other major states had an average intake of more than 60g. Per capita fat intake in the top decile class of the urban sector was slightly over 83g, more than three times that in the lowest decile class (about 27g), while in the rural sector the intake of the top decile class, at 78.4g, was nearly four times higher that of the bottom class (21.4g).

In case of fat intake, there is a rising trend, with every major state showing an increase, though the extent varies. At all-India level the increase has been from 31.4g per person per day in 1993-94 for the rural population to 38.3g in 2009-10 – a rise of 7g over the 16-year period, and from 42.0g to 47.9g for the urban– a rise of 6g over the same period.
Turning to the selected two states, we find quite different patterns. To the rural diet dominated by cereals in Bihar is added some oils and fats, roots and tubers (mainly potatoes?), plus a little of dairy products. The average urban diet is not much richer, but there is a little less potatoes and slightly more of miscellaneous foods. In rural as well as urban Karnataka, non-cereal foods are more important, especially pulses and sugar, plus a larger share of miscellaneous foods. It is noticeable that of non-cereal food, the share of energy from oils and fats is more or less the same across the two states and even in urban and rural areas.

In Bihar, daily protein intake per consumer unit is 70 grams in rural, 76 grams in urban areas. The figures are slightly lower for Karnataka; 66 grams in rural and 69 grams in urban areas. As noted above, protein adequacy depends on the quality of the protein, which can be evaluated only by considering the overall composition of the diet, which, as we have seen, is different in the two states.
As expected, in both rural and urban Bihar, the primary source of protein, about two thirds are cereals. The category ‘other food’ is the main supplement, with slightly more pulses and dairy products in urban areas. Cereals dominate as a source of protein even in Karnataka, but here other sources are more important; ‘other food’ plus pulses and dairy products. With fewer cereals, there is a little more of all other protein sources in urban Karnataka, but without any distinctly urban pattern. In neither Bihar nor Karnataka do eggs, fish and meat represent any significant source of protein.

We find significant differences in daily fat intake per consumer unit between the two states. The lowest figures are found in rural areas in Bihar, with 38 grams per consumer unit, compared to 58 grams in rural Karnataka. But even in urban areas, fat intake is lower in Bihar, 50 grams. The highest figures are found in urban Karnataka, 64 grams per day per consumer unit.

3.2 Statistics on consumer expenditure and food consumption patterns

3.2.1 The level of consumption

Using the Modified Mixed Reference Period (MMRP) method of measurement of Monthly Per Capita Consumer Expenditure (MPCE), average MPCE in 2009-10 was estimated as Rs.1053.64 in rural India and Rs.1984.46 in urban India. The median level of MPCE was Rs.895 in rural India and Rs.1502 in urban India, thus indicating a skewed distribution. The poorest 10% of India's rural population had an average MPCE of Rs.453. The poorest 10% of the urban population had an average MPCE of Rs.599. The top 10% of the rural population, ranked by MPCE, had an average MPCE of Rs.2517 – about 5.6 times that of the bottom 10%. The top 10% of the urban population had an average MPCE of Rs.5863 – about 9.8 times that of the bottom 10%. In both rural and urban areas, the average number of children declines steadily as MPCE level rises. Richer households, on the average, have fewer under-15 members.

Average rural MPCE was lowest in Bihar and Chhattisgarh (around Rs.780), and also low in Orissa and Jharkhand (around Rs.820), as well as in Uttar Pradesh and Madhya Pradesh (around Rs.900). Maharashtra (Rs.2437) and Kerala (Rs.2413) were the two major states with the highest MPCE in the urban sector, followed by Haryana (Rs.2321). The other major states with average urban MPCE higher than the all-India average were Andhra Pradesh (Rs.2238), Punjab (Rs.2109) and Karnataka (Rs.2053). Urban MPCE was lowest in Bihar.

In the 22-year period from 1987-88 to 2009-10, real MPCE measured by the Uniform Reference Period method was estimated to have grown by only 19% in rural India, but by as much as 42% in urban India. The Mixed Reference Period method gives similar findings; real MPCE grew by about 19% in rural India during the 16-year-period from 1993-94 to 2009-10, and by as much as 37½ % in urban India over the same period.

Thus, judging from these data, the urban rich have benefitted most from the economic development over the last two decades, while the rural poor have not seen much improvement. There are also huge differences across the Indian states, with mean consumer expenditures being almost three times higher in a rich state like Karnataka, compared to very poor Bihar.[1]

3.2.2 Food consumption patterns[2]

Using the Modified Mixed Reference Period (MMRP) method of MPCE measurement, food was estimated to account for about 57% of the value of the average *rural* Indian's household consumption during 2009-10. This included 14% for cereals and cereal substitutes, a little less than 8% for milk and milk products, and 8% on vegetables.

For the average urban Indian, over 44% of the value of household consumption was accounted for by food, including 8% by cereals and 7% by milk and its products. While the share of

[1] *Within-State inequality:* Lorenz ratios of the distributions of MPCEURP, MPCEMRP and MPCEMMRP have been computed for the rural and urban sectors of each State/UT and appear in Statement 1 on page 51. Table T18 shows Lorenz ratios (LRs) of the rural and urban MPCEMMRP distributions for selected States. For purposes of comparison of inequality with level of living, the rank of the State (among the 27 States listed) by sectoral average MPCEMMRP is shown alongside

[2] For details on estimates and how to interpret the numbers see page 32 of the report (as well as chapter 2).

most of the food item groups in total consumption expenditure was higher in rural India than in urban India, fruits and processed food were exceptions, thus indicating not only different levels, but even different patterns of food consumption.

The share of food in total consumption expenditure in rural households varied from 46% for Kerala and 48% for Punjab to over 60% in Bihar (65%), Assam (64%), West Bengal (63%), Orissa (62%) and Jharkhand (61%), again first of all reflecting different standards of living. The share of food in consumption expenditure of urban sector households varied less – only from 40-41% in Kerala and Maharashtra to 52% in Jharkhand and 53% in Bihar and Assam.

For fruits, per capita expenditure appears to be strongly correlated with overall MPCE levels, especially in the rural sector, with the lowest-rural-MPCE States of Bihar, Chhattisgarh, Orissa and Jharkhand registering the lowest figures of rural fruit consumption.

A key issue in discussions of food security is *cereals*. Average cereal consumption per person per month was 11.3 kg in rural India. For the poorest 10% of the rural population, average monthly per capita cereal consumption was around 10.2 kg. It is seen to increase with every decile class, quickly at first, to reach 11 kg in the third decile class, and then more slowly. It was above 12 kg for the top 2 decile classes.

Mean monthly cereal consumption was 9.4 kg in urban India. From this it might appear that the average urban Indian's monthly cereal intake was about 2 kg less than that of the average rural Indian. But, as will be discussed later (paragraph 3.13.5), the cereal content of purchased processed food is left out of the estimate of cereal consumption. Since the urban population consumes processed food to a greater extent than the rural, the difference in cereal consumption between the two may be less than it appears. In urban India, per capita cereal consumption increases from under 9.5 kg to about 9.7 kg per month over the first 5 decile classes but then starts to fall. In the eighth decile class it falls below its level in the first decile class and then falls further, finally plunging to 8.6 kg for the top decile class of population. It is typical that urbanization is associated with cereals, especially in their crude form, being replaced by other sources of dietary energy. Some of it is nutritionally valuable, but, especially among the poor, this modernization is associated with a calorie rich but nutritionally poor diet.

In Bihar, average monthly cereal consumption was 12.2 kg in rural areas, about the same, 12,0 kg in urban areas. This was evenly distributed between rice and wheat, with very low consumption of other cereals. Levels were lower in Karnataka, 10.0 kg in rural parts of the state, 9.2 kg in urban parts. Here, however, rice constitutes the largest proportion (56 % rural, 60% urban), other cereals coming next (33% rural, 21% urban), while little wheat is eaten (11% rural, 21% urban).
Household consumption surveys[3] show that since 1999-2000, per capita quantity of consumption has declined not only for cereals as a whole but for individual cereal items for which data

[3] The survey estimates presented in this report are of three kinds:
(a) Estimates of per capita consumption (quantity and value) of detailed items
(b) Estimates of proportions of households incurring consumer expenditure on different items during a 7-day, 30-day or 365-day period
(c) Estimates of proportions of households possessing specific durable goods on the date of survey

For each detailed item, estimates of the proportion (number per 1000) of households in any sector of any State/UT that consumed the item during the reference period are given alongside the estimates of per capita consumption. The reference period was "last 7 days" for edible oil, vegetables, meat/fish/eggs, fruits, salt and spices, beverages, refreshments and processed foods, pan, tobacco and intoxicants. For the remaining items of food and non-food, including cereals, pulses, milk and milk products, sugar, fuel, education, medical care, transport, all consumer services, and rent, the reference period was "last 30 days".

were collected: rice, wheat, jowar and its products, etc. The proportions distributed through the PDS system and through other channels, respectively, will be discussed below.
Pulses are also highly important in the Indian diet and crucial for its nutritional adequacy. At all-India level monthly per capita consumption of pulses and pulse products was estimated as 651g in rural and 788g in urban India. In value terms monthly per capita consumption was Rs.35.03 in rural and Rs.49.12 in urban India. The consumption of pulses and pulse products dropped since 2004-05 from 0.71 kg to 0.65 kg per capita in the rural sector and from 0.82 kg to 0.79 kg per capita in the urban sector. There was a decline both in per capita consumption and in percentage of households reporting consumption in case of *moong* and *masur dal* and an increase in case of split gram, showing a tendency of the population to substitute less expensive pulse varieties for more expensive ones.

Even *oils and fats* are important in the traditional Indian diet as the primary source of dietary fat. Monthly per capita edible oil consumption was estimated as 636g in rural India and 818g in urban India. Mustard oil is most important, with 287 grams consumed per month on average in rural areas, a little less, 230 grams, in urban areas. This is followed by 'other edible oils', ghee/butter fat probably being the most significant of these, plus various types of processed fat. This is clearly more popular among urban dwellers, with 408 grams per month, compared to 243 grams monthly among rural people.

Foods of animal origin have traditionally been of lower significance in Indian dietary cultures, especially when it comes to meat. Milk and dairy products commanded a share of 7.6% of consumer expenditure in rural India and 6.9 in urban India. The group "egg, fish and meat", on the other hand, had a share of 4.7% in rural and 3.6 in urban consumer expenditure. The consumption of eggs during a 7-day period was reported by 27% of rural and 32% of urban households. Per capita consumption of eggs was 1.73 per month (0.40 per week) in rural India and 2.67 (0.62 per week) in urban India. In case of fish, the percentage of households reporting consumption is markedly higher in rural (28%) than in urban India (21%). For mutton and chicken, however, the urban percentage exceeded the rural by about 5 percentage points. Due to dietary restrictions, pork and beef are rarely eaten. The all-India averages do, however, conceal wide divergence in patterns of consumption among different regions in the country. The consumption of milk and dairy products is relatively concentrated in the northern and western region of the country, and that of eggs, fish and meat in the eastern, north-eastern and southern regions.

The Indian cuisine offers a wide variety of *vegetables*. These are crucial not only for taste and the culturally influenced character of dishes, but even for the supply of a range of micro nutrients. Overall, potatoes, onions, brinjal, leafy green vegetables, and tomatoes dominate (plus chillis, eaten frequently, but of course in lesser quantities), all having been eaten by 60% of the surveyed households during the last week. Carrots, lemons, cauliflowers, cabbages, tomatoes, cucumbers, lady's fingers and bitter gourd were consumed by a greater proportion of urban households than of rural households, while pumpkins, potatoes, onions, brinjal, jhinga, leafy vegetables and green chillies were consumed by more rural than urban households.

Fruits appear generally to be consumed less often and the overview is dominated by oily nuts, including coconut, groundnut, and cashewnut. Also, starchy bananas are consumed in quite large quantities. Among ordinary fruits, mangos, apples, grapes and papaya dominate. Per capita urban consumption outstripped rural consumption not only in value but also in quantity terms. Rural-urban disparities in fruit and nut consumption were relatively low in case of groundnuts, coconuts, bananas and mangoes, and high for apples, grapes and papayas.

Tea is thought to be an important part of daily life for most, but not all, Indians; a bit more than 80% of the households had consumed tea leaves during the last 7 days. Expenditure on tea was about Rs.23 per person per month in rural India and a little under Rs.40 in urban India. Purchased ready-to-drink tea accounted for more than half of this expenditure in the ur-

ban sector and about 43% in the rural sector. Drinking cold beverages, mineral water and fruit juice seem to be urban phenomena, with very little significance in rural areas. Sweets and biscuits are popular, but even here more so in urban than in rural contexts. As mentioned above, these urban features may be taken as reflecting the globally recognisable dietary transition away from crude cereals and pulses towards processed foods - energy dense but with poor nutritional quality.

In order to get closer to the experience of food security among poor people, a survey has been conducted on the perceived adequacy of food consumption in Indian households (ref). A key question is whether people get two square meals a day, all year around, not in some months of the year, or not in any month.

Over the period 1993-94 to 2009-10, the all-India percentage of households reporting getting two square meals every day throughout the year has gradually increased from 94.5% to about 99% in rural India and from about 98% to 99.6% in urban India. The gap between the rural and urban percentages has narrowed appreciably. The proportion of rural households reporting not getting two square meals every day in any month of the year has dropped from 0.9% to 0.2% in rural India between 1993-94 and 2009-10, while the corresponding proportion of urban households has dropped from 0.5% to 0.0%. The proportion of rural households reporting not getting two square meals every day in some months of the year has fallen from 4.2% to 0.9% in rural India and from 1.1% to 0.3% in urban India over the 16-year period.

Table S2: Inter-State variation in perceived food adequacy (2009-10), major States

Sector	State	per 1000 no. of households getting two square meals every day				no. of sample households
		throughout the year	only some months of the year	in no month	all (incl. NR)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Rural	Andhra Pradesh	995	5	1	1000	3924
	Assam	987	12	1	1000	2616
	Bihar	979	11	8	1000	3294
	Chhattisgarh	991	10	0	1000	1495
	Gujarat	999	1	0	1000	1720
	Haryana	1000	0	0	1000	1440
	Jharkhand	996	2	0	1000	1758
	Karnataka	999	1	0	1000	2038
	Kerala	995	5	0	1000	2606
	Madhya Pradesh	991	4	0	1000	2734
	Maharashtra	995	2	3	1000	4012
	Odisha	960	39	2	1000	2974
	Punjab	996	4	0	1000	1558
	Rajasthan	998	1	0	1000	2575
	Tamil Nadu	1000	0	0	1000	3319
	Uttar Pradesh	993	6	0	1000	5908
	West Bengal	954	38	6	1000	3575
	all-India	**989**	**9**	**2**	**1000**	**59097**
Urban	Andhra Pradesh	998	1	0	1000	2951
	Assam	994	5	0	1000	832
	Bihar	993	5	0	1000	1270
	Chhattisgarh	1000	0	0	1000	736
	Gujarat	997	3	0	1000	1698
	Haryana	993	6	0	1000	1180
	Jharkhand	999	1	0	1000	990
	Karnataka	1000	0	0	1000	2037
	Kerala	995	4	0	1000	1845
	Madhya Pradesh	975	14	0	1000	1973
	Maharashtra	1000	0	0	1000	3984
	Odisha	989	5	6	1000	1055
	Punjab	1000	0	0	1000	1557
	Rajasthan	1000	0	0	1000	1551
	Tamil Nadu	999	0	0	1000	3320
	Uttar Pradesh	999	1	0	1000	3086
	West Bengal	987	8	1	1000	2749
	all-India	**996**	**3**	**0**	**1000**	**41697**

Table S2 shows that in rural India the percentage of households not perceiving themselves as getting adequate food throughout the year was 2.1% or less in all major states except West Bengal (4.6%) and Odisha (4.0%). In urban India the percentage of households reporting that they did not get enough food every day in any month of the year was 0.1% or less in every major state except Odisha. In Odisha, 0.6% of urban households belonged to this category, while 0.5% felt that they did not get enough food every day in some months.

According to Table S2, Bihar has a high number of households not getting two square meals around the year, 8 out of 1000 households, 11 per thousand in some months. This is much higher than the average for India. The most problematic months are February and July. In Karnataka, on the other hand, 1 in 1000 households do not get two square meals in some months of the year, none experience this every month.

Looking at the perceived adequacy of food in different types of household in rural India, the percentage of households perceiving themselves as not getting enough food every day throughout the year was 1.1% or less for all household types except agricultural labour

households (Table S3). Among agricultural labour households, 1.9% reported not getting enough food every day in some months and 0.2% reported not getting enough food every day in any month of the year. While Bihar does not have a particularly high proportion of households not getting enough food every day during some months of the year, the state has a high figure for households getting too little throughout the year, 5 in 1000. Compared to that, there are very few in Karnataka saying that they have too little food to eat during some months, 0,3 per cent, none throughout the year.

The problems of food adequacy are significantly more serious among some social groups, especially 'Scheduled Tribes' and 'Scheduled Castes (Table S5). In rural areas, the percentage of households reporting adequate food intake in only some months of the year was 1.8% for Scheduled Tribes, 1.3% for Scheduled Castes, 0.4% for Other Backward Classes, and 0.9% for 'Others'. We see similar tendencies in urban areas, but the problems are not of the same size. These patterns are found in Bihar and Karnataka as well and they are of the same serious order.

Table S5: Perceived adequacy of food across social groups, all-India

sector	social group	per 1000 no. of households getting two square meals every day				
		throughout the year	only some months of the year	in no month	all	no. of sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
rural	Scheduled Tribes	980	18	1	1000	9732
	Scheduled Castes	983	13	2	1000	10712
	Other Backward Classes	994	4	2	1000	22596
	Others	988	9	2	1000	16039
	all	**989**	**9**	**2**	**1000**	**59097**
urban	Scheduled Tribes	996	3	0	1000	3399
	Scheduled Castes	991	8	1	1000	5612
	Other Backward Classes	997	2	0	1000	15276
	Others	996	2	0	1000	17402
	all	**996**	**3**	**0**	**1000**	**41697**

3.2.3 The experience of food security in Indian households.

In order to get closer to the experience of food security among poor people, a survey has been conducted on the perceived adequacy of food consumption in Indian households (ref). A key question is whether people get two square meals a day, all year around, not in some months of the year, or not in any month.

Over the period 1993-94 to 2009-10, the all-India percentage of households reporting getting two square meals every day throughout the year has gradually increased from 94.5% to about 99% in rural India and from about 98% to 99.6% in urban India. The gap between the rural and urban percentages has narrowed appreciably. The proportion of rural households reporting not getting two square meals every day in any month of the year has dropped from 0.9% to 0.2% in rural India between 1993-94 and 2009-10, while the corresponding proportion of urban households has dropped from 0.5% to 0.0%. The proportion of rural households reporting not getting two square meals every day in some months of the year has fallen from 4.2% to 0.9% in rural India and from 1.1% to 0.3% in urban India over the 16-year period.

Table S2: Inter-State variation in perceived food adequacy (2009-10), major States

Sector	State	per 1000 no. of households getting two square meals every day				no. of sample households
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	Chhattisgarh	991	10	0	1000	1495
	Gujarat	999	1	0	1000	1720
	Haryana	1000	0	0	1000	1440
	Jharkhand	996	2	0	1000	1758
	Karnataka	999	1	0	1000	2038
	Kerala	995	5	0	1000	2606
	Madhya Pradesh	991	4	0	1000	2734
	Maharashtra	995	2	3	1000	4012
	Odisha	960	39	2	1000	2974
	Punjab	996	4	0	1000	1558
	Rajasthan	998	1	0	1000	2575
	Tamil Nadu	1000	0	0	1000	3319
	Uttar Pradesh	993	6	0	1000	5908
	West Bengal	954	38	6	1000	3575
	all-India	**989**	**9**	**2**	**1000**	**59097**
Urban	Andhra Pradesh	998	1	0	1000	2951
	Assam	994	5	0	1000	832
	Bihar	993	5	0	1000	1270
	Chhattisgarh	1000	0	0	1000	736
	Gujarat	997	3	0	1000	1698
	Haryana	993	6	0	1000	1180
	Jharkhand	999	1	0	1000	990
	Karnataka	1000	0	0	1000	2037
	Kerala	995	4	0	1000	1845
	Madhya Pradesh	975	14	0	1000	1973
	Maharashtra	1000	0	0	1000	3984
	Odisha	989	5	6	1000	1055
	Punjab	1000	0	0	1000	1557
	Rajasthan	1000	0	0	1000	1551
	Tamil Nadu	999	0	0	1000	3320
	Uttar Pradesh	999	1	0	1000	3086
	West Bengal	987	8	1	1000	2749
	all-India	**996**	**3**	**0**	**1000**	**41697**

Table S2 shows that in rural India the percentage of households not perceiving themselves as getting adequate food throughout the year was 2.1% or less in all major states except West Bengal (4.6%) and Odisha (4.0%). In urban India the percentage of households reporting that they did not get enough food every day in any month of the year was 0.1% or less in every major state except Odisha. In Odisha, 0.6% of urban households belonged to this category, while 0.5% felt that they did not get enough food every day in some months.

According to Table S2, Bihar has a high number of households not getting two square meals around the year, 8 out of 1000 households, 11 per thousand in some months. This is much higher than the average for India. The most problematic months are February and July. In Karnataka, on the other hand, 1 in 1000 households do not get two square meals in some months of the year, none experience this every month.

Looking at the perceived adequacy of food in different types of household in rural India, the percentage of households perceiving themselves as not getting enough food every day throughout the year was 1.1% or less for all household types except agricultural labour

households (Table S3). Among agricultural labour households, 1.9% reported not getting enough food every day in some months and 0.2% reported not getting enough food every day in any month of the year. While Bihar does not have a particularly high proportion of households not getting enough food every day during some months of the year, the state has a high figure for households getting too little throughout the year, 5 in 1000. Compared to that, there are very few in Karnataka saying that they have too little food to eat during some months, 0,3 per cent, none throughout the year.

The problems of food adequacy are significantly more serious among some social groups, especially 'Scheduled Tribes' and 'Scheduled Castes (Table S5). In rural areas, the percentage of households reporting adequate food intake in only some months of the year was 1.8% for Scheduled Tribes, 1.3% for Scheduled Castes, 0.4% for Other Backward Classes, and 0.9% for 'Others'. We see similar tendencies in urban areas, but the problems are not of the same size. These patterns are found in Bihar and Karnataka as well and they are of the same serious order.

Table S5: Perceived adequacy of food across social groups, all-India

sector	social group	per 1000 no. of households getting two square meals every day				
		throughout the year	only some months of the year	in no month	all	no. of sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
rural	Scheduled Tribes	980	18	1	1000	9732
	Scheduled Castes	983	13	2	1000	10712
	Other Backward Classes	994	4	2	1000	22596
	Others	988	9	2	1000	16039
	all	**989**	**9**	**2**	**1000**	**59097**
urban	Scheduled Tribes	996	3	0	1000	3399
	Scheduled Castes	991	8	1	1000	5612
	Other Backward Classes	997	2	0	1000	15276
	Others	996	2	0	1000	17402
	all	**996**	**3**	**0**	**1000**	**41697**

3.3 Poverty in India and the right to food.

Poverty and unemployment is the two sides of the same coin. Poor people do not have enough money to live a comfortable life. What is desired living of standard? At the very least, it must include physical and or basic needs to life. There are various models of poverty in use in the formulation of public policies (Sharma and Prakash 2013). The approach to poverty has a crucial impact on measurements of poverty as well as suggested and implemented solutions.

The Absolute Poverty Model involves an empirical determination of poverty line that equals the cost of minimum necessary quantities of the basic need such as food, clothing, which are required for the maintenance of physical efficiency (Rowntree 1901). According to this model, public policy should strive to ensure the minimum level of income. The concept has found favour with Indian bureaucracy.

The concept of poverty, encompassed in subsistence theory, is that there exists a minimum level of income at the prevailing prices of the goods required for physical survival below which starvation creeps in. Maintenance of physiological efficiency refers to such level of

consumption that is higher than the starvation level. Two meals a day needed for the total removal of hunger may be taken to represent the physiological efficiency (we must ask about this in our questionnaire).

This is contrasted to the *Basic Needs Model of Relative Poverty*. The idea of basic needs relates to the concept of basic or wage goods. The basic need model is adapted by UNESCO and the World Bank and goes beyond basic food involving services as health, education, water, sanitation, child and mother care services and public transportation for the masses. Supply of food at affordable prices involves dual pricing, public distribution and subsidized prices. This is changeable across cultures and times.

The third model of *Relative Poverty and Deprivation* stands out as quite different. Here the issue of poverty cannot be discussed without a "standard" or norm of comparison. Average standard of living is suggested as the norm in the assessment of incident and measurement of poverty, a model adopted for example in the Nordic countries. Average income represents the yardstick for measurements of poverty. According to this approach, relative poverty is impossible to eradicate from any economy (unless everybody has the same income). Also, relative poverty is being directly related to attained levels of socioeconomic development rather than any defined "poverty line".

The "Remove Poverty" programme was introduced in 1969, using NSSO data related to consumption expenditure. The reference model here is based on the Absolute Poverty Model. The Government of India periodically revises the criterion for the determination of poverty line for policy purposes. Below poverty line in India determined by the standards set by the Planning Commission before the High Court 2011 32 rupees per day in urban areas and 26 rupees per day in rural areas.

Consumption patterns, especially of food, changes differentially for different groups of poor. Unlike the consumption of self-produced food by farmers, whose nominal and real income rises with an increase in prices of items of food, other poor do not have such benefits from food inflation. Those on liberty line, having mortgaged their freedom to become bonded labourers, do not have access to benefit of growth in the form of increased income. Their condition worsens and in some cases they may even be below subsistence level.

According to The State of the Indian Consumer 2012, produced by CUTS, large proportions of the Indian population live below the poverty line. According to this statistics, the proportions have decreased somewhat over the last decade, but the numbers are still large, about 34 per cent in rural areas of India, 21 per cent in urban areas. The conditions in Karnataka are close to the national average, somewhat better in rural areas. This is contrasted to Bihar, where more than half of the rural population is living below the poverty line and there has not been any decline over the last years. Urban Bihar is slightly, but not much, better off.

Figur 3-1 Percentage of population under poverty line India including Karnataka and Bihar

	India		Karnataka		Bihar	
	2004-5	2009-10	2004-5	2009-10	2004-5	2009-10
Urban	25.5	20.9	25.9	19.6	43.7	39.4
Rural	42.0	33.8	37.5	26.1	55.7	55.3
Total	37.2	29.8	33.3	23.6	54.4	53.5

Source: CUTS (2012)

4 Food availability

The contents of this chapter will await contributions from work packages 1 and 2. We will also add former studies by and experience among our partners at IFPRI and CUTS. The main point in work package 3 is to focus on how the organisation and infrastructure of food provisioning influences food security at the household level, in urban and rural contexts.

4.1 Production and availability

India currently faces a variety of challenges in its agricultural and food system. Agricultural growth and rural development has lagged behind other sectors, with the current slowdown in Indian GDP growth necessitating a potential re-think on development poles that engage a broader base of the population. In particular, food value chains remain highly fragmented on account of inconsistent policy reforms that have varied markedly by state, and the fragmented nature of farms into small parcels has also caused agronomic inefficiencies and reduced on-farm marketable surpluses that are likely to increase household-level vulnerability (Mall et al 2006). The inability to harmonize reform across state borders militates against the creation of agglomeration economies that could increase the efficiency of the sector, lower food prices for the poor, and create employment in nascent, modernized food supply chains. Such reforms could further act as a buffer against the harmful impacts associated with climate change.

At the same time, little is known about the contextual and institutional drivers and governance mechanisms associated with on-going changes and the impacts of interactions between various policy initiatives. The Indian agricultural and food system is replete with various institutions and political interest groups that influence the uptake of reform. In other words, any analysis of the scope of policy reforms in view of Indians' food security should examine food value chains more holistically, highlighting not only the economics and logistics of these systems, but the socio-economic and institutional context in which they are governed, including resources and effects at the household level. Given the potential impact of climate change on food supply, the increasing role of trade policies in determining community food security, and the changing nature of socio-political consequences of food governance system (see eg O'Brien et al. 2004), the aim of this project is to explore the meso level linkages between macro level changes in climate, trade and politics on food security at the household level.

Strong emphasis has been put on improving the outputs from Indian food production. But the problems of food supplies are found as much in the lack of efficiency of the distribution systems and some agricultural policies seem to reinforce rather than counteract these problems. The Agricultural Produce Markets Committee (APMC) Act mandates that most agricultural products, including horticulture products, must be marketed through regulated markets (mandis). Critics claim that it hinders the development of vertical linkages between producers and buyers (processors, etc.), thus preventing a needed scaling up of agribusiness activities. Reforms of the APMC Act have been haphazard, with some states reforming at faster paces than others. At the same time, Reardon and Minten (2011) reveals what they term a "quiet revolution" in the food distribution sector, with an emergence of modern supermarkets, disintermediation and shortening of value chains, and an increase in the utilization of modern logistical

functions, such as cold storage facilities. Creating an efficient wholesale and retail system for agricultural trade is crucial for different purposes: It may eliminate monopsony power and affect the distribution of income; and it may reduce trading costs and thereby enhance efficiency and increase trade. Previous studies, e.g. FAO (2005), have demonstrated the need for efficient cold chains, to prevent that a large share of e.g. India's excellent mangoes that rot on their way to markets. The Indian government is also about to open the Indian market to international retailers[4]. This has been welcomed as a way to reform the food distribution logistics, which is said to cause major food waste, inefficiency with regard to answering changes in demand, and poor revenues for the farmers. However, the impacts of such reforms to retail, particularly the large number of small middle-men and shop keepers, requires further inquiry.

4.2 Minimum Support Prices (MSP)

The effects of the modernisation of Indian food distribution seems to be socially unequally distributed (Agarwal et al. 2009); Chatterjee et al 2012). Minimum support prices (MSPs) are implemented on a variety of agricultural products in order to alleviate food insecurity for the poor. But critics claim that it distorts producer incentives (particularly grain products), leaving government as the "buyer of last resort" and responsible for disposing and storing surpluses. Some of this grain is sold through the Public Distribution System (PDS) at subsidized prices to poor consumers, though there is significant evidence of leakages in the system. Often, this surplus grain lay in waste in government storage centres. In any case, the government's policy of buying high and selling low results in huge subsidy bills that are increasing annually. Questions have also been raised as to the system's efficiency in ameliorating food insecurity even for the most vulnerable (Dubey and Srivastav 2011; Jha et al. 2011). A number of other policy initiatives have recently been introduced in India addressing food security and distribution problems. The proposed National Food Security Law (2011) has aims in accordance with the FAO definition of food security[5]. But there is considerable controversy about the effects. While Amartya Sen defends the law despite its flaws, the Asian Human Rights Commission see it as a step back. Critiques have also been raised with regard to consequences for trade[6]. This debate once again illustrates the need to address specific institutional conditions when developing food security policies, including how the various types of entitlement interact and their overall effects on different population groups. In this regard, it is important to notice also that climatic conditions as well as food production and distribution systems and the implementation of public policies vary significantly between Indian states. In order to capture the specific conditions and institutional interrelations it is therefore crucial to address variations across specific states.

[4] http://online.wsj.com/article/SB10001424052970204630904577058131832465876.html
[5] http://nac.nic.in/foodsecurity/nfsb_final.pdf
[6] www.humanrights.asia/resources/journals-magazines/eia/eiav4n2/indias-national-food-security-act-entitlement-of-hunger, articles.economictimes.indiatimes.com/2012-01-10/news/30611842_1_food-security-law-gdp-growth-human-development, articles.economictimes.indiatimes.com/2011-12-20/news/30538157_1_food-security-bill-employment-guarantee-scheme-cash-transfers

5 Income and income based entitlements

When discussing the issue of food security, attention is often focused on agriculture and food availability. De-agrarianisation in India, however, points to the questions of how the diversification of livelihoods away from farming connects to the availability of decent work and the ability of individual households to secure their food needs from the market. The Indian economy has been growing at unprecedented rates during the tenth (2002-07) and eleventh (2007-12) Five-Year Plan periods, but it has, according to Mehrotha et al. (2013), been characterised by jobless growth and informalisation of jobs in the organised sector until 2010. However, NSS data from 2011-12 suggest a significant increase in non-agricultural employment. Even though agriculture still remains the mainstay of livelihood for about half of the Indian workforce, the share of agriculture in total employment has fallen from 57 per cent in 2005 to 49 per cent in 2011-12 (Mehrotha et al 2013:88).

In the following chapter we will present the Indian employment structure with a focus on the non-agricultural employment, and discuss the implication of the structural changes on food security. This will be supplemented with income and expenditure data from the NSS 66th round in order to illuminate the income and expenditure situation of the poor.

5.1 Employment structure

In India, the share of agriculture and allied activities in gross domestic product (GDP) has declined from 33 per cent in 1990-91 to 14 per cent in 2011-12 (Mehrotra et al. 2013; Thomas 2014). Even though the share of agriculture in total employment has declined over the same period, the decline in the agriculture's share of GDP is not directly reflected in the employment structure. Between 2004-05 and 2011-12, total non-agricultural employment in India increased by 48 million. Jobs in construction accounted for half of this increase. Other sectors with minor increase were manufacturing; trade, repairs, hotels; and financing, insurance and business services (Thomas 2014:16-17). Industry is also an employment intensive sector. While industry increased its share of GDP by only 2.8 percentage point during the period from 1972-70 to 2009-10, it gained over 10 percentage points of share in employment (Aggrawal and Kurmar 2012:31).

Still, according to Pritchard et al. (2014:93), results from the NSS 61st round indicated that the growth of India's economy was not translating into a substantial formalisation of employment which commensurate improvements in working conditions and wages. Rather the proportion of workers in India defined as being in informal employment increased from 91.2 per cent in 1999-200 to 92.4 per cent in 2004-05. In construction, where it has been a substantial increase in employment, as much as 98 per cent are informally employed (Mehrotra et al. 2013). This informalisation is an important issue for poverty reductions and food insecurity in India because of its lower wages and more precarious employment conditions (e.g. Aggrawal and Kumar 2012). The earnings of regular workers "have increased faster than

those of casual employees in both rural and urban areas and the gap has been widening" (Aggrawal and Kumar 2012:52)

While an increasing share of the rural population has become increasingly dependent on finding new sources of livelihood outside the farm sector, the process have been socially uneven. In rural areas, there has been growth in non-agricultural activities such as construction, services and trade which can partly be attributed to state sponsored employment programmes like MGNREGS (Aggrawal and Kumar 2012:33; Thomas 2014:16). However, these opportunities are of temporary and casual nature and have become a major source of casual employment. According to Pritchard et al. (2014:98) poorer and more vulnerable households are generally being exposed to greater need to diversify their livelihood and they are being less well placed and equipped to do this. Jatav (in Pritchard et al. 2014:96) claims that increases in the incidence of casualization are strongest among ST and SC populations, and in relatively disadvantaged and remoter parts of the country including central Uttar Pradesh, most of Madhya Pradesh, central parts of Bihar etc. Pritchard et al. (2014:84) also claim that economic- and employment opportunities in village life in India often are orchestrated by livelihood gatekeepers like Gram Panchayat presidents (Sarpanch), large landowners and moneylenders, whose preferences and interests are closely connected to caste and community.

5.2 Incomes and expenditures of the poor.

This section presents the mail findings of the NSS 66th round of consumer expenditure survey (2012) relating to incomes and expenditures of the poor. In 2009-10 27 per cent of rural households were agricultural labour households and 31 per cent were self-employed in agriculture. 15 per cent were self-employed in non-agriculture sector, and 15 per cent were characterized as having "other labour". 11 per cent were characterized as "other". In urban India about 36 per cent of the households were self-employed and 38 per cent were regular wage/salary earning households. 13 per cent were characterized as having "casual labour", while 13 per cent were characterized as "other labour". Findings from the NSS 66th round, presented in table X, illustrates the gap in working conditions between regular workers and others (mainly self-employed and casual workers). Non-regular work arrangements cause vulnerability among certain groups of workers (Aggrawal and Kumar 2012:33).

Table 1: Working conditions for all workers. Table from Aggrawal and Kumar (2012:34).

	All		Regular	
Benefit	Rural	Urban	Rural	Urban
No written Job contract	81	74	60	65
Temporary Nature	52	42	32	33
No Paid leave	80	60	50	46
No social security benefit	82	64	57	53
No Labour union in all	82.5	65.6	54.7	59.6

Source: NSS report on informal sector and employment conditions, 2011

Regarding income for all-India the rural average of income was Rs.1054, while the urban average was Rs.1984. Average monthly per capita expenditure (MPCE) among rural household types is highest for the category 'others' (Rs.1557), followed by the 'self-employed in

agriculture' (Rs.1111) and the 'self-employed in non-agriculture' (Rs.1102), 'other labour' (Rs.968) and 'agricultural labour (Rs.828).

The relative positions of the five rural household types in terms of average MPCE followed the all-India pattern in most major states. Inter-household-type variation in average MPCE appeared to be smallest in Bihar and Jharkhand. In the two major states with the highest average rural MPCE levels – Kerala and Punjab – the 'self-employed in agriculture' had a higher average MPCE than the 'others' category, while in a third high-rural-MPCE state, Haryana, the MPCEs of the two categories were very close. The dominance of the 'others' category over the rest was most marked in rural Andhra Pradesh and, to some extent, in Tamil Nadu.

At the all-India level, rural MPCE increases rapidly with the increase in size of land possessed beyond one hectare, though it decreases marginally with the increase in size class of land possessed up to one hectare (no doubt due to the greater proportion of households with other sources of income among those possessing very little or no land than among those possessing some land less than 1 hectare). Small farms with less land than 1 hectare are not sustainable, and farmers with less than 1 hectare are often among the poorest. Households possessing more than one hectare of land accounted for around 25per cent of the rural population at all-India level. Average MPCE is highest (Rs.1438) in the highest size class of (> 4 hectares), indicating a strong positive association between MPCE and land possessed (excluding the < 1 hectare range).

The average MPCE for rural Bihar was Rs.780, while the average for urban Bihar was Rs.1238. In rural Bihar, less than 5 per cent are estimated to belong to Scheduled Tribes (ST) while more than 50 per cent are estimated to belong to Other Backward Classes (OBC). The same pattern accounts for urban Bihar. For rural Karnataka the average MPCE was Rs.1020, for urban Karnataka Rs.2053. In rural Karnataka no social group are estimated to consist of less than 5 per cent or more than 50 per cent of the total population. In urban Karnataka less than 5 per cent are estimated to belong to Scheduled Tribes (ST).

In rural India, the average monthly per capita expenditure (MPCE) was Rs.873 for scheduled tribes (ST), Rs.929 for scheduled castes (SC) and Rs.1036 for other backward classes (OBC). In urban India it was Rs.1797 for ST, Rs.1444 for SC, and Rs.1679 for OBC. The average MPCE of 'Others' at all-India level (Rs.1281 in rural and Rs.2467 in urban) was more than the all-groups average in both sectors. Figure 3.8R and 3.8U depicts the all-India distribution of population in each social group over these (decile classes of the sector-State/UT/All-India level distributions of MPCE for the entire population) MPCE classes by means of line diagrams. The MPCE distribution of the 'all' category is a horizontal line, while the lines for ST and SC are downward-sloping (percentage of population in an MPCE class falls – more steeply in case of ST in rural areas – as one moves from lower to higher classes), the 'others' line is prominently upward-sloping, and the OBC line is downward-sloping for the urban sector but fairly horizontal for the rural.

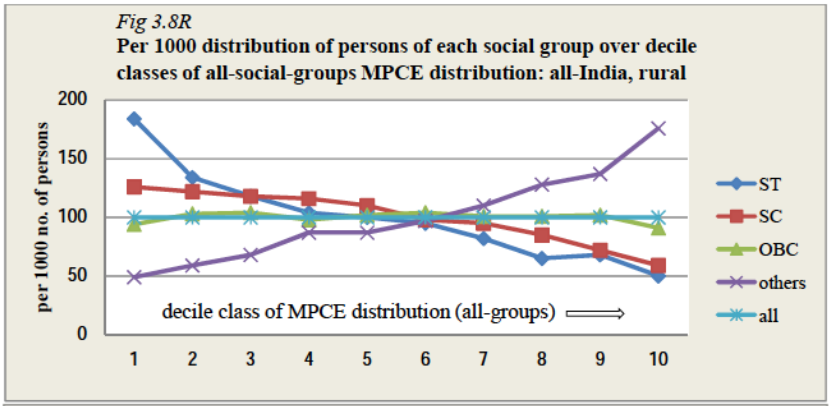

Fig 3.8R
Per 1000 distribution of persons of each social group over decile classes of all-social-groups MPCE distribution: all-India, rural

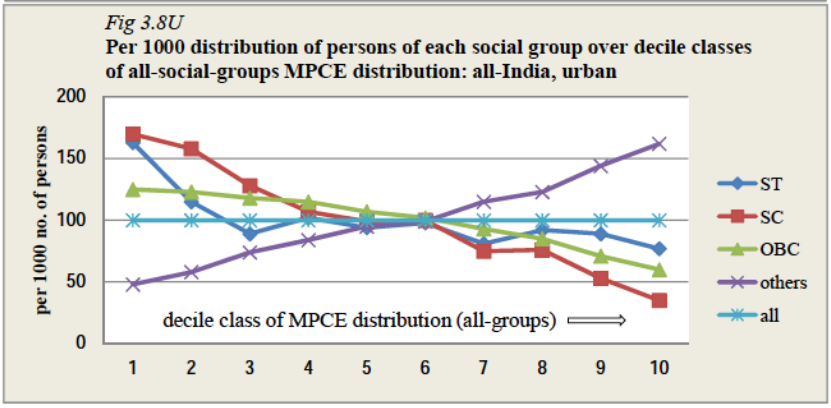

Fig 3.8U
Per 1000 distribution of persons of each social group over decile classes of all-social-groups MPCE distribution: all-India, urban

The categories with relatively high average MPCE (such as the social group others) are seen to have a greater share of their consumer expenditure allocated to non-food. The share of non-food varies, in fact, over social groups from 40 per cent for the ST group to 45 per cent for others in the rural sector and from 51 per cent for SC to 58 per cent for others in the urban sector. Among rural households cereals accounted for 16% of consumer expenditure for 'agricultural labour' households, 10 per cent for 'others', and 14 per cent for the other three household types. Among urban households 'casual labour' households spent 12 per cent of their consumer expenditure on cereals, the self-employed spent 9 per cent, the 'regular wage/salary earning' spent 7 per cent, and 'others', only 5 per cent. These numbers illustrate that both ST and SC household as well as agricultural labour and casual labour households are more vulnerable to food price inflation and more susceptible to being food insecure than other households.

6 Own production

Agriculture continues to be the primary means of livelihood for 58 per cent of the Indian population, including many of the country's poorest and most vulnerable (Pritchard et al, p 61). Large sections of the Indian population rely primarily on what they can produce on their own plot of land, either owned or rented. Such "own production" systems include growing crops, tending livestock, and catching, hunting and gathering foods. But, as demonstrated in a case study in the Himalayan region (Tiwari and Joshi 2012), many depend on a combination of own provisions and additional income from selling surplus food or other sources. Own production should therefore be analysed as part of the bundle of entitlements rather than a separate alternative in the form of self-sufficiency or, conversely, only as a source of income. The effects of changes in food prices and better marketing systems may improve conditions for some, while increasing the vulnerability for others. In any case, through their variable kinds of dependencies on agricultural output; through self-provisioning, marketing of agricultural products, or wage labour, they are vulnerable to climate change like erratic rainfalls.

6.1 The significance of self-provisioning

About 30.4% of total cereal consumption and 10.6% of total pulse consumption in rural India in 2009-10 came from home-grown stock. There is a clear tendency of declining proportions. For rice, the share of home produce in quantity of consumption fell from 30% to 25%, and for wheat/*atta*, from 40% to 37% between 2004-05 and 2009-10. Even for most of the pulse varieties the share of home produce dropped quite sharply: by about 3-5 percentage points (from 13-18% in 2004-05) for arhar, split gram, moong and urd. For milk, the share of home produce has dropped by about 3 percentage points since 2004-05 to about 59%, though the percentage of households reporting home consumption of milk among those reporting any milk consumption is only a little more than 33%

Table S8-1 indicates considerable variations across the Indian states. Concentrating again on our two selected states, the figures for self-provisioning are clearly higher in Bihar compared to Karnataka. Of the total quantity of cereals consumed, 30.6% was home-grown in Bihar, 18.3% in Karnataka. Only self-provisioning of milk is of some significance in Karnataka – 36.3%, compared to 48.0% in Bihar. Similar patterns are observed for vegetables (see Table S8-2 in Annex I). Only coconut breaks the pattern, with 29.9% home production in Karnataka, compared to 0.7% in Bihar.

Self-provisioning is no indication of sufficiency. On the contrary, it may indicate a lack of alternative entitlements and thus, for some – or many – a situation of food insecurity. At the regional and local level we therefore need to combine such information with data on sufficiency during the whole year, parts of the year or not at all (see data and discussion in Chapter 3 of this paper). The International Food Policy Research Institute (IFPRI) argues that there is a "agriculture-nutrition disconnect" in India, where agriculture seems to provide a weak engine for vulnerable people to improve their food security. In particular, reliance on own-

production creates dependencies that can be extremely problematic in cases of crop failure or during non-harvest ("hungry season") periods (Pritchard et al p 62).

The sufficiency of own production is obviously a matter of the size of the plot, but even its fertility, factors affecting output (water in particular), and, for those who rent, the character of the contract will have impacts.

Table S8-1: Major states (rural): percentage share of home-grown stock in quantity consumed in 2009-10: selected cereals and pulses, milk, eggs and chicken

State	percentage of consumption (quantity) coming from home-grown stock								
	rice	wheat	total cereals	arhar	urd	gram (whole)	milk	eggs	chicken
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
AP	7.9	1.6	8.6	6.1	1.5	0.0	19.8	0.8	0.6
ASM	52.1	0.4	49.3	0.0	6.3	0.0	75.4	55.4	40.1
BHR	30.8	31.8	30.6	27.2	1.2	12.5	48.0	10.1	9.2
CTG	31.8	11.8	30.7	12.9	31.9	5.9	46.5	0.7	33.3
GUJ	11.7	26.9	29.1	21.1	35.4	18.2	62.9	21.3	30.8
HAR	27.7	42.7	41.4	0.0	0.7	8.1	73.7	5.5	0.0
JHK	31.5	3.5	24.3	9.9	66.7	1.7	56.1	32.7	26.4
KTK	9.0	7.4	18.3	16.7	1.4	5.8	36.3	1.6	2.5
KRL	1.9	0.0	1.6	0.0	0.0	0.0	14.0	16.3	3.0
MP	24.5	43.9	42.2	29.8	49.4	62.0	70.3	17.7	12.4
MAH	18.4	16.2	21.9	26.2	16.9	14.2	34.8	8.1	2.8
ODS	33.9	0.1	31.8	2.1	32.8	4.5	45.5	12.7	33.6
PUN	23.8	32.6	31.3	0.0	1.4	0.3	61.6	11.9	0.0
RAJ	6.7	36.8	38.8	25.0	15.0	35.0	82.3	9.2	0.0
TN	5.1	0.0	4.9	0.1	1.3	0.0	12.3	2.1	3.5
UP	40.2	51.5	47.0	14.9	14.4	23.2	69.4	2.8	3.0
WB	23.1	1.0	19.8	8.7	6.2	8.5	43.9	11.6	4.0
IND	**25.1**	**37.0**	**30.4**	**14.8**	**13.2**	**13.6**	**58.8**	**11.7**	**8.7**

6.2 Structural features of Indian agriculture[7] and its impacts on self-provisioning

In his 'History of India', Robb (2011, p.259- 309) describes the structural changes that have taken place in Indian food production. India does not seem to be characterised by the common division between large properties with intensive, export oriented agriculture, on the one hand, and small, poor and marginalised farmers, on the other. Instead, immense complexities and interdependencies have remained throughout the modernisation of Indian agriculture. According to Robb, the huge expansion of agricultural exports depended on landlords and other intermediaries who used share-cropping, traditional labour-dues and caste prestige to capture and subjugate the cultivators. This benefited the capitalists but also marked a limit to their ability to enforce changes in landholding, peasant priorities and agricultural methods. "These intermediaries, and advance payments for goods and services, may have been crucial

[7] Estimation of land ownership patterns in rural India is subject to complexities in definition and measurement. The concept of "operational holdings" provides a catch-all mechanism to aggregate all land which farmers either won, have long-term rights over, lease-in (including encroached lands to which there is no formal title), and otherwise possessed land (Pritchard et al 2013, 77).

to the nature of the economy in India, by restricting the availability of capital and labour and by reducing indigenous demand." (260) Thus, paradoxically, even populations heavily committed to export production might have to rely on household production, barter and casual gathering of work or food to meet their needs for food, clothing and shelter. Little has been done to build the all-important internal market for manufactured or agricultural produce, f ex by providing secure incomes to ordinary farm-workers rather than intermediaries, or by achieving adequately paid and efficient employment for the masses flocking into towns (Robb 309).

Therefore, in considering the question of ownership and access to land, various forms of dependencies must be analysed. Robb distinguishes between four types of workers; owner-occupiers, share-croppers, field-workers, and contract (plantation) labourers. But these are not clear-cut divisions. There has been a tendency for poor cultivators to be obliged to produce commercial crops for inadequate returns (Robb, 285), thus increasing their insecurity of income and/or food. Moreover, access to land is not at all synonymous to independence and freedom from coercion. Most producers seem to give up their surplus to landlords, village heads or moneylenders, rather than taking it to market themselves.

There are also large groups of landless. Traditionally, there used to be large groups providing services to particular landed households or to a community. According to Robb (277), this group has been reduced. Other groups have grown, with a tendency of work becoming more casualized. Many are regular or casual farm-workers recruited by land grants (as share-croppers), by advances and loans, or by wages in cash or kind. But even more vulnerable are the growing numbers of temporary migrants and casual workers.

According to Rawal (2008), data from the NSSO (the National Sample Survey Organisation) indicate than more than 40 per cent of households in rural India do not own land. At the other end of the scale, 15 million acres is in ownership holdings of more than 20 acres. Inequality in ownership worsened between 1992 and 2003-4.
From the perspective of self-provisioning it is important to find out whether any food is produced at all. The statistics (although problematic according to Rawal) indicates that some of those not having access to agricultural land through ownership or as tenants; still do produce some food in kitchen gardens etc. The proportion of landless not having kitchen gardens and the like is similar in the two states, also close to the Indian average – about 40% of the landless households. But almost as many do not cultivate any land of their own at all.
But even those farming very small plots are vulnerable. Landowners with holdings less than 1 hectare are considered "marginal" (Pritchard et al 64). In Karnataka, the proportion of rural households owning land of a size less than 1 hectare is 40.5%, in Bihar the proportion is even higher, 58.6%, according to the NSSO statistics (Rawal 2008). There are more households owning large plots of land (more than 10 hectares) in Karnataka (0.72%), compared to Bihar (0.13%). These large landowners hold 11.4% of the land in Karnataka and 4.7% in Bihar. Taken together, the Gini coefficient of ownership holding of land is very high in both states; 0.72 in Karnataka and 0.76 in Bihar, respectively. These figures are close to the Indian average. The proportion of "marginal" landholdings has increased significantly over the last decades and the average sized of these small plots has also decreased (Pritchard et al 64).
Moreover, while there is a tendency of small plots to be more productive, the intensified demand for land means that the holdings of an individual household become non-contiguous and fragments, contributing to a weakening efficiency and productivity (Pritchard et al 66).

6.3 Smallholders and the food market.

Apart from self-provisioning, ownership to land may represent a source of income through the marketing of their agricultural products, either representing the surplus after own needs

have been fulfilled or all of the production. This point to the relationship between cash spent on buying food versus cash earned from producing food. Analyses of NSSO data suggest that an Indian farm household requires at least 4 hectares of cultivated land to meet all their consumption requirements through farming (Bhalla 2012, Pritchard et al 2013 p.67). Thus, from the statistics presented above we see that the large majority and growing proportions, of the rural population do not have sufficient land.

This situation has turned most rural households into net food buyers. A recent study indicates that 74 per cent of rice smallholders in India are net food buyers (de Janvry and Sadoulet 2012). This question is especially pertinent because of its ramification for smallholders of the recent years' price fluctuations and inflation. Generally, higher prices are expected to have a positive effect on rural households by giving higher incomes and by stimulating production. But for households that are net food buyers, the effects on welfare and food security are negative (Pritchard et al 2013, 67). Additional costs of buying food at local shops and markets exceed any additional income these households receive from the sale of their agricultural production.

Even if smallholder net-food-buying households wish to "produce their way out of trouble" there are substantial institutional barriers, such as access to credit, access to additional land, middlemen and logistics limiting marketing opportunities and payments, etc. Thus, taken together, the reduction in smallholding size seems to generate what Pritchard (2013, 67) a "food security trap" for households.

The overall food production is sufficient to feed the Indian population. Yet, large majorities of the Indian rural population are dependent on marketed food (through commercial and/or publicly regulated channels), either because they do not own or have access to land they can cultivate or their plots are too small to ensure food security through self-provisioning. Even many of those who do sell some or all of their produce are net food buyers because their incomes from agriculture are not sufficient.

7 Social security system

According to Drèze and Sen (2013:183) it is hard to think of any important aspect of poor people's lives in a country like India that does not depend in one way or another on public policy, and especially on what is often called "social policy". Food policy programmes and adjacent social security programmes are therefore crucial for the capacities of India's poor to meet their food and nutritional needs. However, because of the varying effectiveness and the gaping holes in these food-based social safety nets they are also criticized for perpetuating food insecurity for far too many of India's poorest and most vulnerable people (Pritchard et al. 2014). In fact, a recent study show that between 1993 and 2012 disparities across social groups have increased involving a widening of the average consumption shortfall of the scheduled tribes, a decline for the scheduled castes, marginal decline for Other Backward Classes and an increase in the excess of average consumption of Other Social Groups. Thus the relatively deprived groups, STs and SCs, have been left out of the growth process and the OSGs perform the best (Suryanatayana & Das 2014). So, the observed dependence on social policy measures, despite their inefficiencies, is not because the state is so pervasive, but because poverty and social inequality is so vast and persistent.

The past few years have witnessed intensified debate about the performance and future of India's food-based social security systems. The essence of the debate has been centred on two important questions: who should be guaranteed a right to food, and how should this right be managed? (Pritchard et al. 2014). There has both been agendas to curtail and delimit households' access to programs in order to better target resources for those in most need, and agendas to widen the entitlements irrespective of needs-based criteria and thus to develop universalist social security systems.

The Government of India and its constituent states and territories operate a series of programs with the goal of seeking to ensure the food needs of its population. The centrepiece of this policy area is the Public Distribution System (PDS), and it is supplemented by various additional programs like the Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS), the Integrated Child Development Scheme (ICDS), the Mid-Day Meal Scheme (MDMS), and the National Nutritional Mission (NNM).

In the following chapter we will briefly present and discuss these social security programmes and the recently adopted national food security act. When discussing the PDS system, we will present recent data from the NSS 66th round of consumer expenditure relating to PDS and household consumption, and the differences between our selected states, Bihar and Karnataka.

7.1 The Public Distribution System and household consumption

The PDS is the largest welfare program operated by the government of India. According to Pritchard et al. (2014:108-109) the Government of India and its constituent states procured 35 million tonnes of rice and 28,3 million tons of wheat from farmers during 2011-2012. This

represented around one third of the total national production. 91.9 per cent of the rice and 60 per cent of the wheat was then disbursed though the PDS. The operating cost of the PDS for 2012-2013 is estimated at Rs 638 billion, which represents the approximate equivalent of 0,7 per cent of Indian GDP. So, this is very significant for the Indian food provisioning system, but not for the Indian economy as a whole. According to CUTS International (2012: 18-19) the food subsidy in India has increased nearly seven times in the eleven year period from 2000-02 to 2011-12.

Initially, the PDS was started in the 1960s in the context of widespread food shortages. It was operated as an instrument of price stabilization without reference to poverty alleviation (Dubey & Srivastav 2011). It was during the 1980s that the PDS assumed the role of welfare instrument to supply essential items at nearly half the market price. In most parts of the country, the PDS was made universal in principle, and all households with a registered residential address were entitled to essential items at subsidized prices. However, casual labourers, migrant workers and those without proper residential address were not covered. In 1997, the PDS was revamped and converted into a system subject to principles of relatively narrow targeting and labelled the Targeted PDS. This reform was executed through the development of income criteria to demarcate "poor" and "non-poor" households, and each household were given PDS cards which specified their entitlements according to three groups: Above Poverty Line (APL), Below Poverty Line (BPL) and Antodaya Anna Yojana (AAY) (usually referred to as the poorest of the poor) (Pritchard 2014: 109). Now, state governments were responsible for defining the price subsidies, volumes of food permissible for each household and the range of items covered by the scheme.

One main critique of the system is that regardless of what the state governments legislate in terms of the PDS, all too frequently it has been the case that intended beneficiaries have not been aware of their entitlements or have not been able to reach the fair price shops though which the food is sold (Pritchard et al. 2014; CUTS International 2012:25). Another main critique of the PDS system is the significant leakages in the system, but recent NSS data indicates that this may be improving. According to Khera (2011:109) the effectiveness of the PDS deteriorated starkly between 1999-2000 and 2004-05, with total leakages increasing from 24 per cent to 54 per cent of the total PDS supply. However, from 2004-05 until 2007-08 the leakages has fell from 54 per cent to 44 per cent. Still, significant state variations exist, and the varying state performance seem to be linked to governance. Bihar, a state that is situated in the bottom rung in Indian human development, exhibited extremely high rates of diversion and barely any progress. From 2005-05 to 2007-08 the leakage rate in Bihar shifted from 91 per cent to 90 per cent of total stocks. A third main critique of the system is the accuracy to which households are allocated to the appropriate card category. A thorough impact evaluation study conducted by the Planning Commission (2005) found that large a number of potentially BPL households were incorrectly classified as APL households. (Pritchard et al. 2014:112). The shortcomings of the PDS system and its limited efficiency have been used as an argument for replacing the food subsidies with cash transfers. Others maintain that despite its inefficiencies PDS is still necessary in order to distribute food to the poorest.

7.1.1 The Public Distribution and household consumption.

This section presents the main findings of the NSS 66th round of consumer expenditure survey relating to a) the incidence of consumption out of purchase from the Public Distribution System and consumption from all other sources, for four commodities: rice, wheat/*atta*, sugar and kerosene; and b) the share of purchase from the Public Distribution System in consumption of rice, wheat/*atta*, and sugar. In addition to kerosene, these commodities are included in the PDS system in all states. Some States/UTs also distribute additional items of mass consumption through the PDS outlets such as pulses, edible oils, iodized salt, spices, etc.

The contribution of PDS purchases to total consumption in 2009-10 shows a considerable rise compared to 2004-05, particularly for rice and wheat/*atta*. The PDS share in rice consump-

tion in 2009-10 was about 23.5% in the rural sector (1.41 kg out of 6.00 kg per person) and about 18% in urban households (0.81 kg out of 4.52 kg per person). This is up from a PDS share in rice consumption on about 13% in the rural sector and 11% in the urban in 2004-05. For wheat/*atta* the share of PDS in 2009-10 was about 14.6% (0.62 out Of 4.25 kg per person) in the rural sector, double of what it was in 2004-05 (7.3%), and about 9% in the urban sector, compared to only 3.8% five years earlier. PDS purchases accounted for 14.7% of consumption of sugar in 2009-10 compared to 9.6% in 2004-05 in the rural sector, and for 10.3% compared to only 6.6% in the urban sector. For kerosene, too, the contribution of PDS purchase was higher in 2009-10 than earlier, by about 9 percentage points in the rural sector and 7 percentage points in the urban sector.

The percentage of households reporting consumption of rice from PDS during a 30-day period increased from 24.4% to 39% in rural India and from 13% to 20.5% in urban India. For wheat/*atta*, the increase in the percentage of households reporting consumption from PDS was even sharper: the percentage increased two-and-a-half-fold from 11% to 27.6% for rural India and threefold, from 5.8% to 17.6% for urban India. For sugar, too, the percentage of households reporting consumption has increased noticeably – from 15.9% to 27.8% for rural India and from 11.5% to 18.7% for urban India. For kerosene, the percentage of households reporting consumption from PDS rose noticeably in the rural sector by 9 percentage points but remained stable in the urban sector.

As expected, the contribution of consumption from PDS purchases to quantity consumed was, in case of each commodity, highest for the bottom expenditure class (MPCE decile class) of the population and fell gradually with rise in expenditure level. This decline, which is steeper for the urban sector, is largest as one move from the lowest decile class to the next and is very little for kerosene in the rural sector.

Table S3-1 gives percentage of households reporting having consumed rice from PDS and from other sources, share of PDS and (for rural) of home produce in quantity consumed (*considering all households, including those with zero PDS consumption*) and the unit value of consumption from PDS and from other sources, for the major States and India, separately for rural and urban sector. We concentrate here on our two selected states, Bihar and Karnataka. The proportion of households having consumed PDS rice was significantly larger among rural compared to urban households. However, the difference between the two states is much more significant; while 74.6% of rural households in Karnataka had consumed PDS rice in the last 30 day period, the figure was only 12.2 per cent in Bihar. This difference is also reflected in the quantities consumed, where 45 per cent of the rice came from PDS in rural Karnataka, 5.1 per cent in Bihar. One major reason seems to be the price difference, with rural Karnataka inhabitants having paid 3.22 Rs per kg for PDS rice, while rural Biharians had paid on average 6.01 Rs/kg. These rural dwellers had to pay many times more in the ordinary market; 20.38Rs/kg in Karnataka, 15.05Rs/kg in Bihar. The share of home produce is much larger in urban Bihar than in urban Karnataka.

Table S3-1: Rice: percentage of households reporting consumption from PDS and from other sources; share of PDS and (for rural) of home produce in quantity consumed; and unit value of consumption from PDS and from other sources: major States

State	% of hhs reporting consumption in a 30-day period from				% of quantity consumed coming from			unit value (Rs./kg) of consump-tion from PDS		unit value (Rs./kg) of consumption from all other sources	
	PDS		all other sources		PDS		home-grown stock				
	R	U	R	U	R	U	R	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Andhra Pradesh	83.9	42.7	93.0	88.4	32.9	21.5	7.9	2.02	2.04	20.51	26.28
Assam	29.8	12.1	98.4	97.8	11.2	5.1	52.1	7.36	8.14	16.87	18.92
Bihar	12.2	4.2	98.6	95.1	5.1	2.2	30.8	6.01	6.63	15.04	16.79
Chhattisgarh	67.4	34.7	84.8	85.2	41.2	25.7	31.8	1.97	2.06	15.17	21.31
Gujarat	33.8	8.3	85.6	94.0	20.3	5.8	11.7	4.10	3.58	21.02	25.15
Haryana	0.4	0.5	79.1	92.3	0.5	0.4	27.7	9.47	7.78	20.57	25.68
Jharkhand	26.4	8.6	95.0	89.3	14.0	7.4	31.5	4.58	6.07	14.98	18.07
Karnataka	74.6	24.8	69.8	82.1	45.0	17.7	9.0	3.07	3.22	20.38	27.00
Kerala	54.3	42.5	90.0	86.0	27.9	24.0	1.9	5.15	6.22	20.44	21.43
Madhya Pradesh	23.0	8.5	76.6	85.2	20.1	8.3	24.5	4.96	4.90	15.50	19.70
Maharashtra	46.8	10.0	69.2	88.0	34.2	7.5	18.4	6.28	8.02	18.40	25.17
Odisha	51.6	18.9	90.3	86.3	24.8	13.3	33.9	2.03	2.63	13.20	15.37
Punjab	0.1	0.1	79.6	91.3	0.1	0.1	23.8	20.00	13.33	22.16	24.61
Rajasthan	0.2	0.1	50.9	74.1	0.3	0.2	6.7	15.00	20.00	23.78	26.93
Tamil Nadu	91.0	67.0	86.5	86.2	52.7	40.9	5.1	1.03	1.02	20.33	26.15
Uttar Pradesh	21.1	5.8	87.1	89.7	17.6	7.8	40.2	4.85	5.14	14.61	18.94
West Bengal	25.7	6.9	98.4	93.5	6.3	2.9	23.1	2.83	3.63	16.07	19.75
all-India	**39.2**	**20.6**	**84.7**	**87.4**	**23.5**	**18.0**	**25.1**	**3.47**	**3.05**	**16.72**	**22.78**

Even though different dietary patterns must be recognised here, with rice being somewhat more significant in Karnataka, compared to Bihar, these differences also suggest diverging public policies, in terms of scope as well as implementation. This is supported by the observation of very similar patterns for wheat distributed through the PDS system, a cereal that is of much larger significance in Bihar than in Karnataka (see table S4-1 in Annex I). Even though of somewhat less importance quantitatively, we also find these different patterns for sugar.

7.2 The Mahatma Gandhi National Rural Guarantee Scheme (MGNREGS).

MGNREGS is a job guarantee scheme which emanated from the Mahatma Gandhi National Rural Employment Act (MGNREGA), and it is often just referred to as "NREGA". It was launched for the poorest 200 districts in 2006 and was later, in 2008, expanded nationwide (Pritchard et al. 2014). The program aim is to improve the employment opportunities for the rural poor, and even though it is not directly a food-based social safety net it has a vital role in food security. The program guarantees 100 days of employment a year to at least one household member who is willing to perform unskilled labour. The administration of the program is highly decentralised, with open village meetings (Gram Sabhas) being responsible for the identification of suitable projects and with local government institutions (Gram Panchayats) having a central role in the planning and implementation of the program (Dutta et al. 2012). In the 2010-11 fiscal year, the MGNREGS employed 55 million households who put

in 2,5 billion work days on 5,1 million projects, financed by a budget of Rs 394 billion (Liu and Barrett 2013:46). More than half of all participants were women (Pritchard et al. 2014:114).

According to Jha and Gaiha (2012) the performance of the NREGS has been disappointing and, if anything, has deteriorated over time. NSS data on average number of days of employment per household (only available for nine months) in 2009-10 and 2011-12 shows that the all-India average has decreased from 46.83 average person days in 2009-10 to 30 in 2011-12. The number has decreased also for Karnataka with 50 average person days in 2009-10 to 30 days in 2011-12. For Bihar, 2009-10 numbers were 27.55[8], and the number for 2011-12 was 31. For the country as a whole, the percentage of households completing 100 days of employment (data only available for nine months) went up sharply from 7.08 in 2009-10 to 32 in 2011-12. However, across the states the median was only slightly higher (0.15) in 2011-12 compared to 2009-10. In Karnataka the number decreased sharply from 9 in 2009-10 to 1.9 in 2011-12. The numbers for 2009-10 in Bihar were not reported, and the number for 2011-12 was5.89 (Jha and Gaiha 2012:19). Jha and Gaiha (2012:21) points to corruption at all stages, uneven project activity and inefficient local officials as explanations of the limited success of MGNREGS. Still, according to Dutta et al. (2012), even though there are considerable unmet demand for work on the scheme in all states, and more so in the poorest states where it is needed most, the MGNREGS is reaching the rural poor and backward classes and is attracting poor women into the workforce.

7.3 Programmes for nutritional support

7.3.1 Integrated Child Development Scheme (ICDS)

The ICDS is a program that target children under the age of six, every pregnant or lactating women and girl children up to adolescence. It was launched in 1975 with the objectives of improving the nutritional and health status of children under the age of six, to lay the foundation for proper development of the child, to reduce the incidence of mortality, morbidity, malnutrition and school dropout and to enhance the capability of the mother to ensure health and nutritional needs of the child. These objectives are sought to be achieved through a package of services comprising of supplementary nutrition, immunization, health check-up, referral services, pre-school non formal education and nutrition and health education (Ministry of Women & Child Development 2014). The ICDS services are provided through a network of ICDS centres that is known as "Anganwadi". It is a national program with core funding from New Delhi, but the operational activities are the responsibility of the states.

The ICDS is estimated to provide 68 million children with food (Pritchard et al. 2014:116), and in the Union Budget 2009-10 speech, the Union Financial Minister stated that the "Government is committed to universalisation of the Integrated Child Development Services (ICDS) scheme in the country" (EPW Editorial 2011). However, the qualities of services vary substantially from place to place. According to Pritchard et al. (2014:117) a general rule is that the centres and the ICDS more generally operates more effectively and with broader coverage in areas with relatively higher socioeconomic status. Moreover, the access to ICDS services is socially uneven, even when the Anganwadi centres exist. It is often the case that the centres are located in dominant caste areas of the village, and have dominant caste personnel that functions as gatekeepers and thus limiting the availability for Dalit and tribal communities (Pritchard et al. 2014:117). One of our selected states, Bihar, is often highlight-

[8] Number retrieved from NREGA website: http://164.100.129.6/Netnrega/mpr_ht/nregampr_dmu.aspx?flag=1&page1=S&month=Latest&fin_year=2009-2010 In the data reported by Jha and Gaiha (2012) the numbers for Bihar in 2009-10 is not reported.

ed as an example of a state where the ICDS scheme is not functioning well as Bihar has less than 40 per cent coverage of child supplementary nutrition.

7.3.2 Mid-Day Meal Scheme (MDMS)

The Mid-Day Meal Scheme (MDMS) was launched in 1995 and has, since 2008-09, been implemented in government run primary and upper primary school. The MDMS programme was introduced to mitigate social inequalities inherited through the hierarchical division of society by mitigating classroom hunger and improving nutritional status of school children. Under this programme, a cooked meal with 300 calories and 12 grams of proteins are to be provided to the school children (Garg and Mandal 2013:156). It is currently the world's largest school lunch programme. In 2012-13, more than 104 million students were covered under the MDMS (Shukla 2014:51).

Like the other social safety programmes, the Mid-Day Meal Scheme has been criticized from several holds and for several reasons. The programme became the centre of international attention in July 2013 when 23 school children in Bihar died after eating at school. Still, several studies have found that the program has had significant impact on enrolment of children, especially those from disadvantaged groups, and Afridi (2010) found positive nutrition effects among children in Madhya Pradesh (Khera 2013:12). Other studies, like Shukla (2014) have found that the quality of the food prepared in the MDMS is being compromised, and that the protein levels of the meals are way too low. Shukla (2014:57) argues that "the number of failed MDM samples seen alongside the high percentage of anaemic primary school students in Delhi indicates that food is a non-starter in the fight against malnutrition-related diseases".

7.4 The National Food Security Act (NFSA)

The National Food Security Bill (NFSB) was first tabled by the government in the Indian Parliament in 2011. It passed in both houses of Parliament in September 2013 and thus became the National Food Security Act (NFSA). The overarching premise of the act is that it makes protection against hunger a justiciable right, enabling legal action to be taken against the government of India for shortcomings in the provisioning of people with food. The act guarantees subsidized food to 75 per cent of the rural population and 50 per cent of the urban dwellers through the Public Distribution System (PDS). Under the provisions of the Act priority households are entitled to five kg of food grains per person per month, and Antyodaya households (eligible households) to 35 kg per household per month. The PDS issue prices will be Rs 3/2/1 per kg for rice/wheat/millets. In total, the government will procure and distribute 65 million tons of food grains annually. This represents 30 per cent of India's food grain production (Narayanan 2014:41).

The Food Security Bill was subject for an intensified debate before it was passed in 2013, and the act has been both praised and vilified. One of the major criticisms of the act has been that it is financially irresponsible. A number of estimates have been made of the cost of implementation of the food security bill and they vary between 1.3 per cent of the gross domestic product (GDP) and 3 per cent of GDP (Sinha 2013:31). This position is criticised by Drèze and Sen (2013:271) who argues that it is hard to justify that the act is "fiscally irresponsible… when much larger sums are spent on regressive subsidies, unbalanced salary hikes in the public sector, and other less exemplary purposes" and when taking into account that India has the largest number of undernourished children in the world. The act has also been criticised for not being ambitious enough because it continues with the approach of targeting rather than making the food subsidy programmes universal (Aggarwal and Mander 2013). According to Sinha (2013:31), more than 300 amendments were introduced by various parties, and most were in favour of expanding the scope of the bill through a universalised PDS system, covering pulses, oil and salt as well, and also for introducing other schemes. As stat-

ed by to CUTS International (2012:24), “one big limitation of the NFSB is that the approach is not based on universalization of food security and is premised on the use of BPL as an entitlement criterion despite clear evidence that the targeted approach has been one of the major causes of ineffective functioning of food security measures of the last several years. The bill could have served a better purpose if had been premised on a universal approach”.

8 Preliminary assumptions and questions.

The National Food Security Bill (NFSB) was first tabled by the government in the Indian Parliament in 2011. It passed in both houses of Parliament in September 2013 and thus became the National Food Security Act (NFSA). The overarching premise of the act is that it makes protection against hunger a justiciable right, enabling legal action to be taken against the government of India for shortcomings in the provisioning of people with food. The act guarantees subsidized food to 75 per cent of the rural population and 50 per cent of the urban dwellers through the Public Distribution System (PDS). Under the provisions of the Act priority households are entitled to five kg of food grains per person per month, and Antyodaya households (eligible households) to 35 kg per household per month. The PDS issue prices will be Rs 3/2/1 per kg for rice/wheat/millets. In total, the government will procure and distribute 65 million tons of food grains annually. This represents 30 per cent of India's food grain production (Narayanan 2014:41).

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We have in this paper first described key features of the food security situation for poor Indian households, in terms of food consumption as well as nutrition. The well-known situation of food insecurity is easily illustrated by available statistics. Our purpose is to identify institutional conditions for food availability and supply, on the one hand, and food access, analysed in the form of different types of entitlements, on the other.
Our findings fit quite well in the summary of major structural problems for food security that is presented in The State of the Indian Consumer 2012, CUTS (p 21):

- Market distortions, lack of information and poor networking etc
- Lack of effectiveness of targeting of the poor

- Inadequate buying capacity of poor. Poor people, especially agricultural labourers often find it difficult to pay for even subsidised food. There are other reasons also, such as lack of coordination between the time of wage disbursement and the working hours of the fair price shops
- The pattern of distribution of grain does not seem to be related to the extent of poverty
- Problem associated with migrant labourers. Due to the absence of permanent address, they are unable to get a ration card, and thus do not have access to the PDS
- Over time changes in food habits also have their effect on access to food, especially in tribal areas
- Transportation bottlenecks resulting in poor availability, especially in rural areas
- Wastage due to lack of storage and transportation facilities
- Infrequent distribution by fair price shops
- Poor profit margin for the fair price shop owners has manifested into inherent corruption within the system.
- Very little social mobility
- Only rent seekers have effective bargaining power

Based on the model described in Chapter 2, we will in our further studies first complement our description of institutional conditions, with particular attention to the two selected states. Next, we will study how problems and obstacles such as these impact on food security at the household level.

As a help to focus, we have formulated a series of questions and assumptions:

1. Considering overall bundles of entitlements, in terms of formal rights as well as their realisation, what is the food security situation for households who do benefit from social support in situations of need?
2. Which types of households is it that systematically seem to slip between safety nets of various kinds?
3. Do the mechanisms of household and individual food insecurity vary between urban and rural households?
4. What are the bundles of entitlements, formally and in practices, for migrant workers?

For the moment these are just examples of possible questions. They will be specified and more will be added during the process.

9 Key issues for our study of household food security

As part of WP 3, a survey will be conducted in both urban and rural households in the two states, Karnataka and Bihar. That means four field studies aiming at interviewing a representative sample of household respondents preferably at a number of 200 (if possible, more) at each site. It will be structured, pre-coded, interviews, addressing issues such as the food security situation in the household (enough food, right types of food), perhaps especially for the children, changes in the situation, primary sources of food and money to buy food, where and what food is usually bought, own production of food, access to public support, informal support through social networks, worries about food security and the types of food. Standardised questions used in previous surveys will be used when feasible. The questionnaire must also include simple background information, including employment, ownership/access to land, etc. In addition there should be a few open questions for comments from the respondents, plus recording of observations and experiences made by the interviewer on each site. The questions should be as simple and specific as possible, helped also by information collected in earlier phases of the workpackage.

The sampling and recruitment will be challenging. We will have to decide on which types of households to be included (based on some indicators/level of poverty), criteria for the selection of localities, and ways to maximise representativity on each site. We may need to find local "gatekeepers" to help us with the identification and recruitment of respondents and the selection of sites may have to rely on where this is possible.

The questionnaire as well as the recruitment procedures should be piloted, possibly even at several stages of the process. The actual interviewing should start after the collection of information in through literature reviews and key informant interviews has been completed. Since answers are pre-coded, if possible recorded directly on a computer, initial analyses may start soon after the interviewing has been completed. Analyses will mostly be descriptive, searching for particular institutional influences and dynamics that produce vulnerability to food insecurity and, by comparing sites and states, the significance and functioning of different support systems.

9.1 Operationalising household food security, entitlements and their social and institutional foundations.

In this final section we are trying to operationalise and find indicators for food insecurity and its institutional determinants and, second, to suggest and approach to study institutional influences at the household level. These operationalisations will be adjusted and complemented through the dialogue with other work packages and partners in the project and input from key informants and other sources. It is therefore very much work in progress.

Figur 9-1 Measures of food security at micro, institutional and macro levels

Aspects	**Micro (household)**	**Institutions**	**Macro**
Eating patterns*: food security situation*	Diet, meals of households and individuals: sufficiency, quality, stability Food culture Periods of hunger?	Village family and social structure (incl. caste)? Food exchange/gifts?	Food consumption statistics
Purchasing power *(entitlements through employment, market sale, social security)*	Income – source, level, stability Money for food Other major expenses	Local employment, credit, access to social security Marketing of own production	Statistics – income, employment Social security measures – state, federal (cash, in kind, employment programmes) Ownership to land
Access through ***own production***	Own land/ sharecropping, harvest, animals, gathering, storage Seasonal variations	Local patterns of ownership	Ownership to land
Access through ***informal distribution***	Food provided through the local community	The *sarpanch* system	
Availability *through markets*	Food shopping practices	Logistics –structure of food distribution, systems of trade Local markets/shops	Regulations of food supply State level supply figures

Figur 9-2 Operationalising the dependent variable: eating patterns

	Yesterday eating: meals and snacking	Situation	Ordinary or not? Comments
1st	When What dishes Composition of dishes	Who cooked Source of ingredients Who ate, distribution among household members Place	Dishes, amounts Situation Acceptability, the kind and quality of food you want Sufficiency for the various household members
2nd			
3rd			
4th			

Operationalising independent variables

- Sources of food
  - Own production – for sale and/or own consumption
  - Shopping – local market, shop, subsidized shop
  - Village help in times of shortage, barter – the *sarpanch* system
- Overall expenditures
  - household (breadwinner?), size, adequacy, stability
  - how much for food

  - access to subsidised food: PDS, school meals, Integrated child development scheme
  - major non-food expenses (land rent, loans, school, transportation …)
- Size, stability and source of income
  - Who in the household get an income
  - Production for sale: own land/sharecropping
  - Employment outside agriculture, farm labour, public programmes
  - Type of contract
  - Access to social security in cash
  - Changes over the last 2 years
- Marketed food
  - Products, quality
  - Stability
  - Logistics (storage, who, middlemen, etc.)

- Opinions on
  - adequacy and acceptability of their diet
  - major constraints
  - marketed food (place, accessibility, prices, quality)

Litteratur

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Vedlegg

The NSS 66th round on consumer expenditure.

Data collection: July 2009-June 2010 from 100794 households in 7428 villages and 5263 urban blocks spread over the entire country.
The results of NSS rounds are released in reports based on comprehensive tabulation of the Central sample1 data. The results of the 66th round quinquennial survey on household consumer expenditure are planned for release in seven reports. The titles of these reports are:
1. Level and Pattern of Consumer Expenditure
2. Household Consumption of Various Goods and Services in India
3. Public Distribution System and Other Sources of Household Consumption
4. Energy Sources of Indian Households for Cooking and Lighting
5. Nutritional Intake in India
6. Household Consumer Expenditure across Socio-Economic Groups
7. Perceived Adequacy of Food Consumption in Indian Households

Population coverage: The following procedures were observed:

1. Floating population, i.e., persons without any normal residence, was excluded. But persons residing in open space, roadside shelter, under a bridge, etc., more or less regularly in the same place were covered.
2. Foreign nationals were excluded, as well as their domestic servants, if by definition the latter belonged to the foreign national's household (see Chapter Two, paragraph 2.4.1, for definition of household). A foreign national who had become an Indian citizen for all practical purposes was, however, covered.
3. Persons residing in barracks of military and paramilitary forces (like police, BSF etc.) were kept outside the survey coverage. However, the civilian population residing in their neighbourhood, including the family quarters of service personnel, was covered.
4. Orphanages, rescue homes, ashrams and vagrant houses were outside the survey coverage. However, the persons staying in old age homes, the students staying in ashram/hostels and the residential staff (other than monks/nuns) of these ashrams were covered. Although orphans living in orphanages were excluded, the persons looking after them and staying there were covered. Convicted prisoners undergoing sentence were outside the coverage of the survey.

Table T4: Average rural and urban MPCE and average household size in 2009-10: major States

State	average MPCE (Rs.)		average household size	
	rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	1234	2238	3.6	3.6
Assam	1003	1755	5.0	4.1
Bihar	780	1238	5.2	4.9
Chhattisgarh	784	1647	4.7	4.8
Gujarat	1110	1909	4.9	4.4
Haryana	1510	2321	5.1	4.3
Jharkhand	825	1584	4.8	4.7
Karnataka	1020	2053	4.4	3.9
Kerala	1835	2413	4.0	3.9
Madhya Pradesh	903	1666	4.8	4.6
Maharashtra	1153	2437	4.5	4.2
Orissa	818	1548	4.3	3.9
Punjab	1649	2109	5.0	4.3
Rajasthan	1179	1663	5.2	4.9
Tamil Nadu	1160	1948	3.7	3.5
Uttar Pradesh	899	1574	5.5	4.9
West Bengal	952	1965	4.2	3.8
all-India	1054	1984	4.7	4.1

Table T9: Absolute and percentage break-up of $MPCE_{MMRP}$ by item group in 2009-10: all-India, rural and urban

item group	monthly per capita exp. (Rs.)		percentage to total MPCE	
	rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)
cereals & cereal substitutes	145	162	13.8	8.2
pulses & their products*	35	49	3.3	2.5
milk & milk products	81	137	7.6	6.9
edible oil	39	53	3.7	2.7
egg, fish & meat	50	72	4.7	3.6
vegetables	87	112	8.3	5.7
fruits	26	63	2.4	3.2
sugar, salt and spices	60	73	5.7	3.7
beverages, refreshments & processed food#	78	159	7.4	8.0
food total	**600**	**881**	**57.0**	**44.4**
pan, tobacco & intoxicants	31	30	3.0	1.5
fuel and light	85	138	8.0	6.9
clothing & footwear$	65	115	6.2	5.8
education	38	161	3.6	8.1
medical	57	99	5.4	5.0
conveyance	36	112	3.5	5.6
consumer services excl. conveyance	44	124	4.2	6.3
misc. goods, entertainment	53	113	5.0	5.7
rent	5	115	0.5	5.8
taxes and cesses	2	16	0.2	0.8
durable goods	36	81	3.5	4.1
non-food total	**453**	**1104**	**43.0**	**55.6**
all items	**1054**	**1984**	**100**	**100**

*includes gram #includes purchased cooked meals $excludes tailoring charges

Table T13: Average consumer expenditure (MMRP) per person on selected food groups in 2009-10: major States, rural and urban

State	monthly per capita expenditure (Rs.) on							
	milk & milk products		egg, fish & meat		vegetables		fruits	
	R	U	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	67	114	81	103	97	111	33	67
Assam	36	60	117	200	104	134	16	53
Bihar	53	90	38	46	88	98	15	29
Chhattisgarh	15	62	33	40	104	153	11	38
Gujarat	133	188	14	19	97	131	24	53
Haryana	312	293	10	28	103	134	37	76
Jharkhand	32	90	47	77	83	127	11	46
Karnataka	61	98	55	76	62	83	40	66
Kerala	66	83	160	173	83	90	75	99
Madhya Pradesh	78	118	23	29	67	88	20	46
Maharashtra	61	137	44	76	83	119	48	94
Orissa	19	54	51	80	98	122	15	37
Punjab	252	253	11	22	101	123	29	63
Rajasthan	188	217	11	24	74	94	20	62
Tamil Nadu	60	110	80	97	80	103	34	62
Uttar Pradesh	82	133	20	27	81	105	18	45
West Bengal	25	66	102	186	101	125	18	43
India	**81**	**137**	**50**	**72**	**87**	**112**	**26**	**63**

Table T14: Trends in percentage composition of consumer expenditure since 1987-88

item group	rural					urban				
	share in total consumer expenditure in									
	1987-88	1993-94	1999-2000*	2004-05	2009-10	1987-88	1993-94	1999-2000*	2004-05	2009-10
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
cereals	26.3	24.2	22.2	18.0	15.6	15.0	14.0	12.4	10.1	9.1
gram	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.1	0.1	0.1
cereal substitutes	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
pulses & products	4.0	3.8	3.8	3.1	3.7	3.4	3.0	2.8	2.1	2.7
milk & products	8.6	9.5	8.8	8.5	8.6	9.5	9.8	8.7	7.9	7.8
edible oil	5.0	4.4	3.7	4.6	3.7	5.3	4.4	3.1	3.5	2.6
egg, fish & meat	3.3	3.3	3.3	3.3	3.5	3.6	3.4	3.1	2.7	2.7
vegetables	5.2	6.0	6.2	6.1	6.2	5.3	5.5	5.1	4.5	4.3
fruits & nuts	1.6	1.7	1.7	1.9	1.6	2.5	2.7	2.4	2.2	2.1
sugar	2.9	3.1	2.4	2.4	2.4	2.4	2.4	1.6	1.5	1.5
salt & spices	2.9	2.7	3.0	2.5	2.4	2.3	2.0	2.2	1.7	1.5
beverages, etc.	3.9	4.2	4.2	4.5	5.6	6.8	7.2	6.4	6.2	6.3
food total	**64.0**	**63.2**	**59.4**	**55.0**	**53.6**	**56.4**	**54.7**	**48.1**	**42.5**	**40.7**
pan, tobacco, intox.	3.2	3.2	2.9	2.7	2.2	2.6	2.3	1.9	1.6	1.2
fuel & light	7.5	7.4	7.5	10.2	9.5	6.8	6.6	7.8	9.9	8.0
clothing & bedding	6.7	5.4	6.9	4.5	4.9	5.9	4.7	6.1	4.0	4.7
footwear	1.0	0.9	1.1	0.8	1.0	1.1	0.9	1.2	0.7	0.9
misc. g. & services	14.5	17.3	19.6	23.4	24.0	23.2	27.5	31.3	37.2	37.8
durable goods	3.1	2.7	2.6	3.4	4.8	4.1	3.3	3.6	4.1	6.7
non-food total	**36.0**	**36.8**	**40.6**	**45.0**	**46.4**	**43.6**	**45.3**	**51.9**	**57.5**	**59.3**
total expenditure	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

*URP estimates shown except for 1999-2000, for which only MRP estimates are available.

Table T15: Quantity of cereals consumed per person per month and percentage shares of rice and wheat in cereal consumption in 2009-10, major States

State	rural				urban			
	monthly per capita qty. of cereals consumed (kg)	% in total quantity of cereal consumed of			monthly per capita qty. of cereals consumed (kg)	% in total quantity of cereal consumed of		
		rice	wheat	other cereals		rice	wheat	other cereals
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	11.5	93	3	4	10.1	88	10	2
Assam	12.9	96	4	0	11.8	89	11	0
Bihar	12.2	52	45	2	12.0	50	49	1
Chhattisgarh	12.1	92	7	1	10.7	73	27	0
Gujarat	9.2	19	46	36	8.2	25	66	9
Haryana	9.8	7	91	2	8.9	12	88	1
Jharkhand	11.8	73	26	1	11.3	55	44	0
Karnataka	10.0	56	11	33	9.2	60	19	21
Kerala	8.7	88	12	0	8.1	85	15	0
Madhya Pradesh	11.3	19	72	9	9.4	20	79	1
Maharashtra	10.2	32	42	27	8.3	36	54	11
Orissa	13.9	95	5	1	12.4	84	16	0
Punjab	9.3	9	90	1	8.6	13	86	1
Rajasthan	11.8	2	73	25	10.0	5	91	5
Tamil Nadu	10.0	92	6	2	9.3	90	10	1
Uttar Pradesh	12.0	36	64	1	10.1	28	72	1
West Bengal	11.4	90	10	0	9.4	77	23	0
India	**11.3**	**54**	**38**	**8**	**9.4**	**50**	**46**	**4**

Table T4: Consumption of different cereals in 2004-05 and 2009-10, all-India

cereal	year	per capita qty (kg) consumed in 30 days		percentage of hhs consuming[$] in a 30-day period	
		rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)	(6)
rice: PDS*	04-05	0.84	0.53	24.4	13.1
	09-10	1.41	0.81	39.1	20.5
rice: other sources*	04-05	5.54	4.18	85.3	89.1
	09-10	4.59	3.71	84.7	87.4
rice: all sources	04-05	6.38	4.71	-	-
	09-10	6.00	4.52	-	-
wheat/ *atta*: PDS[@]	04-05	0.31	0.17	11.0	5.8
	09-10	0.62	0.37	27.6	17.6
wheat/ *atta*: other sources[@]	04-05	3.89	4.19	63.5	79.5
	09-10	3.63	3.71	64.4	74.9
wheat/ *atta*: all sources	04-05	4.19	4.36	-	-
	09-10	4.25	4.08	-	-
jowar & its products	04-05	0.43	0.22	9.6	7.8
	09-10	0.29	0.18	9.2	7.5
bajra & its products	04-05	0.39	0.11	7.2	4.0
	09-10	0.26	0.09	6.3	4.8
maize & its products	04-05	0.31	0.025	8.0	2.1
	09-10	0.20	0.021	6.0	1.7
all cereals[#]	04-05	12.12	9.94	98.6	95.1
	09-10	11.35	9.37	98.4	93.5

*excludes rice products [@]excludes other wheat products [#]includes all cereal products

[$]Note that these are the percentages of households reporting cereal *items*, and excludes the households whose members consumed cereals only as part of meals prepared outside the household (in restaurants, in other households, etc.).

Table T5: Consumption of major pulses in 2004-05 and 2009-10, all-India

pulse type	year	per capita qty (kg) consumed in 30 days		% of consuming hhs* (in 30 days)	
		rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)	(6)
arhar	04-05	0.21	0.30	56.8	71.1
	09-10	0.16	0.26	53.8	69.4
moong	04-05	0.09	0.11	43.7	59.4
	09-10	0.07	0.10	40.5	56.6
masur	04-05	0.11	0.09	37.9	37.1
	09-10	0.08	0.08	34.9	35.3
urd	04-05	0.08	0.09	35.4	41.7
	09-10	0.07	0.09	35.4	43.1
gram (split)	04-05	0.06	0.07	33.2	44.3
	09-10	0.08	0.08	38.7	43.1
all pulses & pulse products	04-05	0.71	0.82	97.3	94.4
	09-10	0.65	0.79	96.9	92.7

*Note that these are the percentages of households reporting *items* of pulses, and excludes the households whose members consumed pulses only as part of meals prepared outside the household (in restaurants, in other households, etc.).

Table T6: Details of consumption of selected pulses and pulse products, all-India

pulse/ pulse product	per capita consumption in 30 days				% of consuming hhs (in 30 days)	
	quantity (g)		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
arhar, tur	163	264	11.54	20.10	53.8	69.4
gram: split	77	79	2.91	3.24	38.7	43.1
gram: whole	33	39	1.19	1.65	17.5	22.5
moong	73	104	4.86	7.35	40.5	56.6
masur	79	78	4.83	4.98	34.9	35.3
urd	72	90	4.07	5.68	35.4	43.1
peas	57	25	1.51	0.82	15.3	11.0
besan	38	58	1.55	2.48	27.7	38.1
all pulses & products	651	788	35.03	49.12	96.9	92.7

Table T7: Details of consumption of edible oil, all-India

edible oil	per capita consumption in 30 days				% of consuming hhs* (in 7 days)	
	quantity (g)		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
vanaspati, margarine	36	36	1.99	2.12	9.1	8.3
mustard oil	287	230	18.94	15.32	52.5	34.3
groundnut oil	54	126	3.69	9.13	8.7	14.1
coconut oil	16	18	0.94	1.15	4.1	3.9
edible oil: others	243	408	13.36	25.13	38.2	51.3
edible oil: sub-total	**636**	**818**	**38.92**	**52.85**	**98.1**	**93.0**

*Note that these are the percentages of households reporting *items* of edible oil, and excludes households whose members consumed edible oil only as part of meals prepared outside the household (in restaurants, in other households, etc.

Table T8: Details of consumption of milk, eggs, fish, and selected meats, all-India

item	per capita consumption in 30 days				% of consuming hhs (in 7 days)	
	quantity		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
milk: liquid (litre)	4.117	5.358	76.16	119.43	76.4	84.9
eggs (no.)	1.73	2.67	5.35	8.15	27.1	32.3
fish, prawn (g)	269	238	18.81	20.74	28.2	20.9
goat meat/mutton (g)	47	91	8.74	18.66	7.2	12.3
beef/ buffalo meat (g)	37	51	3.10	4.42	3.9	4.3
chicken (g)	123	180	12.66	19.23	16.6	21.5

Table T9: Details of consumption of common vegetables, all-India

vegetable	per capita consumption in 30 days				% of consuming hhs (in 7 days)	
	quantity (g)		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
potato	1666	1368	18.40	17.29	88.1	85.4
onion	741	854	10.89	13.34	94.9	90.3
radish	186	176	1.43	1.79	19.6	21.1
carrot	73	153	1.08	2.77	12.4	25.9
pumpkin	250	166	2.21	1.89	24.8	19.9
gourd	302	284	2.95	3.70	29.1	29.7
bitter gourd	80	117	1.43	2.56	15.9	22.3
cucumber	136	208	1.57	2.93	16.9	24.0
jhinga, torai	209	148	2.48	2.44	20.9	17.5
cauliflower	302	362	3.53	5.92	28.6	37.7
cabbage	275	337	2.90	4.60	31.4	41.4
brinjal	518	441	6.42	6.86	64.3	61.1
lady's finger	202	282	3.13	5.86	32.8	45.0
palak/other leafy vegetables	605	497	5.84	6.76	58.7	56.3
french beans, barbati	73	92	1.20	2.07	12.7	17.8
tomato	537	757	7.47	11.66	71.8	81.6
chillis: green	145	148	4.09	4.42	81.6	79.6
lemon (no.)	1.27	1.72	1.19	3.00	21.6	36.9

Table T10: Details of consumption of important fruits and nuts, all-India

fruit/nut	per capita consumption in 30 days				% of consuming hhs (in 7 days)	
	quantity		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
banana (no.)	3.86	6.65	5.88	12.18	34.4	52.2
coconut (no.)	0.46	0.63	2.79	4.15	19.5	25.2
green coconut (no.)	0.06	0.11	0.41	1.07	2.2	4.2
orange, mausami (no.)	0.36	0.86	1.05	3.20	4.9	10.3
apple (g)	45	158	2.73	12.09	6.1	19.4
mango (g)	108	158	2.54	5.52	7.5	10.9
grapes (g)	26	73	1.23	3.51	5.4	11.3
papaya (g)	27	79	0.38	1.55	2.5	5.9
groundnut (g)	50	67	2.52	3.72	17.2	23.5
cashewnut (g)	1	7	0.33	2.41	1.3	6.4

Table T11: Details of consumption of selected beverages and processed foods, all-India

beverage/ processed food	per capita consumption in 30 days				% of consuming hhs (in 7 days)	
	quantity		value (Rs.)			
	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)
tea: cups (no.)	3.8	6.4	9.89	20.93	38.6	49.2
tea: leaf (g)	75.1	93.6	13.34	18.61	81.5	83.7
cold beverages, mineral water, fruit juice (ml)	47	515	1.05	7.99	-	-
other beverages: cocoa, chocolate, etc.	-	-	1.09	3.16	9.3	12.3
biscuits	-	-	9.70	17.18	65.4	72.3
prepared sweets	-	-	5.39	10.77	16.5	19.1
salted refreshments (g)	69	113	5.34	10.57	32.8	40.9
cooked meals purchased (no.)	0.35	1.40	7.46	35.65	4.7	12.3
cooked meals recd. as assistance/payment (no.)	2.04	0.94	15.04	9.99	21.6	8.3

Table S1: Per capita consumption and percentage of households reporting consumption from PDS of rice, wheat/*atta*, sugar and kerosene in 2004-05 and 2009-10, all-India

sec-tor	item	2009-10			2004-05			% of hhs reporting consn. from PDS during 30 days	
		per capita consumption (kg)		% share of PDS in qty. con-sumed	per capita consumption (kg)		% share of PDS in qty. con-sumed		
		PDS	other sources		PDS	other sources		2009-10	2004-05
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
R	rice	1.408	4.594	23.5	0.839	5.537	13.2	39.1	24.4
	wheat/*atta*	0.619	3.625	14.6	0.307	3.885	7.3	27.6	11.0
	sugar	0.097	0.563	14.7	0.062	0.587	9.6	27.8	15.9
	kerosene*	0.511	0.081	86.3	0.477	0.142	77.1	81.8	72.8
U	rice	0.814	3.706	18.0	0.530	4.181	11.3	20.5	13.1
	wheat/*atta*	0.371	3.706	9.1	0.167	4.192	3.8	17.6	5.8
	sugar	0.080	0.700	10.3	0.054	0.763	6.6	18.7	11.5
	kerosene*	0.295	0.169	63.6	0.350	0.268	56.6	33.0	32.8

The per capita quantity figures are taken from NSS Report No.541: *Household Consumption of Various Goods and Services in India, NSS 66th Round.* * qty in litres

Table S4-1: Wheat/*atta*: percentage of households reporting consumption from PDS and from other sources; share of PDS and (for rural) of home produce in quantity consumed; and unit value of consumption from PDS and from other sources: major States

State	% of hhs reporting consumption in a 30-day period from				% of quantity consumed coming from			unit value (Rs./kg) of consump-tion from PDS		unit value (Rs./kg) of consumption from all other sources	
	PDS		all other sources		PDS		home-grown stock				
	R	U	R	U	R	U	R	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Andhra Pradesh	1.7	2.8	34.1	60.2	5.1	7.5	1.6	11.21	7.78	23.81	23.94
Assam	1.2	1.5	55.2	71.7	1.5	1.3	0.4	10.29	11.8	17.26	19.83
Bihar	12.7	5.4	96	92.9	5.1	2.4	31.8	5.70	6.88	12.80	13.91
Chhattisgarh	27.5	24.6	30.7	69.6	39.1	17.9	11.8	2.46	2.38	15.89	16.72
Gujarat	34.5	10.5	82.7	93.7	15.6	5.0	26.9	2.71	6.77	14.00	16.34
Haryana	20.3	8.5	91.1	94.0	14.2	8.0	42.7	4.55	5.15	11.49	13.83
Jharkhand	25.2	8.0	66.8	87.1	20.6	4.0	3.5	3.69	4.28	14.95	15.91
Karnataka	69.2	23.3	33.8	70.1	51.5	13.5	7.4	3.51	3.49	17.69	20.03
Kerala	32.8	28.5	48.7	57.0	39.7	33.1	0.0	7.89	7.83	22.54	24.30
Madhya Pradesh	45.7	24.0	83.4	90.4	21.8	13.2	43.9	3.41	3.69	12.06	13.04
Maharashtra	44.2	10.7	66.9	86.2	32.7	8.6	16.2	5.61	8.04	14.47	17.47
Odisha	5.2	7.5	37.9	60.1	17.0	10.2	0.1	8.02	8.23	18.25	18.76
Punjab	23.8	10.3	94.3	94.6	14.6	9.0	32.6	4.42	5.06	12.26	14.13
Rajasthan	17.9	11.6	84.7	91.6	10.5	6.1	36.8	5.19	6.65	12.82	13.77
Tamil Nadu	57.3	50.8	13.4	31.9	85.8	64.7	0.0	8.15	8.04	22.65	25.13
Uttar Pradesh	21.2	17.2	97.1	91.1	6.8	7.6	51.5	4.39	6.83	10.75	12.88
West Bengal	33.1	13.8	45.8	77.3	41.4	11.7	1.0	5.29	6.31	15.28	16.63
all-India	**27.6**	**17.6**	**64.5**	**74.9**	**14.6**	**9.1**	**37.0**	**4.83**	**6.43**	**12.31**	**15.13**

Table S5: Sugar: percentage of households reporting consumption (a) from PDS and (b) from other sources; share of PDS in quantity consumed; and unit value of consumption from PDS and from other sources: major States

State	percentage of hhs reporting consumption during a 30-day period				share of PDS in qty of consumption		unit value (Rs./kg) – PDS		unit value (Rs./kg) – other sources	
	from PDS		from other sources							
	R	U	R	U	R	U	R	U	R	U
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Andhra Pradesh	57.0	31.8	75.5	80.7	24.5	12.3	14.57	14.79	34.64	34.33
Assam	52.6	27.2	59.6	79.4	53.2	31.0	16.55	16.40	35.71	34.88
Bihar	1.2	2.4	91.3	87.9	0.9	1.7	17.86	19.19	35.93	36.24
Chhattisgarh	53.8	30.9	74.5	87.8	28.6	11.0	14.09	14.99	35.69	35.01
Gujarat	28.3	6.2	93.2	97.1	14.5	3.3	13.69	13.90	34.14	34.17
Haryana	6.0	3.5	97.3	97.3	2.1	1.9	14.51	16.63	35.41	35.33
Jharkhand	5.1	1.2	86.7	89.3	4.6	1.7	14.39	15.22	36.33	35.18
Karnataka	47.0	13.2	86.4	87.2	18.9	5.4	14.06	14.34	32.23	32.90
Kerala	21.7	16.1	92.0	89.4	11.2	8.5	13.89	13.99	33.67	33.37
Madhya Pradesh	27.4	11.2	86.7	89.9	14.1	6.0	13.86	13.93	34.31	34.38
Maharashtra	20.3	7.8	92.8	90.9	9.8	4.6	17.60	18.91	34.15	34.69
Odisha	19.1	10.7	75.4	83.0	16.0	8.9	14.38	14.43	36.23	35.71
Punjab	0.1	0.3	99.4	97.5	0.0	0.3	5.00	19.33	36.11	35.60
Rajasthan	1.4	1.1	99.0	94.6	0.9	0.7	14.04	13.71	34.70	34.65
Tamil Nadu	86.4	77.7	42.2	57.3	73.2	62.6	13.56	13.55	33.56	32.90
Uttar Pradesh	12.1	3.0	92.4	92.8	7.0	2.1	14.42	15.06	35.23	35.25
West Bengal	16.1	6.3	92.8	91.3	11.2	4.3	14.95	15.56	35.20	35.19
all-India	**27.8**	**18.7**	**84.4**	**85.4**	**14.7**	**10.3**	**14.48**	**14.35**	**34.90**	**34.71**

Table S8-2: Major states (rural): percentage share of home-grown stock in quantity consumed in 2009-10: selected vegetables, coconut and firewood

State	percentage of consumption (quantity) coming from home-grown stock							
	potato	radish	pump-kin	gourd	cucum-ber	jhinga/ torai	coco-nut	fire-wood
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
AP	0.1	1.2	6.2	3.0	0.1	0.5	10.0	5.6
ASM	8.3	50.6	47.2	49.4	31.2	54.9	48.2	42.6
BHR	9.2	22.4	29.5	33.8	4.8	23.2	0.7	34.5
CTG	14.5	42.1	31.3	18.3	34.2	48.5	2.5	28.3
GUJ	0.1	2.7	19.2	10.1	4.8	5.8	0.0	17.1
HAR	1.3	15.2	2.5	9.3	12.3	11.4	0.0	47.9
JHK	21.1	28.1	39.6	41.7	13.2	37.8	0.0	9.2
KTK	1.4	0.4	1.3	2.2	0.7	7.1	29.9	29.3
KRL	0.0	0.0	6.2	7.7	3.1	0.0	57.7	39.9
MP	3.5	8.1	14.1	21.8	24.1	43.1	0.0	28.8
MAH	0.6	0.2	3.0	10.9	4.9	3.7	4.4	25.9
ODS	2.5	9.2	21.8	34.1	16.4	29.5	26.5	14.6
PUN	2.5	13.8	4.6	6.4	0.8	12.0	0.0	31.9
RAJ	0.4	11.5	1.9	8.1	8.3	33.8	1.6	52.6
TN	0.0	0.8	0.7	1.5	0.0	0.2	8.5	8.8
UP	12.2	5.9	9.8	8.7	9.1	9.1	0.0	34.2
WB	5.5	10.3	10.1	14.5	2.6	7.7	42.9	23.0
IND	**8.1**	**16.6**	**22.2**	**17.6**	**8.4**	**19.2**	**30.3**	**28.2**

Table S9: Rice and wheat: unit values of consumption from PDS, from home-grown stock, and from other sources: major States, rural sector

State	RICE				WHEAT			
	unit value (Rs./kg) of consumption from			share of home produce in consn.	unit value (Rs./kg) of consumption from			share of home produce in consn.
	PDS	home-grown stock	other sources		PDS	home-grown stock	other sources	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Andhra Pradesh	2.02	13.41	20.72	7.9	11.21	19.47	23.81	1.6
Assam	7.36	15.90	16.70	52.1	10.29	19.49	17.26	0.4
Bihar	6.01	14.45	15.04	30.8	5.70	11.59	13.18	31.8
Chhattisgarh	1.97	9.78	15.02	31.8	2.46	10.74	15.89	11.8
Gujarat	4.1	16.19	21.23	11.7	2.71	10.84	14.70	26.9
Haryana	9.47	19.34	20.98	27.7	4.55	9.85	12.18	42.7
Jharkhand	4.58	12.82	15.43	31.5	3.69	10.04	15.10	3.5
Karnataka	3.07	12.17	20.58	9.0	3.51	9.04	18.04	7.4
Kerala	5.15	13.54	20.44	1.9	7.89	-	22.54	0.0
Madhya Pradesh	4.96	12.14	16.12	24.5	3.41	10.22	11.94	43.9
Maharashtra	6.28	13.59	18.77	18.4	5.61	10.87	14.76	16.2
Odisha	2.03	10.07	13.60	33.9	8.02	12.11	18.25	0.1
Punjab	20.00	21.80	22.16	23.8	4.42	10.19	12.87	32.6
Rajasthan	15.00	18.50	24.26	6.7	5.19	11.25	13.33	36.8
Tamil Nadu	1.03	9.35	20.53	5.1	8.15	-	22.65	0.0
Uttar Pradesh	4.85	12.47	15.05	40.2	4.39	9.78	11.40	51.5
West Bengal	2.83	15.10	16.07	23.1	5.29	10.52	15.28	1.0
all-India	**3.47**	**12.56**	**17.39**	**25.1**	**4.83**	**10.17**	**13.17**	**37.0**

Table T3: Average calorie intake per capita and per consumer unit in 2009-10: major States

State	calorie intake (Kcal) per day per capita		calorie intake (Kcal) per day per consumer unit	
	rural	urban	rural	urban
(1)	(2)	(4)	(6)	(8)
Andhra Pradesh	2204	2223	2731	2721
Assam	2120	2176	2579	2640
Bihar	2036	2213	2481	2687
Chhattisgarh	2025	2096	2484	2583
Gujarat	2046	2096	2519	2582
Haryana	2310	2202	2842	2674
Jharkhand	2051	2226	2509	2705
Karnataka	2026	2115	2514	2600
Kerala	2110	2118	2666	2666
Madhya Pradesh	2087	2045	2553	2500
Maharashtra	2179	2099	2714	2572
Orissa	2271	2259	2796	2759
Punjab	2308	2260	2851	2759
Rajasthan	2350	2144	2884	2651
Tamil Nadu	2046	2135	2532	2649
Uttar Pradesh	2181	2072	2710	2526
West Bengal	2060	2027	2516	2493
all-India	2147	2123	2647	2604

Table T9: Percentage break-up of calorie consumption from non-cereal food over eight non-cereal food groups: major States, 2009-10

State	% share of non-cereals in calorie intake	% share of calorie intake from non-cereals contributed by food group								
		roots & tubers	sugar & honey	pulses, nuts & oilseeds	veg. & fruits	meat, eggs & fish	milk & milk products	oils & fats	misc. food, etc.	all
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
										Rural
Andhra Pradesh	40.0	4	7	12	9	4	13	24	26	100
Assam	30.0	11	10	10	13	7	9	22	19	100
Bihar	31.2	18	7	11	10	3	14	24	14	100
Chhattisgarh	31.0	8	11	12	11	3	4	27	24	100
Gujarat	49.7	6	13	8	6	1	20	30	16	100
Haryana	51.8	7	16	7	6	0	37	16	11	100
Jharkhand	34.1	13	7	9	8	3	8	22	30	100
Karnataka	43.4	3	11	17	6	3	14	22	24	100
Kerala	52.6	7	10	16	9	9	9	14	25	100
Madhya Pradesh	38.4	7	13	12	6	1	17	23	21	100
Maharashtra	46.5	5	13	18	6	2	10	28	19	100
Orissa	29.7	12	8	11	10	4	6	20	29	100
Punjab	54.0	6	18	9	5	0	31	21	10	100
Rajasthan	43.9	5	15	5	5	0	32	23	15	100
Tamil Nadu	43.9	4	9	16	7	4	12	20	29	100
Uttar Pradesh	37.0	13	12	11	7	1	19	22	15	100
West Bengal	36.3	15	8	6	10	7	6	24	24	100
all-India	39.6	**9**	**11**	**11**	**7**	**3**	**16**	**23**	**20**	**100**
										Urban
Andhra Pradesh	47.8	4	7	13	9	4	15	24	25	100
Assam	37.7	9	8	10	13	8	9	26	18	100
Bihar	37.9	13	8	10	9	2	16	24	18	100
Chhattisgarh	41.5	7	13	14	10	2	11	30	12	100
Gujarat	55.9	6	12	10	8	1	20	33	11	100
Haryana	54.1	7	13	9	8	1	27	24	11	100
Jharkhand	42.2	10	8	10	9	3	14	25	20	100
Karnataka	50.4	3	9	15	7	3	16	22	25	100
Kerala	56.2	5	10	17	8	8	11	15	27	100
Madhya Pradesh	47.6	6	13	12	8	1	17	28	16	100
Maharashtra	55.1	4	11	15	8	2	15	27	18	100
Orissa	37.1	10	8	10	11	4	10	20	26	100
Punjab	57.0	6	14	10	6	1	27	25	11	100
Rajasthan	47.5	5	14	6	8	1	27	26	14	100
Tamil Nadu	49.9	4	9	16	7	4	16	20	25	100
Uttar Pradesh	44.5	11	12	10	9	1	20	24	13	100
West Bengal	46.8	12	8	6	9	8	10	26	21	100
all-India	49.6	**6**	**10**	**12**	**8**	**3**	**17**	**25**	**19**	**100**

Table T16R: Estimated per capita calorie intake per day in different years: major States

Rural

State	estimated per capita calorie intake (Kcal) per day in						
	'72-'73	'83	'93-'94	'99-2000	'04-'05	'09-'10 Sch. 1	*'09-'10 Sch. 2*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	2103	2204	2052	2021	1995	2047	*2204*
Assam	2074	2056	1983	1915	2067	1974	*2120*
Bihar	2225	2189	2115	2121	2049	1931	*2036*
Chhattisgarh	-	-	-	-	1942	1926	*2025*
Gujarat	2142	2113	1994	1986	1923	1982	*2046*
Haryana	3215	2554	2491	2455	2226	2180	*2310*
Jharkhand	-	-	-	-	1961	1900	*2051*
Karnataka	2202	2260	2073	2028	1845	1903	*2026*
Kerala	1559	1884	1965	1982	2014	1964	*2110*
Madhya Pradesh	2423	2323	2164	2062	1929	1939	*2087*
Maharashtra	1895	2144	1939	2012	1933	2051	*2179*
Orissa	1995	2103	2199	2119	2023	2126	*2271*
Punjab	3493	2677	2418	2381	2240	2223	*2308*
Rajasthan	2730	2433	2470	2425	2180	2191	*2350*
Tamil Nadu	1955	1861	1884	1826	1842	1925	*2046*
Uttar Pradesh	2575	2399	2307	2327	2200	2064	*2181*
Uttarakhand	-	-	-	-	2160	2179	*2271*
West Bengal	1921	2027	2211	2095	2070	1927	*2060*
all-India	**2266**	**2221**	**2153**	**2149**	**2047**	**2020**	***2147***

Table T16U: Estimated per capita calorie intake per day in different years: major States

Urban

State	estimated per capita calorie intake (Kcal) per day in						
	'72-'73	'83	'93-'94	'99-2000	'04-'05	'09-'10 Sch. 1	*'09-'10 Sch. 2*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Andhra Pradesh	2143	2009	1992	2052	2000	1975	*2223*
Assam	2135	2043	2108	2174	2143	2003	*2176*
Bihar	2167	2131	2188	2171	2190	2013	*2213*
Chhattisgarh	-	-	-	-	2087	1949	*2096*
Gujarat	2172	2000	2027	2058	1991	1983	*2096*
Haryana	2404	2242	2140	2172	2033	1940	*2202*
Jharkhand	-	-	-	-	2458	2046	*2226*
Karnataka	1925	2124	2026	2046	1944	1987	*2115*
Kerala	1723	2049	1966	1995	1996	1941	*2118*
Madhya Pradesh	2229	2137	2082	2132	1954	1854	*2045*
Maharashtra	1971	2028	1989	2039	1847	1901	*2099*
Orissa	2276	2219	2261	2298	2139	2096	*2259*
Punjab	2783	2100	2089	2197	2150	2062	*2260*
Rajasthan	2357	2255	2184	2335	2116	2014	*2144*
Tamil Nadu	1841	2140	1922	2030	1935	1963	*2135*
Uttar Pradesh	2161	2043	2114	2131	2124	1923	*2072*
Uttarakhand	-	-	-	-	2205	1984	*2141*
West Bengal	2080	2048	2131	2134	2011	1851	*2027*
all-India	**2107**	**2089**	**2071**	**2156**	**2020**	**1946**	***2123***

Table T10: Average protein intake per capita and per consumer unit in 2009-10: major States

State	protein intake (g) per day per capita		protein intake (g) per day per consumer unit	
	rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	56.9	58.8	70.5	71.9
Assam	54.4	58.8	66.2	71.4
Bihar	57.6	62.4	70.2	75.7
Chhattisgarh	48.8	54.6	59.8	67.3
Gujarat	56.0	56.4	69.0	69.4
Haryana	70.7	64.5	86.9	78.3
Jharkhand	53.6	61.7	65.6	75.0
Karnataka	53.4	56.3	66.2	69.2
Kerala	59.0	59.9	74.6	75.4
Madhya Pradesh	62.7	59.0	76.7	72.1
Maharashtra	60.2	58.8	75.0	72.0
Orissa	54.5	58.0	67.1	70.8
Punjab	67.2	64.4	83.0	78.6
Rajasthan	71.4	63.7	87.7	78.8
Tamil Nadu	52.0	55.5	64.3	68.9
Uttar Pradesh	63.3	60.1	78.7	73.3
West Bengal	53.3	55.5	65.1	68.2
all-India	**59.3**	**58.8**	**73.1**	**72.1**

Table T12: Percentage break-up of protein intake by food group: major States, 2009-10

State	% share of protein intake coming from					
	cereals	pulses	milk & milk products	egg, fish & meat	other food	all
(1)	(2)	(3)	(4)	(5)	(6)	(7)
						Rural
Andhra Pradesh	52	9	8	10	21	100
Assam	60	8	4	12	16	100
Bihar	68	7	6	4	13	100
Chhattisgarh	65	10	2	5	17	100
Gujarat	58	9	15	2	16	100
Haryana	54	7	25	1	13	100
Jharkhand	64	8	4	6	18	100
Karnataka	53	10	10	8	20	100
Kerala	40	7	7	24	21	100
Madhya Pradesh	67	9	9	2	14	100
Maharashtra	57	11	7	4	21	100
Orissa	65	7	3	6	18	100
Punjab	54	9	23	1	12	100
Rajasthan	63	5	18	1	13	100
Tamil Nadu	50	12	8	10	20	100
Uttar Pradesh	66	9	10	2	13	100
West Bengal	57	6	4	14	20	100
all-India	**60**	**8**	**9**	**6**	**16**	**100**
						Urban
Andhra Pradesh	45	11	11	11	22	100
Assam	53	9	5	16	16	100
Bihar	63	8	9	5	15	100
Chhattisgarh	57	14	7	6	17	100
Gujarat	52	12	16	2	18	100
Haryana	53	9	20	3	15	100
Jharkhand	58	9	9	8	17	100
Karnataka	46	11	12	9	21	100
Kerala	37	9	9	24	22	100
Madhya Pradesh	59	10	11	3	16	100
Maharashtra	48	12	12	8	21	100
Orissa	58	8	6	8	19	100
Punjab	51	11	22	2	14	100
Rajasthan	61	6	17	2	14	100
Tamil Nadu	44	13	12	10	20	100
Uttar Pradesh	60	9	12	3	15	100
West Bengal	48	7	7	18	20	100
all-India	**51**	**10**	**13**	**8**	**18**	**100**

Table T14: Average fat intake per capita and per consumer unit in 2009-10: major States

State	fat intake per day per capita		fat intake per day per consumer unit	
	rural	urban	rural	urban
(1)	(2)	(3)	(4)	(5)
Andhra Pradesh	44.7	50.7	55.4	62.1
Assam	28.6	36.9	34.8	44.7
Bihar	31.3	40.8	38.2	49.5
Chhattisgarh	28.1	43.6	34.4	53.7
Gujarat	60.5	68.5	74.5	84.4
Haryana	62.9	63.8	77.4	77.4
Jharkhand	30.4	44.5	37.1	54.1
Karnataka	46.4	51.8	57.5	63.7
Kerala	47.2	50.6	59.6	63.7
Madhya Pradesh	41.8	52.2	51.2	63.8
Maharashtra	55.7	60.9	69.4	74.7
Orissa	27.9	34.5	34.3	42.2
Punjab	65.8	68.9	81.3	84.1
Rajasthan	62.6	58.3	76.9	72.0
Tamil Nadu	42.1	49.4	52.1	61.3
Uttar Pradesh	40.3	45.7	50.0	55.7
West Bengal	32.9	43.0	40.2	52.8
all-India	**43.1**	**53.0**	**53.1**	**65.0**

Statement 3.7: Percentage break-up of average MPCE over item groups for each social group of households: all-India, rural and urban

item group	rural					Urban				
	ST	SC	OBC	Others	all groups*	ST	SC	OBC	Others	all groups*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
cereals	15	15	14	12	14	9	10	9	7	8
milk & milk products	5	7	8	8	8	6	7	7	7	7
vegetables	10	9	8	8	8	7	7	6	5	6
other food items	30	28	27	26	27	25	26	25	22	24
food: total	**60**	**59**	**57**	**55**	**57**	**46**	**49**	**47**	**42**	**44**
fuel and light	9	9	8	7	8	7	8	7	7	7
clothing & bedding	5	5	5	5	5	5	5	5	5	5
education	2	3	3	5	4	7	6	7	9	8
medical	3	5	6	6	5	4	5	5	5	5
conveyance	3	3	3	4	3	5	5	5	6	6
other cons. services	4	4	4	5	4	6	5	5	7	6
other non-food items	14	13	13	13	13	20	18	19	19	19
non- food: total	**40**	**41**	**43**	**45**	**43**	**54**	**51**	**53**	**58**	**56**
all	100	100	100	100	100	100	100	100	100	100

*including n.r.

Ref: Appendix A, Tables 12 & 13

Statement 3.8: Percentage break-up of average MPCE over item groups for each household type: all-India

item group	rural						urban				
	self-empl. in non-agr.	agr. lab.	other lab.	self-empl. in agr.	others	all types*	self-employ-ed	regular wage/ salary earning	casual lab.	others	all types*
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
cereals	14	16	14	14	10	14	9	7	12	5	8
milk & milk products	7	5	7	10	7	8	8	7	6	5	7
vegetables	8	10	9	8	7	8	6	5	8	4	6
other food items	27	30	29	25	27	27	23	23	29	24	24
food: total	**56**	**61**	**58**	**57**	**51**	**57**	**46**	**43**	**55**	**38**	**44**
fuel and light	8	9	9	8	7	8	7	7	8	6	7
clothing & bedding	5	5	5	5	5	5	5	5	5	4	5
education	4	2	2	3	8	4	7	8	3	17	8
medical	6	5	6	5	6	5	5	5	5	7	5
conveyance	4	2	3	4	5	3	6	6	3	5	6
other cons. services	5	3	4	5	5	4	6	6	4	7	6
other non-food items	13	12	13	13	15	13	17	21	17	17	19
non- food: total	**44**	**39**	**42**	**43**	**49**	**43**	**54**	**57**	**45**	**62**	**56**
all	100	100	100	100	100	100	100	100	100	100	100

*including n.r.

Ref: Appendix A, Tables 12 & 13

Table S3: Perceived adequacy of food across household types, all-India

sector	household type	per 1000 no. of households getting two square meals every day				
		throughout the year	only some months of the year	in no month	all	no. of sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
rural	self-empl. in non-agr.	989	7	3	1000	14401
	agricultural labour	978	19	2	1000	6673
	other labour	990	8	1	1000	10265
	self-empl. in agr.	995	3	0	1000	16638
	others	990	5	4	1000	11101
	all	**989**	**9**	**2**	**1000**	**59097**
urban	self-employed	994	4	0	1000	15659
	regular wage/salaried	997	2	0	1000	15412
	casual labour	994	5	0	1000	5623
	others	998	0	1	1000	4980
	all	**996**	**3**	**0**	**1000**	**41697**

Table S4: Per 1000 number of agricultural labour households not perceiving themselves as getting enough food every day throughout the year: major States*, rural

State	per 1000 no. of agr. labour hhs not getting enough food every day		State	per 1000 no. of agr. labour hhs not getting enough food every day	
	in some months	in any month		in some months	in any month
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	8	0	Maharashtra	4	6
Arunachal Pradesh	0	0	Manipur	120	0
Assam	27	4	Odisha	100	5
Bihar	10	5	Punjab	0	0
Chhattisgarh	2	0	Rajasthan	0	0
Gujarat	0	0	Tripura	59	0
Haryana	0	0	Tamil Nadu	0	0
Jharkhand	20	0	Uttar Pradesh	28	0
Karnataka	3	0	West Bengal	63	6
Kerala	12	0			
Madhya Pradesh	9	0	**all-India**	**19**	**2**

*and also Manipur and Tripura

Table S6: Per 1000 number of ST and SC households reporting adequate food every day in only some months in the year: major States, rural

State	per 1000 no. of hhs not getting enough food every day in some months		State	per 1000 no. of hhs not getting enough food every day in some months	
	among ST households	among SC households		among ST households	among SC households
(1)	(2)	(3)	(4)	(5)	(6)
Andhra Pradesh	0	5	Madhya Pradesh	6	0
Assam	2	16	Maharashtra	1	11
Bihar	0	20	Odisha	90	37
Chhattisgarh	0	19	Punjab	0**	9
Gujarat	3	0	Rajasthan	0	3
Haryana	0*	0	Tamil Nadu	0	0
Jharkhand	4	0	Uttar Pradesh	0	13
Karnataka	17	0	West Bengal	98	40
Kerala	0	12	**all-India**	**18**	**13**

*no. of hhs in sample = 17 **no. of hhs in sample = 9

Table S7-R: Monthwise proportion (number per 1000) of households reporting not getting two square meals every day by State/UT*, rural

State	per 1000 number of households not getting two square meals every day in											
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Arunachal P.	8	10	22	32	42	45	44	40	32	10	9	8
Assam	2	2	2	2	3	4	5	9	8	3	2	3
Bihar	10	8	8	8	8	8	8	10	9	8	8	8
Chhattisgarh	0	0	0	0	0	0	1	1	8	0	0	0
Manipur	0	0	0	0	4	7	8	8	10	7	0	0
Nagaland	21	21	31	33	23	23	19	19	19	19	19	20
Odisha	3	2	3	4	5	10	29	30	9	2	2	2
Tripura	6	0	0	0	6	11	7	6	2	0	0	0
West Bengal	7	7	9	13	15	16	22	25	21	13	11	10
India	2	2	2	3	4	4	5	6	4	3	2	2

*States/UTs where least 1% households were estimated as perceiving food to be inadequate in at least one month and where at least 14 sample households reported food inadequacy in at least one month

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