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Gendered Time, Seasonality and Nutrition: Insights from Two Indian Districts

Nitya Rao and Raju S
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About this paper

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About LANSA

Leveraging Agriculture for Nutrition in South Asia (LANSA) is an international research partnership. LANSA is finding out how agriculture and agri-food systems can be better designed to advance nutrition. LANSA is focused on policies, interventions and strategies that can improve the nutritional status of women and children in South Asia. LANSA is funded by UKaid from the UK government. For more information, see www.lansasouthasia.org

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Abstract

Some of the key pathways linking agriculture and nutrition run through women's work, yet the evidence on these links are weak. Using time use data from two Indian districts, this paper seeks to fill this gap. In principle, women's agricultural work could have positive and negative implications for nutrition, through increased control over incomes resulting in improved diets to intensifying work burdens leading to tensions and trade-offs between their agricultural work and care responsibilities, as well as attention to their own health. The emerging evidence points to the nuanced ways in which social identity, seasonality and context mediate to shape women's work in agriculture and consequently food intakes and feeding practices. Overall, women's work in agriculture seems to have a negative effect on household nutrition through two pathways: lack of adequate time for care work in peak agricultural seasons and seasonal energy with consequent losses in body weight. Recognition of women's contribution to both agricultural production and domestic reproduction, and supporting them adequately, is central to improving nutritional outcomes.

1. Introduction

Given women's central role in reproduction — child-bearing, child-care and child-rearing — nutritional studies give considerable attention to women's work. Employment data similarly acknowledge women's high work participation in agriculture, a phenomenon referred to as the feminisation of agriculture, albeit as labourers and family workers rather than independent cultivators. Yet, relatively few studies explore the links between women's work in agriculture and nutritional outcomes. This is somewhat unexpected, given the high levels of under- and malnutrition in rural India that is dependent mostly on agriculture for survival.

Agricultural work is seasonal, with peak and lean periods in terms of labour requirements and the availability of food and incomes, with implications for wellbeing. Seasonality shapes the gendered divisions of labour in both production and reproduction in rural areas, and the time available for their performance (Longhurst 1986; Devereux et al. 2012). Jiggins (1986) specifically explores the range of strategies open to women for coping with seasonality and crises. These include switching tasks and responsibilities ascribed by gender, changing the intensity and mix of multiple occupations, and strengthening forms of social organisation and support.

Feminist research on divisions of labour has relied on time allocation studies, which have indeed made significant contributions to understanding the gendered nature of agrarian livelihoods and wellbeing (Dixon-Mueller 1985). Yet, given the complexity of this methodology, seasonal variations in time use and, more importantly, the energy intensity of different activities and patterns of work have often been ignored (c.f Johnston et al. 2015). Without such understanding, however, it is difficult to draw causal links between work and wellbeing, especially in terms of nutritional outcomes (Palmer-Jones and Jackson 1997). While seasonal stresses in work burdens or food consumption may not immediately reflect in nutritional and health status as measured through the Body Mass Index (BMI), they do have short-term implications on body weight, diets and the performance of caring roles, as is discussed in this paper.

In an early review paper on women's work and child nutrition, Leslie (1988) pointed to the possible tension between a positive income effect and a negative time effect. She however noted a lack of comparability and consistency among studies, due to the failure to define women's work in any systematic way. Kadiyala et al. (2014), in a more recent review of the literature on agriculture-nutrition links, propose at least three different pathways that mediate, positively and negatively, women's work (especially in agriculture) and child nutrition. First, women's work and control over income can potentially contribute to greater say in decision-making, with implications for household food expenditures, consumption choices reflecting dietary diversity and consequent improvements in child nutrition. Second, women's work could potentially have negative outcomes, especially for the young child whose nutrition depends more on the mother's time for breastfeeding and supplementary feeding and less on other activities (Glick and Sahn 1998). The double burden of work and care often leads to a time trade-off between the two. Outcomes here reflect the availability and quality of care provided by substitutes in the mother's absence. If there are no substitutes, or these are older siblings — children themselves — rather than adults, outcomes are likely to be negative or less favourable (Engle et al. 1999). A final dimension relates to the implications of women's work for their own health and nutrition. Several studies note that longer working hours for women or increased work intensity can have detrimental effects on their own health (Bamji and Thimayama 2000), and in turn, their ability to care for their children, leading to poor child, and indeed household-level, nutrition outcomes.

While not directly addressing the income effect, this paper focuses on the last two disconnects noted by Kadiyala et al. (2014), namely, the role of time trade-offs and women's own health in mediating household-level nutritional outcomes. Using time use data collected from different social groups in two different rural agricultural communities, it specifically asks: how do seasonal shifts in gendered labour requirements affect care tasks, and in what way does this vary across social groups and agro-ecological locales? Further, what is the extent of seasonal energy stress encountered by different social groups and genders and its likely impact on their health?

Within nutritional studies, an understanding of gender largely refers to a focus on women as a relatively homogenous category, given their role in human reproduction and the care and nurture of the young child. However, there are differences in child-rearing practices across cultures and social groups (Panter-Brick 1991). In India, class, caste and ethnicity play important roles in shaping access to resources (especially land) and social relations, but equally mediate women's agency, social norms about appropriate behaviour, notions of care and food cultures (c.f Desai and Jain 1994). In fact, the Scheduled Tribes (STs), while often economically poor, are seen to be relatively more gender egalitarian than the middle castes and classes, poverty perhaps making men and women cooperate much more within households in the performance of both productive and reproductive work (Rao 2008). Miller similarly found that "propertied groups exhibit more son-biased intra-household food allocation patterns than do the unpropertied" (1997: 1685). Rather than considering men and women as homogenous and often opposing groups, this paper examines the intersections of gender with other forms of social identity and inequality. In doing so, it seeks to also fill the knowledge gap on men's allocation of time for different kinds of work.

Section 2 discusses the methodology adopted, and Section 3 briefly explains the context of the study. This is followed in Section 4 by an analysis of time use data to explore what they tell about

the gendered divisions of labour. The changes in the nature of work and care across seasons and groups are explored in some depth. Section 5 takes a closer look at the gendered nature of care in order to identify the main fault lines, tasks which are likely to be cut when time is scarce. Section 6 highlights the seasonal nature of energy stress and points to their differential nutritional impacts across social groups. Section 7 provides some conclusions and policy recommendations.

2. Methodology

This paper is based on primary data from 12 villages in two Indian districts, Wardha (Maharashtra) and Koraput (Odisha), collected as part of the Farming System for Nutrition (FSN) study under the research programme 'Leveraging Agriculture for Nutrition in South Asia' (LANSA). Detailed baseline livelihood, anthropometric and dietary surveys were conducted with 150 households in each district in early 2013. Given the importance of social identity for both work and food consumption patterns, 30 households in each district, representing different castes/ethnicities, were selected from these 150 households, for the conduct of time use surveys. At least five households were selected under each sub-group, to ensure that the selected cases were not atypical of the group. Sample details are in Annex 1. To investigate seasonal effects, data were collected for one day each across three seasons — planting, harvesting, and the lean agricultural season. In both Wardha and Koraput, the peak planting season is between July and September. While paddy harvest occurs in November-December (in Koraput), cotton harvest takes place between November and March (in Wardha). The lean period, with little cultivation, extends during the hot summer months, from April to June. Data were collected in July 2014, November 2015 and April 2016 in Koraput, and April 2014, November 2015 and July 2016 in Wardha.

The time use survey was based on 24-hour recall methods, using half-hour intervals, with simultaneous activities noted. The activities were classified into the nine categories (and 176 activities) developed by the Government of India in its Time Use Study (MoSPI 1999). This includes three components: first, all economic work captured by the System of National Accounts (SNA), which includes household production for self-consumption, collection of free goods from common property and other resources (Hirway and Jose 2011), paid domestic services, and market-based work; second, the extended SNA (ESNA), which seeks to measure and value unpaid domestic care and voluntary work that falls under the general production boundary (Esquivel et al. 2008); and finally, leisure, personal services or non-productive (NSNA) activities (MoSPI 1999; Hirway 2005). For calculating energy expenditures, the intensity of the activity, as represented by the Physical Activity Levels (PAL) using the energy equivalents of standard activities reported by the WHO/FAO/UNU (1985), were taken into account. The total energy expenditure is the product of PAL and Basic Metabolic Rates (BMR). The ICMR Expert Group for Indians (1989) provides equations for estimating BMR. These vary by age and gender.

While there are problems with time use data in terms of the treatment of simultaneous activities, activity aggregation, insufficient sample sizes and missing information, especially around contextual variables, they nevertheless help in the understanding of complex relationships and gendered divisions of labour on the ground. The inclusion of unpaid work is particularly important for its

contributions to welfare, in this case nutrition, hence such analysis can point to areas needing urgent public action (Esquivel et al. 2008). There is, however, a further problem of recall and reporting, as people often fail to communicate what is not considered as socially and culturally appropriate (Gross 1984). The time use surveys were therefore supplemented with in-depth, qualitative interviews conducted with these households in order to understand socio-demographic, cultural as well as ecological and farming-related factors that shape their activities and diets.

Alongside time use, data were also collected on diets, in order to enable some comparison of food intakes and the burdens of work in these households. Women were asked to recall (and physically show) what was cooked and consumed the previous day, and how it was apportioned to different members of the household. These quantities and portions were measured using weighing scales and standard vessels by the field workers. Energy intake calculations were based on the food consumption data secured from the diet surveys. The procedure for data collection and calculation of energy intakes followed the guidelines and values provided by the National Institute of Nutrition, Hyderabad (2012).

While giving an idea about energy intakes on a particular day, this data cannot be directly associated with an individual's nutritional status, which results from multiple factors over a longer period. Given the small sample size of 30 households in each location, and the fact that data were collected only on one day in each season, they have not been used to undertake any statistical analysis. While any significant relationship cannot therefore be established with seasonal weight losses and changes in the Body Mass Index (BMI), the data are nevertheless useful for identifying potential problem areas and groups who face severe seasonal stresses in food consumption. Like the time use data, this comparison between seasonal energy intakes and expenditures is useful in thinking about social and cultural factors that may be influencing outcomes and appropriate solutions, rather than claiming direct causality. Names of all villages and respondents have been changed to ensure both confidentiality and anonymity.

3. The Context

Koraput, located in the semi-humid tropics, a largely rain-fed subsistence economy known for its indigenous rice varieties, is one of the most backward districts of Odisha and India. While literacy rates and other human development indicators are low in this district, the female-to-male sex ratios are favourable to women and girls (Table 1). This could be a result of tribal culture that gives equal value to women and men, but equally of poverty and hardship, which requires partnership and reciprocal relationships for households to survive. The primary crop grown in the lowlands and midlands during the kharif (monsoon) period (June-October) is rice, with some millets, pulses, niger and maize mix cropped in the uplands. Where some irrigation or residual moisture is available, vegetables and pulses (green gram and black gram) are grown in the rabi (winter) period (January-April). While women control the upland crops, rice, vegetables and pulses in the low- and mid-lands reflect a complementarity in the tasks of men and women.

Table 1: Basic demographic details of the study districts

	Koraput (Odisha)	Wardha (Maharashtra)	All India
Population in millions	1.4	1.3	1210
Literacy rate			
Male	60	91	81
Female	39	82	65
Total	49	87	73
Sex ratio	1032	946	943
Child sex ratio	979	919	918
Main workers in million			
(rural): Total	0.323	0.399	246
Male	0.228 (70%)	0.253 (63%)	178 (72%)
Female	0.095 (30%)	0.146 (37%)	68 (28%)

Source: Census of India, 2011, http://www.censusindia.gov.in/2011-Common/CensusData2011.html

Wardha, in the semi-arid Vidarbha region of Maharashtra, while also dependent on rain-fed agriculture, is primarily reliant on a cash crop, Bt cotton. Planted in July-August, it takes 5 to 8 months to mature. Women harvest cotton manually, in several rounds between November and March, as reflected in their relatively high work participation rates (Table 1). Additionally, some sorghum, pigeon pea, red gram and soyabean are cultivated in the kharif season and Bengal gram and wheat in the rabi. The region has reported severe agrarian distress over the past decade, resulting in a growing number of farmer suicides (Sainath 2014). Sex ratios are much lower, closer to the national average, revealing son preference and underlying gender inequalities.

The study villages comprise a mix of castes and ethnicities as reflected in Annex 1. Across sites, Scheduled Tribes constitute the majority, 42 per cent of the population. However, this category is not homogenous. Among the STs in Koraput, there are at least three sub-groups — the Bhumias, the Gadabas and the Paraojas — all with their distinctive cultures, but more importantly, livelihoods. The Bhumias, for instance, are land-owning cultivators, the Gadabas engage in a mix of activities, land-, forest- and livestock-related, while the Parojas, though owning small plots of land on the hill slopes, are virtually landless and survive by engaging in wage labour. Similarly, the Other Backward Castes (OBC) in Koraput constitute 46 per cent of the population and include the Malis, who are intensive vegetable cultivators, and the Ranas, traditionally ironsmiths, engaged now in a host of farm and non-farm activities. In Wardha, the 21 per cent OBCs include the Malis, also vegetable cultivators, and the Gowaris, who are livestock keepers. The Scheduled Castes (SC), interestingly, have very different social positions in the two sites. In Koraput, the Dombs (9 per cent of population) are landless agricultural workers, often the poorest and most undernourished, while in Wardha, with a history of Dalit mobilisation, influenced by Dr. B. R. Ambedkar's movement for the emancipation of Mahars (12 per cent of population), they are educated and often engaged in public and private sector jobs. Social hierarchies and forms of exclusion/inclusion within their villages reflect the differences in their economic status. Other groups, which include the upper castes, those with resources and secure livelihoods, are negligible in number in Koraput, and constitute 25 per cent of the population in the Wardha villages. These were not included in the sample.

In terms of the nutritional status of social groups in the two sites, as expected, the landless Scheduled Caste households in Koraput are the worst off, with 52 per cent underweight both in the under-5 age group and among adults. They are followed by the Scheduled Tribes, the Parojas and Bhumias, in fact doing worse than the SCs in the 0-5 age group. In Wardha, the situation is more mixed. While Scheduled Caste children under-5 perform better than other groups, this advantage is lost in adulthood. Alongside the SCs, the Scheduled Tribe Gonds consistently have poor nutrition outcomes across age groups, with close to 48 per cent underweight. Annex 2 provides details by age, social group and gender for both districts.

The next section examines the time use survey to see what insights can be obtained into work patterns, especially domestic and care work, and how far care deficits coincide with social and class hierarchies (c.f Palriwala and Neetha 2011).

4. Time Use and the Gender Divisions of Labour

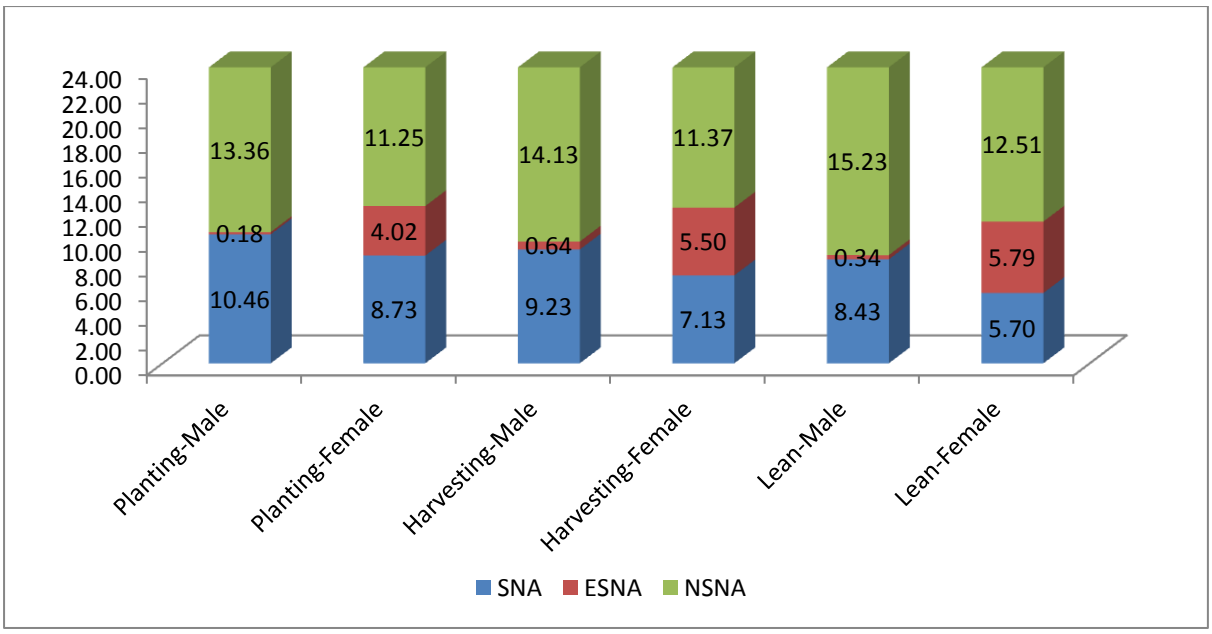
4.1 What do the time use data tell about gendered work patterns?

Figures 1 (a and b) present the average hours spent by men and women on SNA, ESNA and NSNA across seasons in Koraput and Wardha, respectively. Not surprisingly, the time spent on the 'total economy', that is, both productive and reproductive activities (SNA + ESNA) by women is more than men across seasons and across locations. Women do roughly 56 per cent of the total household work. For both men and women combined, however, the total hours spent on household activities in Koraput is on average two hours more than in Wardha, pointing to differences in both agro-ecological and development contexts.

Some interesting nuances emerge as this data is explored further. While the national Time Use Survey (MoSPI 1999; Hirway and Jose 2011) shows that women spend roughly half the time that men spend on SNA activities, this is not the case in the agricultural communities studied, except perhaps for the lean season in the Wardha villages. Women across groups and locations spend almost 75-80 per cent time that men spend on SNA activities. This is an important finding highlighting women's significant productive contributions to household agriculture, even though classified as 'unpaid family helpers' (Rao 2012).

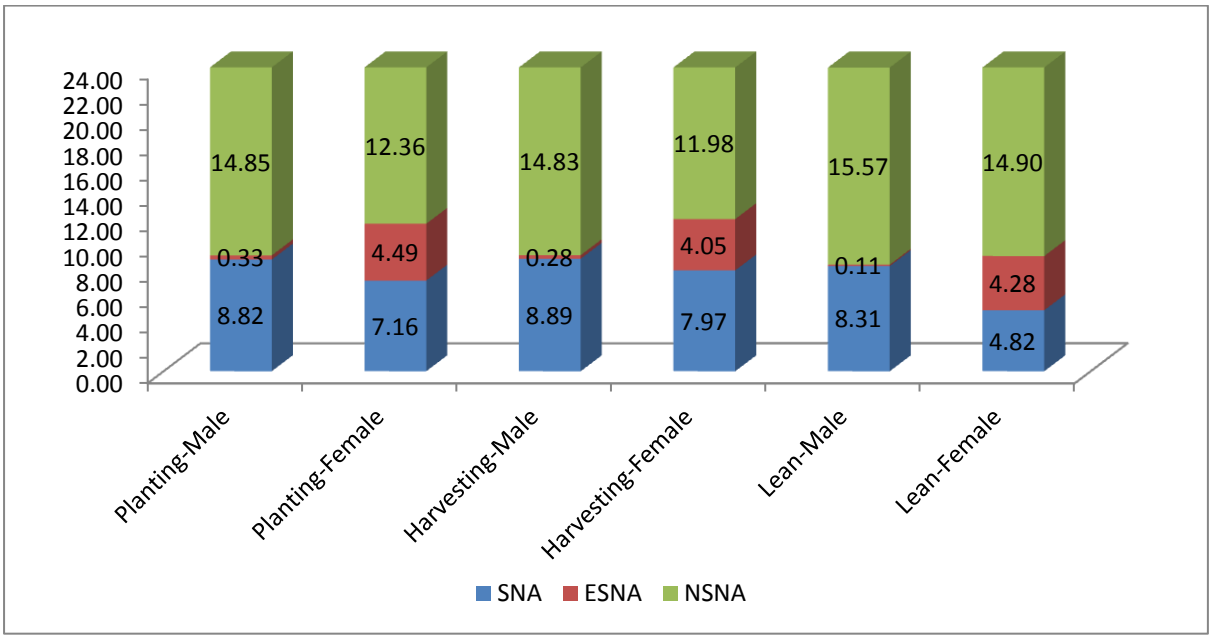
In Koraput, the gap between male and female activity is lowest in the planting season (2.11 hours) as against the harvest season (2.76 hours). This is because both men and women have heavy work burdens in agriculture during the planting season, over 10 hours for men and close to 9 hours for women. While men plough and prepare the land, women plant and transplant the paddy seedlings. Such cooperation is critical, given the centrality of rice to the identity of the tribes in the region. This is the period of stress, when time available to women for care work shrinks by close to 30 per cent compared to other parts of the year. Women's workday already stretches to 13 hours, and time for sleeping and resting is least during this period. Harvests also involve heavy work. However, given that men do all the bundling and transportation of the harvested paddy from the fields to the homestead, women find a little more time for domestic and care work. It is only during the lean season, the hot and dry summer months that they get adequate time for rest and sleep.

Figure 1a: Average hours spent daily on SNA, ESNA and NSNA by season and gender, Koraput



Wardha presents a slightly different picture, with the harvest being the most intense work period for women. The gap between male and female activity is only 1.32 hours as against 2.46 hours in the planting season. The harvest period involves not just long hours of work plucking cotton, but as several women noted, the smell of cotton and cotton dust gives them a headache by the time they are finished, leaving no appetite or indeed a desire to cook or eat. They just go to bed. Vandana, a Gond woman, works a double shift in their cotton fields, as her mother-in-law and daughter take care of household work. They have their own land, and food at home, yet she is hardly able to eat. She is very thin and faces energy deficits right through the year. Not all households are like Vandana's. Women in most are obliged to do some reproductive work, especially in instances where their men are not supportive, extending their working day to around 12 hours. Domestic chores, including cooking, are done in a somewhat lackadaisical manner, with implications for what other family members, including children, eat. Even in this period, however, women here manage to get a little more rest than in Koraput.

Figure 1b: Average hours spent daily on SNA, ESNA and NSNA by season and gender, Wardha



What emerges is that women across the board undertake a larger share of the total activities (SNA+ESNA) performed. Men do more productive (SNA) work than women do, though in peak agricultural seasons, planting in the case of Koraput and harvest in Wardha, the gap between male and female labour narrows down. Women's time for care shrinks quite substantially during these times, and male time contributions do not increase to compensate for this gap. While men are clearly not 'lazy' (Whitehead 1999), are there ways to further enhance household cooperation? This question is explored further in section 5.

4.2 How far does caste/ethnicity mediate gendered time burdens?

Having examined male-female time use disparities across seasons and broad activity classifications, a closer look is next taken at differences across social groups in an attempt to uncover specific cultural norms and social inequalities, but also forms of cooperation that could potentially be harnessed for improving nutrition outcomes. Most time use studies, and studies of women's work and nutrition, miss such fine-grained analysis.

Disaggregating by caste and sub-caste, some interesting patterns emerge. Figure 2a reveals that while the planting season remains the most burdensome for men across caste groups in Koraput, with close to 10 hours of work for many of them, most women too work close to 9 hours on farms, much above the annual average of 7.19 hours. Among the OBC Malis and the ST Parojas, women have equally high agricultural work burdens during the harvesting period, almost at par with men. For the Parojas, this continues into the lean season. With no option but to work, almost 54 per cent of Paroja children (0-5 years) are underweight, the worst in the locality.

Gadaba women appear less involved with SNA activities, but this could be because they follow a mix of livelihoods, and some of their subsistence activities, which are home-based, could have been classified as ESNA. Thirty-year-old Basanti Gadaba noted, "We don't own land, but have leased in 20 cents for cultivating paddy for our consumption. We had no money to extend the lease, so planted some mandya (millets) in my brother's land. We ate gruel made from this during the summer, along with some potatoes and tamarind gravy. During the rainy season, we collect yams, tubers and greens from the forest. We also get small fish from the fields, and eat it with rice. If needed, we sell some yams in the market and buy rice or vegetables. During the winter months, we collect and sell firewood. At this time a variety of vegetables and greens are available. I have a labour card, but have never worked on any public works scheme so far. When agricultural work is available in planting or weeding, I do go for some wage-work, so does my husband."

In Wardha, in comparison to Koraput, the SNA for both men and women is lower by about half an hour across seasons (Figure 2b). Among the Gowaris and Malis, both OBC groups, the planting and harvesting seasons are equally work-intensive, and there is hardly any gender difference in terms of time spent on SNA. The only exception here is the SC Mahars. As noted earlier, with exposure to education, even though landless, several men are in regular employment or forms of self-employment, so their wives don't need to work outside the home. As 25-year-old Sarika, mother of a 3-year-old son, said, "My husband does casual wage labour when available. He plays the Casio and belongs to a band, so can earn more money playing with the band in marriages and other occasions. I used to go for wage labour until my son was born, but then I stopped. I take my son to the anganwadi for a hot cooked meal. He likes it."

Figure 2a: Average hours spent daily on SNA by season, caste and gender, Koraput

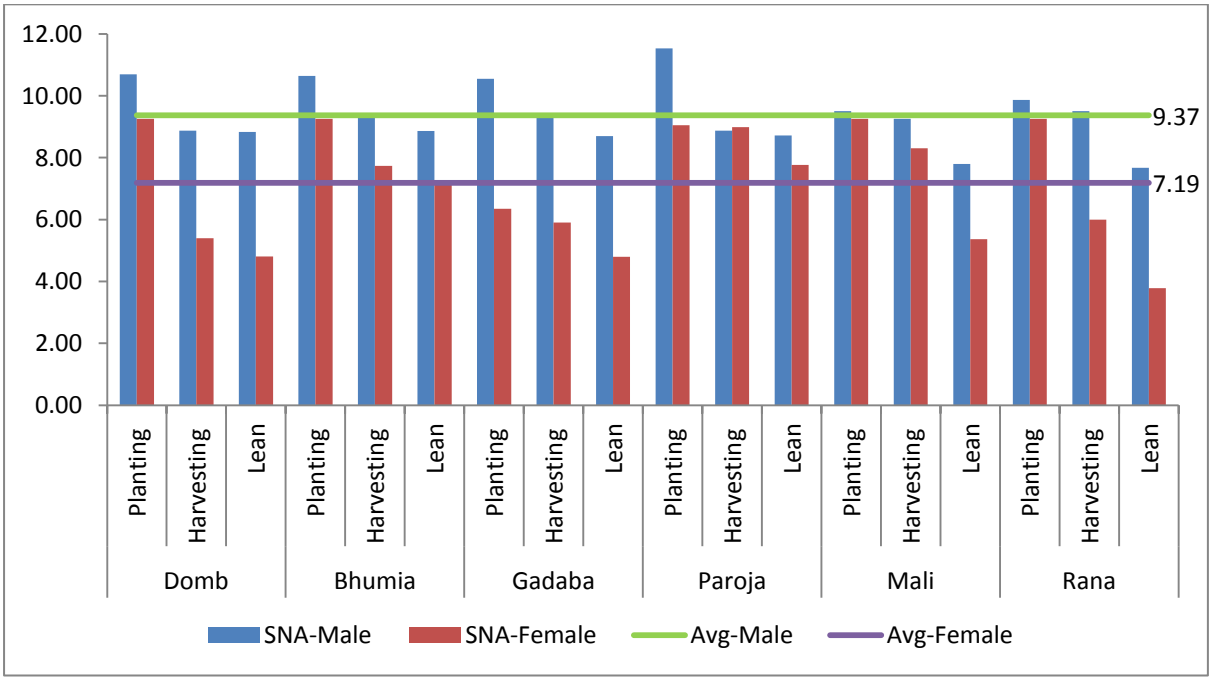
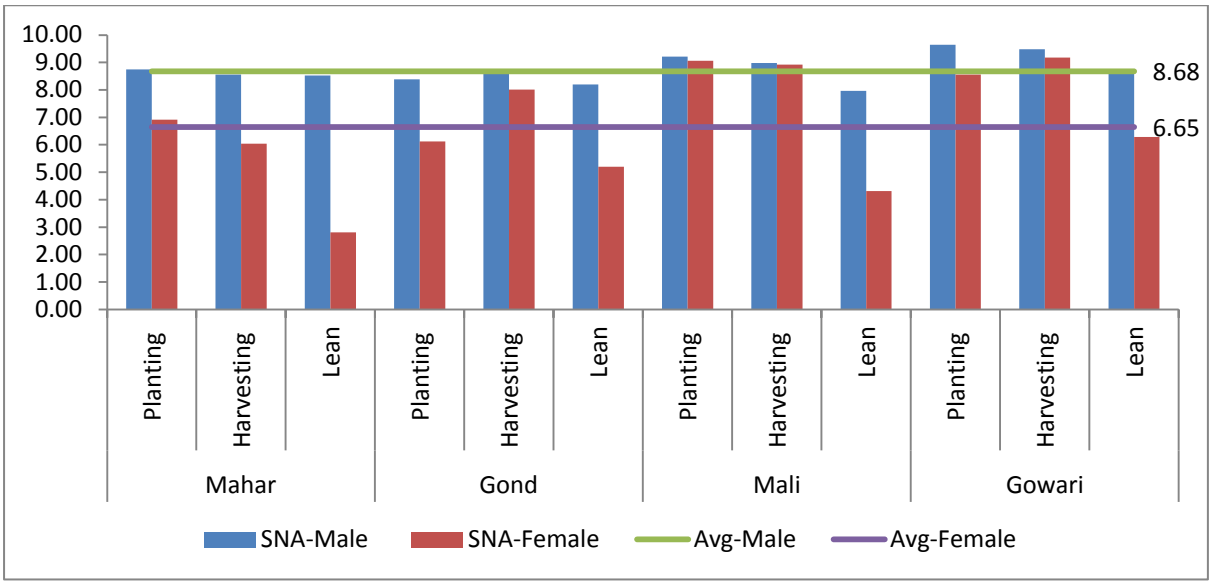


Figure 2b: Average hours spent daily on SNA by season, caste and gender, Wardha



Moving on to ESNA, or reproductive and care work, while it is clear across sites and social groups that this is primarily women's responsibility, some interesting differences are noted. First, in the case of Koraput (Figure 3a), most groups except the Gadabas face a shortfall in time for care work during the planting season. For the Gadabas, the higher levels of ESNA may also reflect a conscious effort to conserve their energy and care for their children. Twenty-five-year-old Latha said, "I used to work, but now that I have a young son, he is only one, I am not going for wage labour. My husband works locally. If he migrates, he can earn more, but it is also very difficult work. We eat a little less during the rainy season, but for my son, he gets three eggs a week and some supplementary mix from the anganwadi centre."

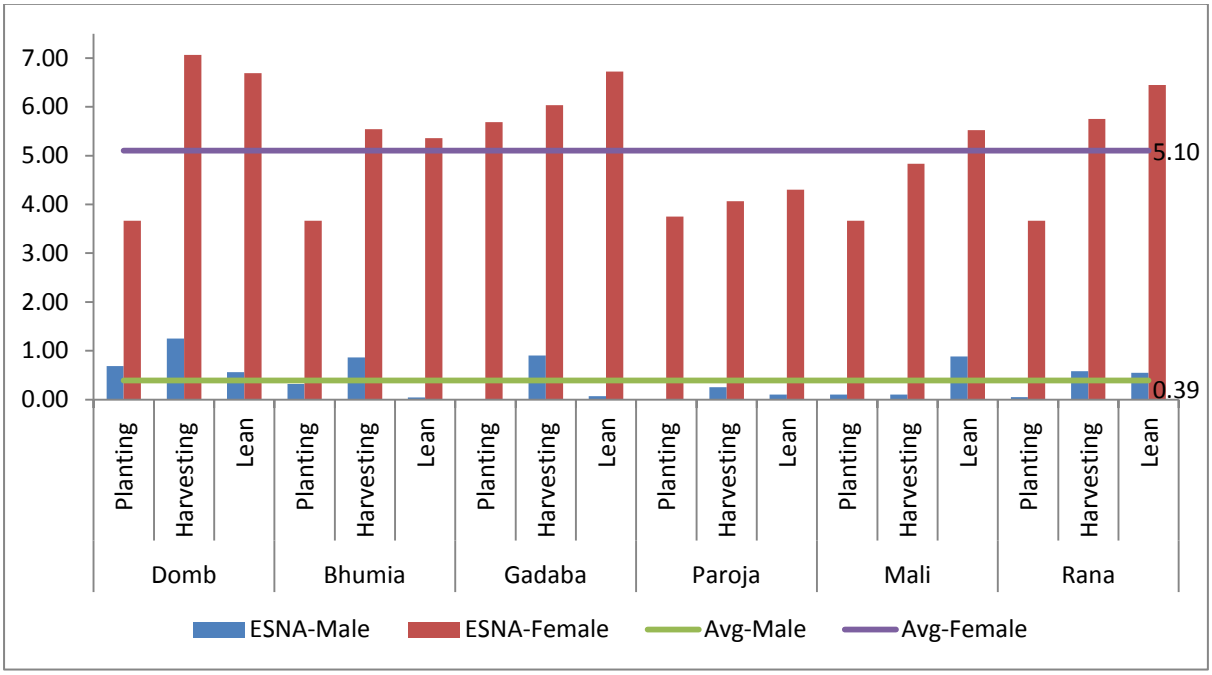
For the Parojas, and to some extent the Malis, the time deficit however runs right through the year. Bhanu Mali, six months pregnant with her third child, noted, "I work in our vegetable fields, though it is my mother-in-law who takes the produce to the market. She keeps and manages the money. My two older children are five and two years old. When I am away, sometimes my husband's sister, who is 15 years old, looks after them, at other times they play on their own."

Second, there is a difference in male contributions across seasons. Among the OBCs, men contribute to ESNA in the lean season, performing a host of domestic activities related to household maintenance, which lie within the production boundary, such as repairing the house, purchasing materials, etc., which include travelling to nearby towns or locations. Among the ST groups, the Parojas get least support from their men — this is because being mainly wage labourers, many Paroja men migrate for work during the lean summer months and are absent from their homes. They bring home cash for household expenses, yet in their absence the entire burden of managing the home falls on the women. As Samari Paroja remarked, "My husband worked as a construction labourer in Vishakhapatnam, when there was no work at home. He was earning Rs 5-6000 per month. Yet the

work was too strenuous, and probably there was not enough food, so he fell ill and returned home." While the income was necessary for the family's sustenance, his migration ultimately added to Samari's care burdens.

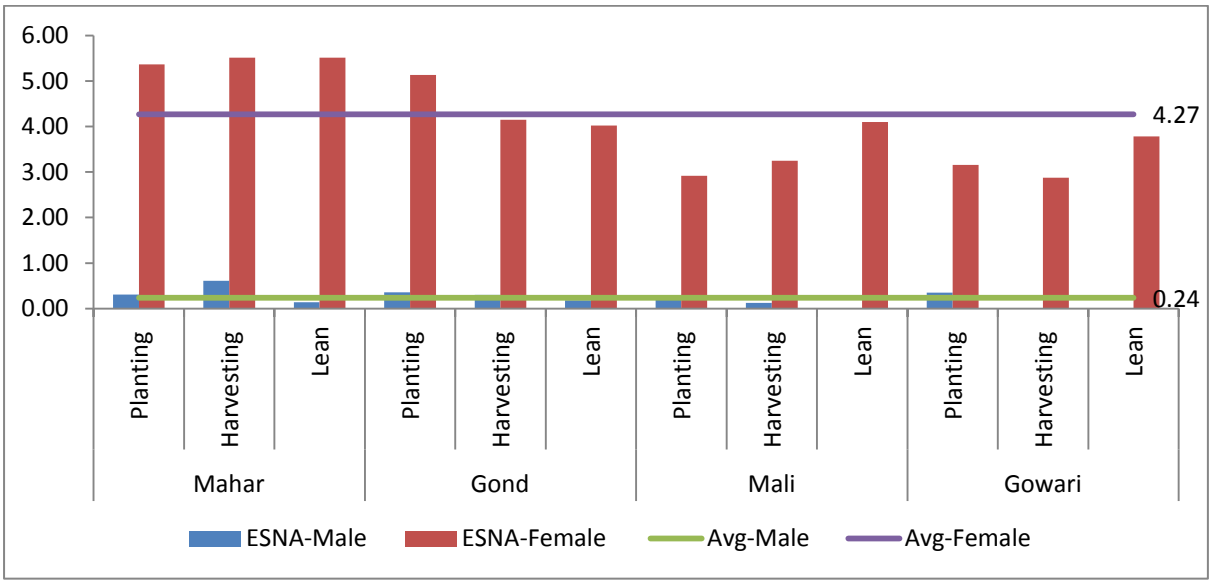
The SC Dombs too are landless labourers; here both husband and wife go for wage labour; hence, when they return home in the evening after work, they cannot manage without sharing some of the domestic work. In many cases, adolescent daughters are roped in for household work. As Subhangi said - "When I go to work, my daughter looks after the youngest, fetches water and even comes with me to collect firewood." Among the land-owning ST groups, such as the Bhumias and Gadabas, in the harvest season, while women are busy harvesting the paddy, men look after the infants and supervise the older children. When they need to transport the paddy to the threshing floors, they pass on the infant to the mother.

Figure 3a: Average hours spent daily on ESNA by season, caste and gender, Koraput



In Wardha, women's ESNA is also lower in comparison to Koraput. The villages in Wardha have better access to infrastructure and services, such as electricity, drinking water and cooking stoves, and this may be a reason that ESNA activities here are less time-consuming than in Koraput. Here too, women with the highest burden of SNA — the Malis and Gowaris — have the least time for ESNA. As Savita, a Gowari woman, explained, "I go for agricultural work, forest work, cooking, whatever is available. My husband also does any kind of labouring task. Sometimes I take my children with me, otherwise leave them in the village. The older one has just started school and the younger one is in the anganwadi. He just goes there, collects the khichdi (rice and lentils) and comes home — there is no one there to look after them or feed them." Even though they own livestock, and can potentially have diverse diets, yet in terms of child nutrition outcomes, especially weight for age, the Gowaris do only slightly better than the STs (Annex 2, Table 2b).

Figure 3b: Average hours spent daily on ESNA by season, caste and gender, Wardha



Male contributions are low, an average of 24 minutes a day, and almost 15 minutes less than in Koraput. This perhaps signals that with greater 'development', gender divisions of labour become more rigid, with the performance of domestic tasks in particular seen as reducing male status, hence confined to women's domain (c.f Rao et al. 2008). An important observation in both sites, however, was that men generally cook and fetch the water in the absence of adolescent girls or another adult woman in the home during the menstrual cycle of their wives each month. Menstrual taboos mean that women are considered 'impure' and not allowed to touch the cooking pots or water. Further, in Wardha, when women were tired and unable to cook during the cotton harvesting period, men did help them.

Time use surveys fail to capture such cooperation for several reasons. Considered as 'women's work', admitting to cooking and performance of household chores formally would amount to a loss of status for men (c.f Gross 1984). Unless the researchers visit during a woman's menstrual cycle, they are unlikely to observe a man cooking the food. But other researcher biases feed into this invisibility too — timings of visits are often during the day, rather than the early mornings or evenings, when food is cooked; their own social norms and expectations around what are appropriate activities for men and women, etc. What emerges from the time use surveys is a picture of rigid divisions of labour, reflecting women's primary responsibility for domestic and care work, alongside agricultural work. Yet, the in-depth interviews and field observations did point to some flexibility in such divisions, especially in the observance of menstrual and other ritual taboos, and greater cooperation, driven by increasing pressures on survival.

Finally, looking at NSNA, or personal time for leisure and sleep, a gap exists on average of 2 to 2.5 hours between men and women in Wardha and Koraput, respectively. In Koraput, women have a 13-hour working day not just during the planting season, but also at harvest time, especially among

the Parojas, Malis, Bhumias and Dombs. This is because ESNA expands to take over the time saved from SNA activities. In fact, calculating the time available for sleeping, the Malis and Parojas appear to be the most sleep-deprived, getting roughly 6-7 hours per day. Several studies have pointed to the link between lack of adequate sleep (less than 7 hours per night on a regular basis) and poor health and nutrition outcomes, including weight gain and obesity, diabetes, hypertension, heart disease and stroke, depression, impaired immune function, among others (Watson et al. 2015).

In Wardha, both men and women get slightly more time for rest and relaxation than in Koraput. This is particularly visible in sleep patterns where women across the board get about 8 hours of sleep or more throughout the year.

Figure 4a: Average hours spent daily on NSNA by season, caste and gender, Koraput

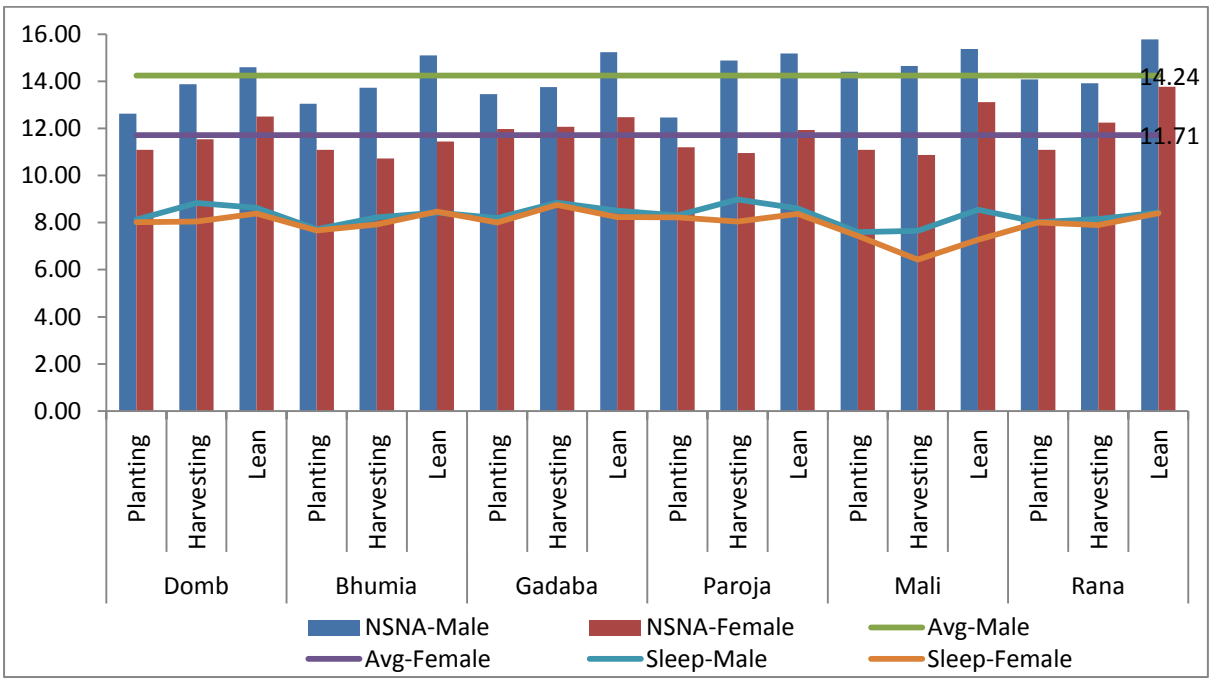
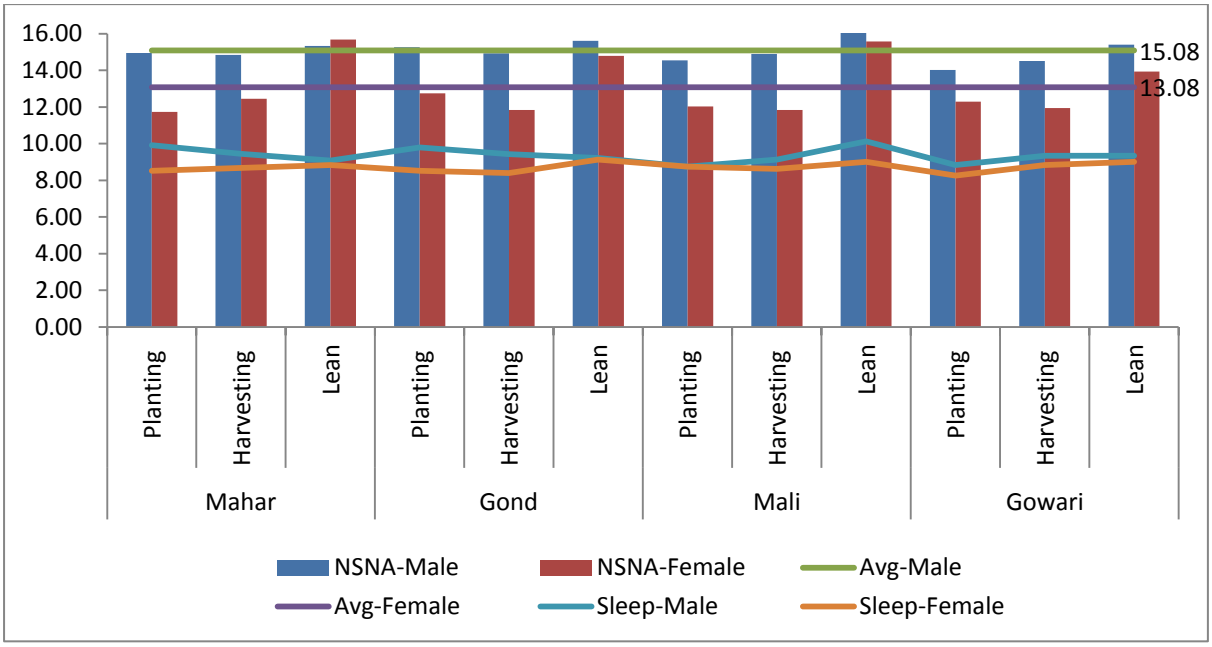


Figure 4b: Average hours spent daily on NSNA by season, caste and gender, Wardha



The above analysis points to variations in time use across locations, seasons and between social groups within each location. The situation in Koraput appears to be worse for women (and men) in terms of the intensity and duration of work throughout the year compared to Wardha. This reflects differences in agro-ecological conditions and cropping patterns, access to technology and infrastructure, and general levels of poverty and development. Within Koraput, the Parojas and Malis confront the worst care deficits, while in Wardha this is the case for the Malis and Gowaris. Except for the Parojas, the others are not necessarily at the bottom of the social hierarchy. However, their livelihood trajectories place heavy burdens on women's time, reinforced by socio-cultural norms that disadvantage women (c.f Miller 1997). This insight provides a clue to understanding the South Asian enigma, wherein despite reduction in levels of poverty, nutritional outcomes are not necessarily improving (Ramalingaswami et al. 1996). While households may have money, women have no time to cook and feed, as discussed further in section 5. This is particularly so during the planting season in Koraput and the harvesting season in Wardha.

This also provides a clue to the disconnect between maternal and child nutrition. While women confront time deficits, and indeed energy deficits, as discussed in section 6, with implications for their own health, the household may be able to provide food to its children. In fact, one limitation of this study is that the work contributions of other household members, especially adolescent daughters as well as mothers/mothers-in-law, have not been taken into account in the time use survey. In selecting the households, paired mother/child duos were not specifically selected, so not all the women in the sample have young children. Nevertheless, from the qualitative data, it is apparent that without the contributions and support of female family members, household reproduction would not be possible. It is those without any support for domestic and care tasks, therefore, who are the worst off nutritionally, even if they own land and are relatively economically secure. Any intervention to address the nutritional problem needs to keep this in mind.

5. A Closer Look at the Gendered Nature of Care

Central to improving nutrition outcomes, especially for the young child, is the time spent on care work — feeding, hygiene and playing. Based on the Indian Time Use Survey, Rajivan (1999) reported that women spent more time in the care of children and ill and elderly people; 3.16 hours per week as compared to 0.32 hours for men. In aggregate terms, women performed 90 per cent of all unpaid care work. The one exception related to men accompanying adults to receive personal care services, linked to restrictions on women's mobility. The data presented in Figures 3a and b are in line with the above conclusion; if anything, male contributions, especially in Wardha, seem to be lower (ibid.). Women are performing 95 per cent of all unpaid work. This is quite possible, as in a general context of agrarian decline, more men have been migrating from rural areas, especially from rain-fed regions, in search of employment.

Tables 3a and b in Annex 3 present some data on unpaid care activities, both household maintenance (category 4) and care for children, sick and elderly (category 5) from the two sites. Three things are stark in these Tables. First, domestic work, especially cooking and cleaning, are almost entirely women's tasks; no contribution from men, across caste groups, was recorded in the time use survey. The exception seems to be the Gadabas in Koraput, where men do provide some support with these tasks. Among the Malis, men assist with household maintenance tasks that require travel, including shopping. Being part of the caste hierarchy (OBC), this is partly a result of restrictions on female mobility. In terms of cleaning utensils or the dwelling during both the planting and harvesting seasons, it is likely that other members of the household, especially daughters, help their mothers, before and after school.

Second, of all the domestic chores, cooking remains the most time consuming, and while as noted earlier, the time use survey failed to capture male contributions, field observations did reveal men taking on some cooking tasks, at least during women's menstrual cycle each month. Provision of clean energy, cooking stoves and better equipment could help reduce the time and drudgery involved in cooking, a recommendation also made by Desai and Jain (1994).

The third significant point relates to care tasks, with time squeezed across groups during the planting season in Koraput and harvest in Wardha. Physical care, that is, bathing, cleaning and feeding children, is exclusively women's responsibility. The problem of time is most intense among the Parojas, followed by the Bhumias in Koraput and the Gowaris and Malis in Wardha. The lack of time to ensure proper feeding and hygiene of the children adversely affects their health and hampers normal growth, as evident from Tables 2a and 2b, Annex 2. Men engage in supervisory tasks, especially holding children while the women are busy at home or in the fields, carrying them back and forth to the fields for breastfeeding and so on. Perhaps reflective of the higher literacy rates in Wardha, in comparison to Koraput, men, and to some extent women, across social groups, are

involved in teaching, training and instruction of their own children. Clearly male interest in children is driven by the higher premium placed on their education.

Both these insights are significant in terms of gender relations, but also for meeting the Sustainable Development Goal 5.4, which calls for the recognition, reduction, and redistribution of unpaid care work. While the 'dirty work' (Anderson 2000) remains almost entirely confined to women, men do take pride as fathers in their children. They are willing to take on care responsibilities, especially holding their children, playing with them and teaching them. This is an area that needs to be recognised so that men can potentially be supported to take on further caring roles.

6. Energy Stress and Women's BMI

Having explored the variations in gendered time use across seasons, social groups and activities in two different agro-ecological locations, with distinct cropping patterns and work cycles, the implications of these work patterns on women's own health are now studied here. The calculations of energy intake and expenditure are only rough estimates; they nevertheless highlight the pressure points in the lives of men and women of different groups, and can give some indication in terms of policy priorities.

While relating to an urban Indian context, Sujatha et al.'s (2000) calculations of energy expended on different activities reveal that their values largely match the range of activities in the global compendium (WHO/FAO/UNU 1985). In their list of activities, the most energy intensive ones are domestic chores like fetching water and washing clothes, and in terms of care activities, walking holding the child. Cooking, scouring vessels and bathing the child are classified as light to moderate. In the rural contexts explored in the present study, women cannot cut back on their SNA activities during the peak planting and harvesting seasons, hence they conserve energy by cutting back on their ESNA activities. The energy intensive task of walking holding the child is taken over by their men, as is water collection (c.f Rao 2008). These tasks could also be performed by adolescent children (Mitra and Rao 2017) or alternate care providers, an element not captured in our time use survey.

Surprisingly, in examining energy intakes and expenditures, it appears that both men and women in Koraput households generally do better than in Wardha (Annex 4). This probably relates to their livelihood and food strategies. Most families in Koraput, with the exception of the Dombs, own some land and practise subsistence cultivation alongside wage labour, while in Wardha, farms are used for cotton production, and food is purchased from the markets. The Public Distribution System under the National Food Security Act, 2013, guarantees 25 kg of foodgrains to all households. In Koraput, this supplements home production, ensuring cereal (energy) adequacy, while in Wardha, this falls short of the household requirements. Market purchases depend on cash availability as well as prices at particular points in time.

Yet, in Koraput, men and women of all social groups do poorly during the harvest season, before their crops are ready to be consumed. They have, by this time, exhausted all stocks of food (Table 2a). The Dombs, landless labourers, are the worst off, with men in particular facing energy stress

across all seasons; they largely belong to the category of chronically undernourished (Annex 2, Table 2a). Mali men also face negative energy gaps during the planting season as, while work burdens are heavy, food is less available; however, these gaps are relatively small, and could be a result of measurement errors. Among women, it is only Mali women, and to a lesser extent the Ranas, who face energy stress during the planting season.

Table 2a: Average energy intake and expenditure gaps by season and gender, Koraput

Caste	Sub-Caste	Gender	Planting Gap	Harvest Gap	Lean Gap
SC	Domb	Male (3)	-861.00	-711.99	-940.81
		Female (4)	82.63	-130.41	-62.39
ST	Bhumia	Male (5)	286.86	-383.31	-262.72
		Female (5)	117.14	-315.94	-76.59
	Gadaba	Male (5)	-61.09	-674.03	154.85
		Female (5)	-152.15	-635.32	-173.68
	Paroja	Male (3)	684.72	-230.31	-158.51
		Female (3)	486.48	-552.15	10.85
OBC	Mali	Male (4)	-181.89	-470.73	69.21
		Female (4)	-575.50	-386.89	13.99
	Rana	Male (4)	204.60	-416.70	-588.26
		Female (4)	-328.34	81.83	-58.34

(Number of households within parentheses)

It is worth noting that the main item of consumption is rice, which provides energy for work, and less of other nutrients. As Kamala Paroja said, "We leave for our fields for transplantation early in the morning. There is no time to go to the forest to collect vegetables or greens, and no time to cook. We only eat once a day — rice and ambli (sour gruel of rice flour and tarmarind)." This finding seems to also echo that by Kumar and Hotchkiss (1988), who found that deforestation in the hill areas of Nepal had a negative effect on nutrition, not just due to the loss of dietary diversity, but also to increased time spent for fuel collection and food preparation. Nutritional surveys among tribal groups from 1985-2008 point to a secular decline in dietary diversity, especially among men (NNMB 2009: 65) resulting largely from a collapse in agriculture- and ecosystem-based livelihoods and dependence on migrant work.

In Wardha, there is energy stress among all the groups throughout the year, with the SC Mahar's perhaps doing slightly better than the rest in the lean season (Table 2b). As noted earlier, farming here is dominated by cotton production, and all food items need to be purchased from the market. Over the past few years, cotton prices have fluctuated sharply, and drought conditions have increased the distress among farmers. The Public Distribution System has been a saving grace, but the quantities available are not enough to fulfil their energy requirements. On the open market, cereals are expensive, as are other food items. People can hardly afford to buy pulses, vegetables or fruits.

Table 2b: Average energy intake and expenditure gaps by season and gender, Wardha

Caste	Sub-Caste	Gender	Planting Gap	Harvest Gap	Lean Gap
SC	Mahar	Male (5)	-622.57	-869.59	-302.71
		Female (5)	-586.59	-479.55	-86.03
ST	Gond	Male (13)	-564.59	-567.58	-810.36
		Female (13)	-235.72	-608.71	-328.89
OBC	Mali	Male (4)	-574.32	-847.73	-1292.17
		Female (4)	-304.89	-844.56	-532.48
Others	Gowari	Male (5)	-755.01	-842.5	-1204.66
		Female (5)	-659.15	-1055.33	-757.26

(Number of households within parentheses)

Seasonal weight losses due to inadequate food intakes are common among most poor, rural people in developing countries, 65 per cent according to one estimate (Ferro-Luzzi et al. 1994), and an area of concern in terms of potentially negative nutritional and functional implications. While seasonal stresses aggravate the problem for chronically undernourished people (BMI< 18.5), they can push otherwise well-nourished people into the category of CED (chronic energy deficiency). What also emerges is that thinner people are likely to be worst affected in terms of functional impairment. This would suggest that they should sacrifice physical activity in order to save energy and avoid depletion of their lean tissues (ibid. 170), a point noted by Chanchani (2015) in her ethnography of a marginal, tribal community in Chhattisgarh.

Most studies of seasonal body weight changes are located in Africa. What they indicate is a rather modest gender difference, with women tending to have slightly smaller weight losses (1.4-4.6 per cent) than men (2.3-6.4 per cent) of body weight (Ferro-Luzzi et al. 1987: 47). The present study only partially confirms this finding (see Tables 3a and 3b below). While the data on changes in weight across seasons collected for the sample of 30 households in each location are not statistically significant, due primarily to the small sample size, they are nevertheless indicative of the periods of stress and the groups that are most vulnerable. .

In Koraput, in line with the energy stress noted in Table 2a, the Schedule Tribe men all experience a loss of body weight of 2-3 per cent during the harvest season, while for women, except the Gadabas, this is somewhat higher at between 3-4 per cent. For Bhumia and Domb (SC) women, the weight loss was delayed to the lean season, and recorded at the time of planting. Time lags in the visibility of weight loss are common. Among the Parojas, perhaps the most marginalised among the tribes, and the thinnest among all the groups studied, women reveal a decline of 1.56 kg, that is, a little less than 4 per cent of body weight, while men have a slightly lower decline of 1.15 kg or 2.5 per cent of body weight. It is only among the OBC Malis that the pattern corresponds with what the literature says: the weight loss for men is 4 per cent as against 2.5 per cent for women. As already mentioned, one possible strategy, especially for women, is to reduce physical activity during times when adequate food is not available. However, this is not possible in agricultural communities, when the physical

activity is often most intense during the planting and/or harvesting periods, as revealed in the time allocation study presented in the earlier part of this paper.

In nutrition studies, the focus has largely been on energy intakes, rather than on strategies for reducing energy expenditures and thereby improving wellbeing. In fact, groups such as the Gadabas who seek to preserve their ecosystem-based lifestyles are often termed as 'traditional' and even 'lazy', their lifestyles blamed for their poverty. There are however fewer underweight children under five among the Gadabas compared to other ST children, whether Paroja or Bhumia (Annex 2, Table 2a).

Table 3a: Changes in mean body weight by season, gender and social group, Koraput

Caste	Sub-Caste	Season	Male		Female	
			Number	Mean Weight	Number	Mean Weight
SC	Domb	Planting	3	**49.40**	4	**39.38 (-2.7%)**
		Harvesting	4	**48.70 (-1.4%)**	4	40.82
		Lean	4	48.97	4	**40.50**
ST	Bhumia	Planting	5	**46.84**	6	**42.25 (-3.27%)**
		Harvesting	6	**45.88 (-2%)**	6	43.13
		Lean	6	47.50	6	**43.68**
	Gadaba	Planting	5	**51.12 (-2.8%)**	5	42.96
		Harvesting	5	53.32	5	43.16
		Lean	5	**52.58**	5	42.74
	Paroja	Planting	5	**44.92**	5	**39.50**
		Harvesting	5	**43.77 (-2.5%)**	5	**37.94 (-3.9%)**
		Lean	5	44.76	5	39.68
OBC	Mali	Planting	4	**51.40**	4	41.82
		Harvesting	4	**49.32 (-4%)**	4	**41.60**
		Lean	5	54.18	4	**40.56 (-2.5%)**
	Rana	Planting	5	**51.58**	5	**50.10**
		Harvesting	5	**50.86 (-1.4%)**	5	**49.08 (-2%)**
		Lean	4	52.92	5	51.06

In Wardha, men generally have a higher mean weight than in Koraput. Despite energy stresses, their weight losses are marginal, less than 2 per cent, except for the Scheduled Tribe Gonds, who appear to lose over 5 per cent of their body weight between the lean and planting periods. Women across groups experience a weight loss of between 2-3 per cent between the lean and planting seasons, with Mali women doing particularly badly. While in Koraput, most of the weight loss was recorded in the harvest period when work is intense but the new crop not yet ready for consumption, in Wardha it is in the planting season. This is because employment is low during the lean season, and reserves of cash and food are exhausted. As food has to be purchased from the market, the minimum is consumed. Rather than a substantial reduction in activity levels, energy intakes reduce at this time, especially among Mali women.

Table 3b: Changes in mean body weight by season, gender and social group, Wardha

Caste	Sub-Caste	Season	Male		Female	
			Number	Mean Weight	Number	Mean Weight
SC	Mahar	Planting	6	**54.68**	5	**41.32 (-2.5%)**
		Harvesting	5	**53.80 (-1.6%)**	5	41.88
		Lean	6	54.42	6	**42.40**
ST	Gond	Planting	14	**52.63 (-5.4%)**	13	**39.60 (-1.9%)**
		Harvesting	13	53.13	14	39.05
		Lean	12	**55.68**	13	**40.39**
OBC	Mali	Planting	4	50.20	4	**40.52 (-4.9%)**
		Harvesting	4	58.03	4	41.48
		Lean	3	58.41	4	**42.65**
Others	Gowari	Planting	5	**53.01 (-1.6%)**	6	**44.53 (-2.6%)**
		Harvesting	6	53.83	5	44.78
		Lean	5	**53.90**	5	**45.76**

Predicting the longer-term outcomes of shifting BMIs is beyond the scope of the data available; however, our field insights and baseline nutrition data reveal that the nutritional deprivation of adults does affect the children in their care. In Wardha, for instance, of the 16 under-5 children in our sample, 10 were underweight. The mothers of these 10 children all had a BMI < 18.5, in fact, dropping to below 18 in the planting and harvesting seasons. There is an intergenerational effect, be it through income (in the case of men), time (in the case of women), or genetics. Local recognition of this link makes women try and conserve their bodies and prevent excessive energy depletion, as perhaps in the case of the Gadabas; however, this is often not possible for the majority, given the seasonality of agricultural work cycles.

7. Conclusions

The evidence presented in this paper points to the ways in which gender, location and social identity intersect to shape the duration and intensity of work across seasons and, in turn, nutritional outcomes. Despite the ambiguity in the literature on gender-agriculture-nutrition links (Kadiyala et al. 2014), there is clear evidence of the negative implications of women's seasonally high work burdens in agriculture on nutritional outcomes, both of their children through time trade-offs, and their own health due to energy stress.

While there has been a debate around the feminisation of agriculture in India, the time use study presented here provides a new insight. It is not just that more women are farming in rural areas, due to male migration or diversification, but even within household production, women's contribution to agricultural production is almost the same as that of men. While the earlier Time Use Survey conducted by the Government of India in 1998 showed women's SNA (productive contributions) to be roughly half that of men, women contribute about 75-80 per cent of male SNA contributions. Additionally, they bear almost the entire burden of domestic and care work. There are variations by social group and location, pointing to the role of differential access as well as differences in institutional and infrastructural support on both work and consumption patterns.

The implications of women's increasing SNA contributions to agriculture, without a simultaneous reduction or redistribution of care and domestic work, has meant that during peak agricultural seasons, the time available for the latter is squeezed, and for some women by almost 30 per cent. This time trade-off has implications for children's health and nutrition, as seen in the poor child nutrition outcomes among the Parojas, Bhumias and Dombs (SC) in Koraput, or the Gowaris, Gonds and Malis in Wardha. It is apparent that these groups do worse than others in terms of seasonal weight losses and changes in BMI experienced by women. While a small sample meant that this point cannot be proved statistically, the combination of methods used in this study indicates their significance.

Several strong messages emerge for policy. First, it is important to recognise women as farmers and agricultural workers and ensure their equal entitlements, given their significant contributions to farming. This would mean that research and extension as well as technology and finance are sensitive to women's gendered needs and interests. At the same time, women's reproductive labour and care work need to be recognised and their performance supported. The latter could be done through infrastructural support that can reduce the drudgery and effort/time intensity of tasks, through, for instance, the provision of clean energy, drinking water, etc. Efforts can also be made to redistribute this work across institutions: while men can be supported to take on additional care tasks, state services for reliable childcare and feeding need to be strengthened in the event of seasonal male migration. Most importantly, policies need to be sensitive to contextual differences in food habits, tastes, agricultural practices and gender norms. Without such context-specific interventions, we will not just fail to meet the SDG Goals of reducing hunger and poverty and moving towards gender equality, but also fail to stop the intergenerational reproduction of nutritional deprivation.

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Annex 1: Distribution of sample across the two sites

		Koraput	**Wardha**
SC	Domb	4	
	Mahar		6
ST	Gond		14
	Bhumia	6	
	Gadaba	5	
	Paroja	5	
OBC	Mali	5	4
	Rana	5	
	Gowari		6
		30	30

Annex 2: Nutritional status across social groups

Figure 1a: Underweight status in Koraput by caste, gender and age group

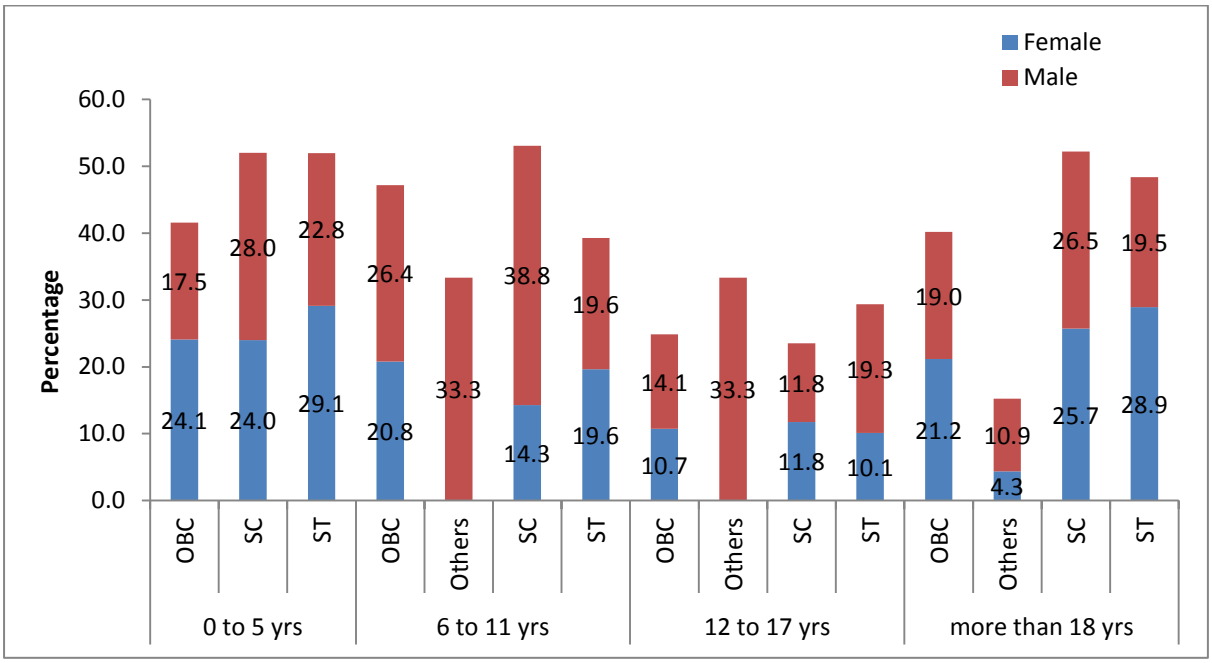

Table 2a: Nutritional status of all households according to caste and sub-caste, Koraput

Caste	Sub-Caste	Nutritional Status		Age group (years)				
				0 to 5	6 to 11	12 to 17	More than 18	Total
OBC	Gouda, Kamara, Paiko	Normal	n	21	17	24	65	127
			%	67.70	60.70	85.70	48.50	57.50
		Underweight	n	10	11	4	69	94
			%	32.30	39.30	14.30	51.50	42.50
	Mali	Normal	n	35	30	34	163	262
			%	62.50	57.70	61.80	64.90	63.30
		Underweight	n	21	22	21	88	152
			%	37.50	42.30	38.20	35.10	36.70
	Rana	Normal	n	41	47	75	213	376
			%	51.90	48.00	79.80	60.50	60.40
		Underweight	n	38	51	19	139	247
			%	48.10	52.00	20.20	39.50	39.60
	Total	Normal	n	97	94	133	441	765
			%	58.40	52.80	75.10	59.80	60.80
		Underweight	n	69	84	44	296	493
			%	41.60	47.20	24.90	40.20	39.20

Others	Total (Karan, Brahmin, Benayat Odia)	Normal	n	6	4	2	39	51
			%	100.00	66.70	66.70	84.80	83.60
		Underweight	n	0	2	1	7	10
			%	0.00	33.30	33.30	15.20	16.40
SC	Barik, Dombo	Normal	n	12	23	39	65	139
			%	48.00	46.90	76.50	47.80	53.30
		Underweight	n	13	26	12	71	122
			%	52.00	53.10	23.50	52.20	46.70
ST	Bhumia	Normal	n	23	58	44	165	290
			%	41.10	61.10	71.00	49.80	53.30
		Underweight	n	33	37	18	166	254
			%	58.90	38.90	29.00	50.20	46.70
	Gadaba	Normal	n	20	17	11	65	113
			%	62.50	63.00	68.80	54.60	58.20
		Underweight	n	12	10	5	54	81
			%	37.50	37.00	31.20	45.40	41.80
	Paroja	Normal	n	18	24	22	90	154
			%	46.20	58.50	71.00	52.90	54.80
		Underweight	n	21	17	9	80	127
			%	53.80	41.50	29.00	47.10	45.20
	Total	Normal	n	61	99	77	320	557
			%	48.00	60.70	70.60	51.60	54.70
		Underweight	n	66	64	32	300	462
			%	52.00	39.30	29.40	48.40	45.30

Figure 1b: Underweight status in Wardha according to caste, gender and age group

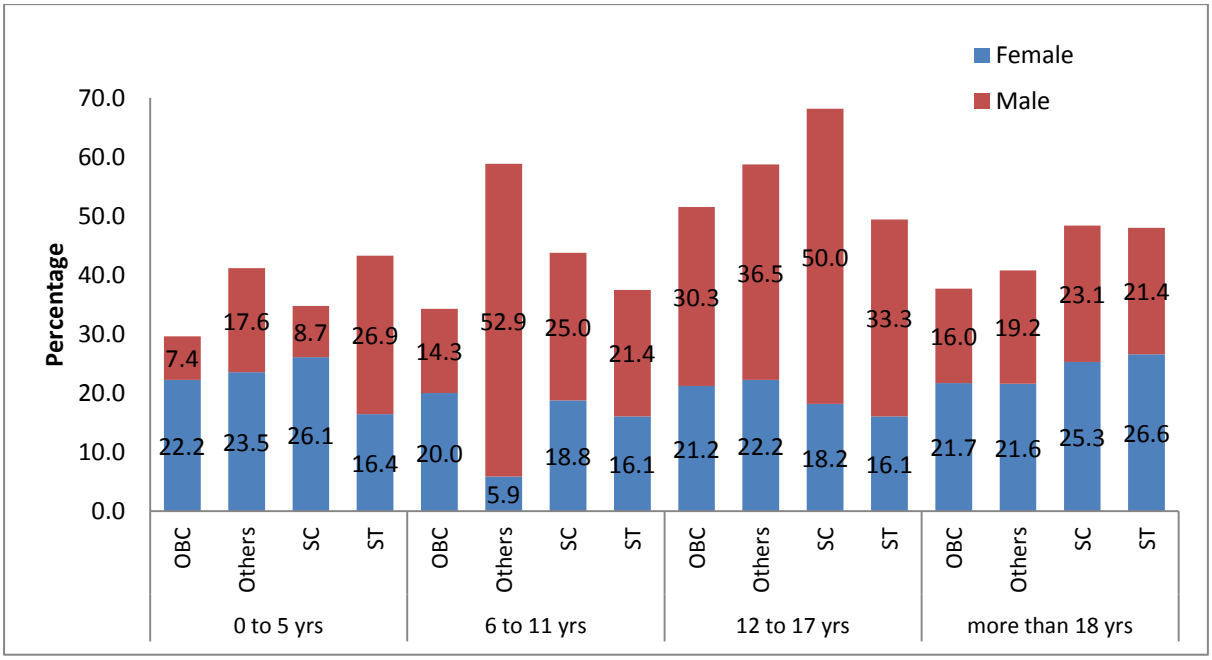

Table 2b: Nutritional status of all households according to caste and sub-caste, Wardha

Caste	Sub Caste	Nutritional Status		Age group (years)				
				0 to 5	6 to 11	12 to 17	more than 18	Total
OBC	Mali	Normal	n	13	16	15	123	167
			%	68.40	72.70	57.70	63.10	63.70
		Underweight	n	6	6	11	72	95
			%	31.60	27.30	42.30	36.90	36.30
	Dhobi, Kalar, Kunabi & Wani	Normal	n	6	7	1	52	66
			%	75.00	53.80	14.30	60.50	57.90
		Underweight	n	2	6	6	34	48
			%	25.00	46.20	85.70	39.50	42.10
	Total	Normal	n	19	23	16	175	233
			%	70.40	65.70	48.50	62.30	62.00
		Underweight	n	8	12	17	106	143
			%	29.60	34.30	51.50	37.70	38.00
Others	Bhoi, Dhangar, Gadi, Lohar, Gavali, Lodhi	Normal	n	5	1	3	54	63
			%	62.50	25.00	33.30	61.40	57.80
		Underweight	n	3	3	6	34	46
			%	37.50	75.00	66.70	38.60	42.20
	Gowari	Normal	n	15	6	23	165	209
			%	57.70	46.20	42.60	58.50	55.70
		Underweight	n	11	7	31	117	166
			%	42.30	53.80	57.40	41.50	44.30
	Total	Normal	n	20	7	26	219	272
			%	58.80	41.20	41.30	59.20	56.20
		Underweight	n	14	10	37	151	212
			%	41.20	58.80	58.70	40.80	43.80
SC	Mahar and Mang	Normal	n	15	9	7	96	127
			%	65.20	56.20	31.80	51.60	51.40
		Underweight	n	8	7	15	90	120
			%	34.80	43.80	68.20	48.40	48.60
ST	Gond	Normal	n	38	31	44	305	418
			%	56.70	59.60	50.60	51.60	52.40
		Underweight	n	29	21	43	286	379
			%	43.30	40.40	49.40	48.40	47.60

Annex 3: Unpacking domestic and care work

Table 3a: Average time (hours: minutes) spent on unpaid care and domestic work, Koraput

Activity	Paroja		Bhumia		Gadaba		Mali	
	M	F	M	F	M	F	M	F
Physical care of children	-							
Planting		0.58		1.17		1.19		2.58
Harvesting		--		1.32		1.81		3.00
Lean		--		1.69		1.94		3.00
Supervising children needing care								
Planting	--	--	1.92	1.00		3.00	0.50	1.20
Harvest	1.25	--	1.03	--	0.34	--	0.50	1.08
Lean	--	--	0.25	1.33	0.33	--	--	1.00
Cooking food items								
Planting		2.58		2.49		2.47		2.20
Harvest		2.25		2.29	2.83	2.23		2.19
Lean		2.20		2.22		2.12		2.34
Cleaning of dwelling								
Planting		0.50		0.46		0.50		0.50
Harvest		0.95		1.08	1.00	1.00		0.95
Lean		1.00		1.00		1.27		1.20
Cleaning of utensils								
Planting		0.50		0.50		0.48		0.48
Harvest		0.88		0.88		1.00		0.80
Lean		0.90		1.00		0.90		0.95
Care of textiles								
Planting		0.17		0.21		0.20		0.22
Harvest		0.17		0.20		0.29		0.21
Lean		0.20		0.24		0.78		0.70
Travel related to household maintenance								
Planting		--		--				0.28
Harvest		--		--				--
Lean	0.50	--		--			1.84	--
Household maintenance/management								
Planting						0.53		0.25
Harvest						0.33		--
Lean						0.50	0.50	--

Table 3b: Average time (hours: minutes) spent on unpaid care and domestic work, Wardha

Activity	Gond (ST)		Gowari		Mahar (SC)		Mali	
	M	F	M	F	M	F	M	F
Physical care of children								
Planting								
Harvesting	0.60	2.06	0.25	0.78	0.39	1.40	0.50	1.25
Lean	0.94	1.94	--	0.17	2.92	1.82	--	0.25
	0.86	1.47	--	1.54	0.33	1.22	--	1.00
Teaching, instruction of own children								
Planting	0.42	0.17	0.79		0.34		0.50	
Harvest	0.50	--	--		0.38		0.50	
Lean	--	--	--		0.50		--	
Accompanying children/travel for care								
Planting			0.25			0.25		
Harvest			--			--		
Lean			--			--		
Cooking food items								
Planting		2.02		1.38		2.15		2.21
Harvest		1.68		1.53		1.88		1.36
Lean		1.29		1.28		1.93		1.59
Cleaning of dwelling								
Planting		0.25		0.36		0.25		0.25
Harvest		0.99		0.74		1.22		0.75
Lean		1.09		1.38		1.39		0.98
Cleaning of utensils								
Planting		0.47		0.44		0.42		0.25
Harvest		0.45		0.39		0.52		0.44
Lean		0.56		0.57		0.51		0.59
Care of textiles								
Planting		1.18		0.97		1.49		1.25
Harvest		0.63		0.63		0.67		0.58
Lean		0.68		0.69		0.67		0.71

Annex 4: Individual Level Energy Intakes and Expenditures

Table 4a: Male individual weight, physical activity level, basal metabolic rate and total energy expenditure by season, Koraput

hhid	Caste	Sub-Caste	Planting					Harvesting					Lean				
			Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake
1334	OBC	Rana	49.70	2.2	1365.65	3032.88	2540.10	45.2	1.8	1325.68	2419.37	3117.70	49.6	1.9	1373.64	2588.93	3431.30
1496	OBC	Rana	46.30	1.6	1337.67	2184.86	NA	44.5	1.9	1318.05	2493.31	3572.90	49.5	1.6	1372.55	2242.78	882.50
1526	OBC	Mali	45.70	2.2	1331.13	2928.49	2742.30	45.4	2.3	1327.86	3065.14	3128.90	46.3	2.2	1337.67	2900.14	1702.30
1531	OBC	Mali	58.30	1.8	1468.47	2643.25	2672.40	52.3	2.3	1403.07	3227.06	2749.70	54.6	2.2	1428.14	3120.09	3782.70
1567	OBC	Mali	NA	2.3	NA	NA	2729.30	NA	2.3	NA	NA	3117.10	64.5	2.2	1580.25	3465.58	5221.00
1577	OBC	Mali	52.60	2.2	1406.34	3152.55	2741.40	49.8	2.4	1375.82	3336.36	2351.40	54.7	1.9	1429.23	2729.43	2551.40
1602	OBC	Mali	49.00	1.9	1367.10	2597.49	2438.10	49.8	2.2	1375.82	3049.73	2565.40	50.8	2.7	1386.72	3709.48	3013.40
1623	OBC	Rana	55.60	1.9	1439.04	2674.22	4835.70	58.7	2.1	1472.83	3129.76	2653.50	57.7	1.9	1461.93	2777.67	1765.30
1664	OBC	Rana	49.20	2.2	1369.28	3063.76	2575.00	48.8	2.4	1364.92	3207.56	1705.00	NA	2.1	NA	NA	NA
1667	OBC	Rana	57.10	2.2	1455.39	3238.24	2876.70	57.1	2.4	1455.39	3462.62	1580.00	54.9	2.0	1431.41	2906.56	2083.80
1215	SC	Domb	NA	2.2	NA	NA	3485.90	45.9	2.2	1310.55	2861.37	2242.90	45.3	2.1	1301.85	2780.90	1066.80
1218	SC	Domb	44.50	1.7	1318.05	2257.16	962.57	46.2	1.7	1336.58	2288.89	1046.00	45.3	1.7	1326.77	2240.77	2065.40
1223	SC	Domb	50.30	2.2	1374.35	3063.66	2888.50	49.2	2.2	1358.40	3033.76	1664.40	50.2	1.9	1380.18	2679.85	1391.80
1407	SC	Domb	53.40	2.1	1415.06	2942.15	1828.90	53.5	1.7	1416.15	2366.15	2748.90	55.1	2.3	1433.59	3235.53	2649.80
1002	ST	Gadaba	50.40	2.2	1382.36	3052.71	2696.90	50.0	2.2	1378.00	2968.44	1566.30	47.5	2.0	1350.75	2706.19	2545.00
1005	ST	Gadaba	52.70	2.1	1409.15	2888.76	2556.90	61.6	2.1	1538.20	3204.58	1879.30	58	2.1	1486.00	3167.04	3370.10
1008	ST	Gadaba	52.30	2.2	1403.07	3139.37	3396.90	53.5	2.5	1416.15	3534.47	3703.00	52.5	2.1	1405.25	3014.46	3201.80
1043	ST	Paroja	44.50	2.2	1318.05	2932.66	NA	43.3	2.5	1304.97	3208.05	1528.50	44.6	2.1	1319.14	2826.07	2307.70
1044	ST	Paroja	46.60	2.2	1340.94	3005.94	3197.20	46.7	2.3	1342.03	3025.16	2871.10	50.3	2.1	1381.27	2876.69	2845.70
1047	ST	Paroja	49.90	2.2	1376.91	2971.83	4257.20	48.7	2.2	1363.83	2954.97	3675.00	49.7	2.2	1374.73	3002.45	3246.70
1171	ST	Bhumia	47.00	2.1	1326.50	2741.43	2984.70	46.8	2.1	1323.60	2735.44	1985.90	46.6	1.9	1320.70	2479.98	1983.00
1186	ST	Bhumia	49.90	2.2	1376.91	3057.89	3341.30	48.0	2.2	1356.20	2915.83	3142.50	51.2	2.1	1391.08	2964.74	2471.10
1209.1	ST	Bhumia	43.30	2.3	1272.85	2890.43	3112.00	39.4	2.2	1262.46	2808.97	2939.90	43.5	2.1	1307.15	2744.11	2412.00

1240	ST	Bhumia	NA	2.2	NA	NA	3178.70	47.7	2.3	1336.65	3052.02	2865.20	46.3	2.1	1316.35	2821.93	3072.21
1351	ST	Bhumia	46.40	2.2	1317.80	2866.22	3551.70	49.3	2.5	1359.85	3450.62	2217.70	51	2.2	1384.50	2980.52	1903.70
1375	ST	Paroja	38.80	2.2	1255.92	2815.35	3392.90	37.1	1.7	1236.85	2154.17	3035.80	35.2	1.9	1216.68	2353.09	2824.80
1379	ST	Gadaba	42.70	2.2	1298.43	2889.01	3218.90	42.8	2.3	1299.52	2978.07	3280.60	44.4	2.1	1316.96	2800.37	3627.90
1381	ST	Gadaba	57.50	2.2	1478.75	3247.09	3041.90	58.7	2.3	1496.15	3466.08	2352.30	60.5	2.0	1522.25	3112.16	2829.70
1383	ST	Paroja	44.80	2.4	1321.32	3110.61	NA	43.1	2.1	1302.79	2763.00	1843.40	44	2.3	1312.60	3049.97	2090.80
1460	ST	Bhumia	47.60	2.3	1335.20	3076.52	3077.10	44.1	2.4	1284.45	3125.50	2637.30	46.4	2.1	1317.80	2730.77	3303.70

Table 4b: Female individual weight, physical activity level, basal metabolic rate and total energy expenditure by season, Koraput

hhid	Caste	Sub-Caste	Planting					Harvesting					Lean				
			Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake
1334	OBC	Rana	50.7	2.2	1180.80	2642.04	2079.60	43.1	2.0	1074.40	2135.37	3206.30	45.3	1.9	1105.20	2152.07	2950.40
1496	OBC	Rana	67.1	1.5	1344.93	1983.77	NA	71.6	1.6	1382.28	2142.53	3896.40	73.5	1.5	1398.05	2046.59	2396.30
1526	OBC	Mali	40.1	2.4	1032.40	2456.25	1985.80	41.1	2.3	1129.13	2625.23	3389.80	41	2.3	1128.30	2624.86	2037.90
1531	OBC	Mali	47.4	2.3	1181.42	2727.11	2013.30	46.8	2.6	1176.44	3053.84	2142.10	47.1	1.5	1178.93	1743.83	2860.20
1567	OBC	Mali	NA	1.8	NA	NA	2030.30	NA	2.2	NA	NA	2192.30	35.9	2.3	973.60	2256.86	2310.30
1577	OBC	Mali	42.9	2.4	1144.07	2769.60	2291.70	43.4	2.5	1148.22	2860.98	2035.30	43.1	2.4	1145.73	2716.33	2033.70
1602	OBC	Mali	36.9	2.5	1094.27	2749.35	2109.50	35.1	2.5	1079.33	2702.82	2128.10	35.7	2.1	1084.31	2285.33	2455.10
1623	OBC	Rana	42	2.2	1136.60	2538.41	3305.50	39.5	2.3	1115.85	2566.46	2105.00	43	2.1	1144.90	2416.22	1346.40
1664	OBC	Rana	35.7	2.2	1084.31	2403.55	1810.60	35.9	2.4	1085.97	2570.13	1531.70	35.9	2.0	1085.97	2177.97	2486.70
1667	OBC	Rana	55	2.2	1244.50	2784.57	1859.50	55.3	2.3	1246.99	2888.86	1973.10	57.6	2.1	1266.08	2671.08	1992.40
1215	SC	Domb	45.2	2.3	1103.80	2488.15	2681.30	47.3	2.4	1133.20	2733.85	1998.20	46.6	2.3	1123.40	2567.44	3240.10
1218	SC	Domb	37.6	1.8	1100.08	1934.31	999.32	38.1	1.8	1104.23	1955.41	1133.40	39	1.7	1111.70	1889.12	1773.80
1223	SC	Domb	37.2	1.8	991.80	1818.30	2381.60	38.2	1.9	1005.80	1902.64	2660.80	36.1	1.8	976.40	1794.81	648.50
1407	SC	Domb	37.5	1.9	996.00	1904.85	2413.90	39.7	1.9	1026.80	1968.03	2245.90	40.3	1.9	1035.20	1983.41	2322.80
1002	ST	Gadaba	44.9	2.2	1160.67	2601.84	1709.30	44.1	2.3	1154.03	2683.12	1186.20	41.9	2.1	1135.77	2357.51	2461.70
1005	ST	Gadaba	35.6	1.8	969.40	1765.12	1909.00	36.6	1.7	983.40	1634.90	1028.00	34.6	1.8	955.40	1707.78	1648.00

1008	ST	Gadaba	40.5	2.0	1124.15	2238.93	2229.50	39.9	2.2	1119.17	2485.49	2364.90	38.6	2.1	1108.38	2339.91	2129.40
1043	ST	Paroja	41.6	2.2	1133.28	2497.94	NA	40.3	2.4	1122.49	2684.62	1250.80	42.1	2.3	1137.43	2585.28	2558.10
1044	ST	Paroja	39.2	2.3	1113.36	2518.98	2406.10	36.6	2.4	1091.78	2615.72	2475.30	42.1	2.3	1137.43	2560.80	2682.80
1047	ST	Paroja	37.3	2.3	1097.59	2497.02	3423.20	37.5	2.4	1099.25	2629.04	2851.60	39.1	2.2	1112.53	2498.56	3273.00
1171	ST	Bhumia	36.7	2.3	984.80	2244.52	2548.40	38.2	2.3	1005.80	2338.49	2015.10	38.1	2.3	1004.40	2321.28	1538.90
1186	ST	Bhumia	54.7	2.3	1236.80	2813.72	2000.10	52.7	1.8	1208.80	2195.99	3222.80	53.3	2.2	1217.20	2697.28	2393.70
1209.1	ST	Bhumia	41.6	2.3	1053.40	2387.71	2993.90	38.2	2.4	1005.80	2413.92	1977.10	40.8	1.9	1042.20	1941.10	2065.40
1240	ST	Bhumia	38.6	2.3	1011.40	2292.51	2882.40	40.3	2.4	1035.20	2471.54	2010.80	40	2.1	1031.00	2186.58	2527.59
1351	ST	Bhumia	36.6	2.2	983.40	2196.26	2095.60	40	2.4	1031.00	2440.03	1560.20	40.5	2.2	1038.00	2331.18	2809.60
1375	ST	Paroja	41.4	2.3	1131.62	2555.58	3201.70	38.9	2.5	1110.87	2754.03	2095.10	37.6	2.0	1100.08	2224.61	2268.60
1379	ST	Gadaba	47.7	2.3	1138.80	2590.77	3151.00	49	2.3	1194.70	2717.94	2324.10	49.9	2.0	1202.17	2378.46	2576.30
1381	ST	Gadaba	46.1	2.2	1116.40	2502.60	1939.70	46.2	2.4	1117.80	2645.46	2087.10	48.7	2.3	1152.80	2673.86	1773.70
1383	ST	Paroja	38	2.3	1103.40	2496.44	NA	36.4	2.3	1090.12	2507.28	1757.10	37.5	2.2	1099.25	2445.07	1586.10
1460	ST	Bhumia	45.3	2.4	1105.20	2661.69	NA	49.4	2.4	1162.60	2741.80	1920.10	49.4	2.3	1162.60	2615.85	2298.50

Table 4c: Male individual weight, physical activity level, basal metabolic rate and total energy expenditure by season, Wardha

hhid	Caste	Sub-Caste	Planting					Harvesting					Lean				
			Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake
1258	OBC	Mali	46.50	2.0	1339.85	2651.79	2105.37	45.6	2.0	1330.04	2687.79	2453.92	50	2.4	1378.00	3273.71	1880.71
1265	OBC	Mali	53.90	2.1	1420.51	2923.88	1769.15	70.8	1.9	1604.72	2988.79	1691.22	NA	1.9	NA	NA	1593.54
1274	OBC	Mali	42.20	2.1	1292.98	2736.81	2558.80	56.7	2.4	1451.03	3434.10	2019.88	57.02	1.9	1454.52	2772.67	1695.33
1291	OBC	Mali	58.20	2.1	1467.38	3008.13	2590.01	59	2.1	1476.10	3044.46	2599.20	68.2	2.0	1576.38	3091.46	1685.28
1005	Others	Gowari	NA	2.0	NA	NA	NA	55	2.3	1432.50	3258.94	2015.22	48.2	2.3	1358.38	3173.33	1393.42
1075	Others	Gowari	56.02	1.7	1443.62	2490.24	1801.65	57.3	2.1	1457.57	3097.34	1795.49	47	2.2	1345.30	2982.08	1978.23
1097	Others	Gowari	62.03	2.1	1509.13	3219.47	3301.54	62.3	2.2	1512.07	3358.06	2463.03	66	2.2	1552.40	3481.04	2017.58
1101	Others	Gowari	48.00	2.2	1356.20	2927.13	2147.32	47.3	1.5	1348.57	1977.90	1479.91	50.2	2.0	1380.18	2783.36	2685.48
1113	Others	Gowari	53.00	2.0	1410.70	2774.38	1953.48	56.6	2.1	1449.94	3026.75	2413.80	58.1	2.0	1466.29	2925.45	1247.23
1129	Others	Gowari	46.00	2.2	1334.40	2874.52	1306.71	44.5	2.1	1318.05	2789.87	2286.36	NA	2.4	NA	NA	1891.49

1150	SC	Mahar	53.06	2.0	1411.35	2828.59	2297.35	49.7	1.6	1374.73	2199.57	915.78	49.9	2.0	1376.91	2781.55	2698.93
1186	SC	Mahar	57.03	2.0	1454.63	2848.64	3280.34	50	2.1	1378.00	2911.03	1274.73	58.7	1.9	1472.83	2823.95	2244.30
1196	SC	Mahar	47.07	2.0	1327.52	2649.50	1829.16	NA	2.3	NA	NA	NA	46.1	2.0	1313.45	2636.93	2887.27
1225	SC	Mahar	59.60	2.0	1509.20	2980.67	1734.77	58.1	1.8	1466.29	2706.53	2457.70	57.4	1.9	1458.66	2836.28	1760.94
1335	SC	Mahar	54.40	2.0	1425.96	2899.45	2591.58	53.7	2.0	1418.33	2866.21	2883.41	55.4	2.0	1436.86	2935.58	3397.39
1346	SC	Mahar	56.90	2.0	1453.21	2894.31	1632.51	57.5	2.1	1459.75	3059.39	1863.17	59	2.1	1476.10	3146.96	2356.13
1003	ST	Gond	47.20	2.0	1347.48	2633.20	1944.73	49.5	1.7	1372.55	2373.37	2606.94	52.5	2.3	1405.25	3285.75	2344.16
1091	ST	Gond	47.07	2.1	1327.52	2732.47	1407.39	48.2	1.9	1358.38	2580.92	2029.00	49.3	2.2	1370.37	3017.67	2494.33
1106	ST	Gond	39.70	1.3	1265.73	1619.08	1371.28	37.2	1.3	1238.48	1610.02	1779.44	NA	1.2	NA	NA	NA
1224	ST	Gond	55.40	2.0	1436.86	2825.82	2772.22	56.5	2.2	1448.85	3169.36	2151.13	58.01	2.0	1465.31	2908.23	2603.36
1245.1	ST	Gond	54.10	2.0	1429.45	2882.72	2925.37	55	2.0	1442.50	2866.97	1980.87	NA	2.0	NA	NA	2252.77
1264	ST	Gond	50.00	2.1	1378.00	2836.38	2140.31	52	1.9	1399.80	2636.29	2816.21	54.1	2.3	1422.69	3300.84	1798.16
1364	ST	Gond	76.00	2.0	1661.40	3281.27	2059.99	78	2.2	1683.20	3639.92	2006.36	76.7	2.3	1669.03	3808.63	1768.70
1402	ST	Gond	45.20	2.0	1300.40	2611.64	2377.41	45.2	2.1	1300.40	2747.10	2064.66	48.2	2.0	1343.90	2668.20	1679.39
1432	ST	Gond	57.20	2.1	1474.40	3059.38	1837.37	56.2	2.2	1459.90	3278.69	3365.17	61.1	1.5	1530.95	2246.46	2193.23
1436	ST	Gond	49.60	1.8	1373.64	2506.89	2513.18	50.7	1.9	1385.63	2580.74	1619.58	49.7	1.8	1374.73	2463.06	2739.71
1450.1	ST	Gond	48.70	2.1	1363.83	2818.58	2482.59	50.3	2.1	1381.27	2917.93	1778.65	52.1	2.0	1400.89	2789.13	1784.70
1482	ST	Gond	73.30	2.0	1707.85	3401.47	2860.98	65.6	2.1	1548.04	3237.98	2111.52	73.4	2.0	1633.06	3335.30	1583.17
1484	ST	Gond	45.90	2.1	1333.31	2783.28	694.57	46.3	2.1	1337.67	2758.94	2142.53	46	1.8	1334.40	2467.71	1793.13
1489	ST	Gond	47.40	1.7	1349.66	2322.54	3023.02	NA	1.9	NA	NA	NA	47	1.8	1326.50	2351.77	2136.31

Table 4d: Female individual weight, physical activity level, basal metabolic rate and total energy expenditure by season, Wardha

hhid	Caste	Sub-Caste	Planting					Harvesting					Lean				
			Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake	Weight	PAL	BMR	TEE	Energy Intake
1258	OBC	Mali	39.70	2.2	1117.51	2481.80	2144.06	40.10	2.4	1120.83	2699.33	1802.79	43.1	2.2	1145.73	2487.98	1758.79
1265	OBC	Mali	44.70	1.8	1159.01	2086.22	1573.92	44.70	2.3	1159.01	2699.53	1471.34	41.5	1.8	1132.45	2045.49	780.28
1274	OBC	Mali	38.30	2.2	1105.89	2391.49	2279.24	42.40	2.3	1139.92	2564.82	1551.25	46	1.4	1169.80	1663.72	1560.65
1291	OBC	Mali	39.40	2.2	1022.60	2241.20	1983.92	38.70	2.4	1012.80	2396.96	2157.01	40	1.9	1031.00	1982.53	1950.05

1005	Others	Gowari	44.03	2.2	1087.42	2342.48	2277.23	44.10	2.3	1088.40	2489.72	1668.34	44.1	2.0	1088.40	2140.52	1387.17
1075	Others	Gowari	41.02	2.2	1045.28	2269.13	1084.27	NA	2.3	NA	NA	NA	NA	1.9	NA	NA	NA
1097	Others	Gowari	48.08	2.1	1144.12	2350.21	2688.02	48.70	2.3	1152.80	2685.06	2105.69	48.2	1.8	1145.80	2030.61	1541.55
1101	Others	Gowari	39.90	2.3	1119.17	2518.13	1932.34	36.60	2.3	1091.78	2547.49	879.74	37.1	1.9	1095.93	2107.38	1430.99
1113	Others	Gowari	52.09	2.1	1220.35	2618.66	1677.06	52.70	2.4	1225.41	2997.15	1976.84	55.4	2.1	1247.82	2649.88	1555.38
1129	Others	Gowari	42.07	2.2	1137.18	2497.06	981.84	41.80	2.4	1134.94	2676.57	1488.74	44	2.2	1153.20	2591.50	1818.46
1150	SC	Mahar	38.09	2.2	1104.15	2442.93	1689.06	37.20	2.3	1096.76	2522.55	1310.31	37.6	1.7	1100.08	1839.58	2305.49
1186	SC	Mahar	36.09	2.1	1087.55	2283.85	1742.16	36.10	2.3	1087.63	2460.76	1621.45	37.7	1.5	1100.91	1641.43	1389.55
1196	SC	Mahar	NA	2.2	NA	NA	NA	NA	1.7	NA	NA	NA	36.8	1.7	986.20	1635.45	2198.42
1225	SC	Mahar	48.10	1.8	1144.40	2093.30	1220.69	51.30	1.9	1189.20	2313.99	1742.67	53.1	1.8	1214.40	2142.07	1152.32
1335	SC	Mahar	41.60	2.2	1053.40	2343.82	2205.26	39.80	2.3	1118.34	2614.12	2584.25	42.8	2.4	1143.24	2724.72	2254.69
1346	SC	Mahar	42.70	2.1	1068.80	2195.49	1569.24	45.00	1.8	1101.00	1958.86	2213.85	46.4	1.7	1120.60	1866.11	2032.70
1003	ST	Gond	32.00	2.1	1053.60	2225.73	1259.21	35.30	2.4	1080.99	2558.34	1221.01	35.4	2.1	1081.82	2245.53	1443.13
1091	ST	Gond	39.09	1.8	1018.26	1815.90	2102.24	34.40	2.6	952.60	2445.01	1714.60	37	1.7	989.00	1706.71	1443.54
1106	ST	Gond	NA	2.2	NA	NA	NA	32.10	2.3	1054.43	2412.01	2173.77	NA	2.0	NA	NA	NA
1224	ST	Gond	44.30	2.2	1091.20	2373.36	1933.65	42.20	2.5	1061.80	2614.68	1780.79	44.01	1.8	1087.14	1903.25	1824.22
1245.1	ST	Gond	45.70	1.6	1110.80	1749.51	2101.33	43.50	1.6	1080.00	1777.50	818.20	44	1.8	1087.00	1920.37	2260.48
1264	ST	Gond	32.00	2.2	919.00	1987.34	2020.84	31.50	2.4	912.00	2150.80	2163.80	31	1.8	905.00	1603.86	1700.31
1364	ST	Gond	37.05	2.1	1095.52	2346.23	1683.27	38.50	2.3	1107.55	2565.82	1894.44	34.7	2.1	1076.01	2265.60	1818.80
1402	ST	Gond	47.90	2.2	1141.60	2482.98	1862.15	47.90	2.0	1141.60	2326.01	1946.98	47.5	1.3	1136.00	1453.92	1288.21
1432	ST	Gond	47.30	2.2	1133.20	2483.60	1536.37	47.80	2.4	1140.20	2684.22	2797.08	47.5	2.1	1136.00	2440.82	1773.87
1436	ST	Gond	34.60	1.6	1075.18	1765.09	1984.00	32.40	2.3	1056.92	2461.74	1380.91	33.2	2.3	1063.56	2472.04	2155.05
1450.1	ST	Gond	41.80	2.1	1056.20	2235.62	1612.99	40.80	2.5	1042.20	2557.73	1312.82	43.2	1.7	1075.80	1834.09	1675.40
1482	ST	Gond	39.60	2.2	1025.40	2247.34	2630.27	39.60	2.4	1025.40	2413.96	1882.88	40.1	2.2	1032.40	2289.92	1417.42
1484	ST	Gond	40.10	2.2	1032.40	2275.58	1301.40	43.50	2.5	1149.05	2815.17	1822.85	47.5	2.3	1182.25	2666.63	1741.61
1489	ST	Gond	33.40	1.7	938.60	1626.91	2523.14	37.20	1.8	991.80	1810.04	2161.09	40	1.6	1031.00	1612.37	1597.44

Notes: Household Identification (hhid)
Physical Activity Level (PAL)
Basic Metabolic Rate (BMR)
Total Energy Expenditure (TEE)