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Nutrition Baseline Survey India

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Table of content

Annex

Abbreviations

BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung
FAO	Food and Agriculture Organization of the United Nations
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IFAD	International Fund for Agriculture of the United Nations
IDDS-C	Individual Dietary Diversity Score for Children
IDDS-W	Individual Dietary Diversity Score for Women
IYCF	Infant And Young Child Feeding
MAD	Minimum Acceptable Diet
Md	Median
NFHS	National Family Health Survey
MMD	Minimum Dietary Diversity
MMF	Minimum Meal Frequency
NGO	Non-Governmental Organization
AWC	Anganwadi Centre
SD	Standard Deviation
SEWOH	Special Initiative “ONE WORLD – No Hunger” (Sonderinitiative “Eine Welt ohne Hunger”)
SPSS	Statistical Package For Social Sciences
ASHA	Village level Health worker
UNDP	Human Development Report
UNICEF	United Nations Children’s Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization of the United Nations
ICDS	Integrated Child Development Services
DWC	Department of women and child welfare
TPDS	Targeted Public Distribution System
SC	Scheduled Caste
ST	Scheduled Tribe
BPL	Below Poverty Line
AAY	Antyodaya Anna Yojana
APL	Above Poverty Line

List of Tables

Introduction

Over 800 million people worldwide suffer from hunger and two billion do not meet their micro nutrient requirements (Global Nutrition Report, 2016). While the global starving population has gone down in recent decades, the number of people suffering from hunger in sub-Saharan Africa today is higher than ever. Malnutrition is particularly prevalent in developing countries, where it has an impact not only upon the development prospects of an entire country, but also of each individual affected. If a child does not receive sufficient nutrients up to its second year, i.e. over its first 1,000 days beginning with the early embryonic phase, the impact on growth, mental faculties and therefore learning and work¬ing potential will endure a lifetime.

The German Ministry of Economic Co-operation and Development (BMZ) launched an Initiative “On World – No Hunger” to improve food and nutrition security (https://www.bmz.de/webapps/hunger/index.html#/de). Within this initiative GIZ implements the program “Food and nutrition security, enhanced resilience” in 11 countries in Africa and Asia.
The project‘s main target group includes women of childbearing age, pregnant women, breastfeeding mothers and infants. The project‘s objective is to improve the nutritional situation of approximately 880000 women, 235000 young children and 4.000 households. Structural measures to combat hunger and malnutrition, particularly among mothers and young children, are one of the most effective ways of investing in the future of a society.

In order to measure our impact we used standard indica¬tors in line with internationally recognized methods in order to measure whether children (up to 23 months) receive a minimal acceptable diet and women eat more diversified. We conducted so far baselines in Benin, Burkina Faso, Cambodia, Ethiopia, India, Kenya, Mali, Malawi, Togo and Zambia in order to get an overview of the overall food and nutrition situation in the program areas of the respective countries. The baseline studies provided valuable data for intervention planning as well as our monitoring and evaluation system. All baseline studies were conducted in a standardized form and in line with a guideline especially developed for this purpose.

We want to thank all consultants and enumerators, all our partner organizations, FAO, University of Giessen, Bioversity International and last but not least more than 4.000 women who offered their time to answer our questions.

Bonn, September 2016
Michael Lossner

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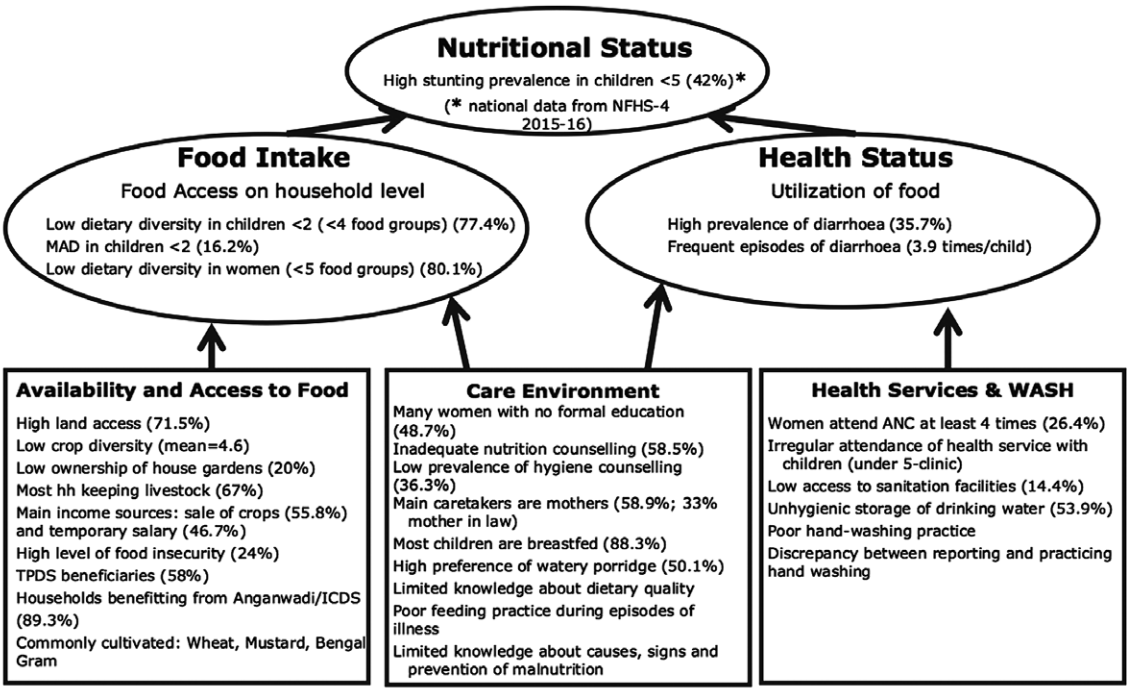
1. EXECUTIVE SUMMARY

The current SEWOH Nutrition Baseline Survey was conducted among women of reproductive age and infants and young children between the age of 6-23 months in India in January and February 2016. The main objective of this survey was to describe the nutrition situation among the target groups in rural areas of the districts Chhatarpur and Sheopur. Of special interest were Minimum Acceptable Diet (MAD) of infants and young children and Minimum Dietary Diversity-Women (MDD-W). Further, it aimed to examine linkages between dietary diversity and complementary feeding practices with living conditions as well as with knowledge and practice in regard to hygiene and nutrition.

Figure 1: Results of the NBS presented according to the UNICEF Model



2. BACKGROUND AND OBJECTIVES

2.1. Country Context

India, a country in South Asia is the seventh largest country by area. Spread across an area of 3,287,590 sq. km, it is home to 1.29 billion people placing it as the second most populous democracy. Ranking 130 out of 188 countries India places on the Medium Human Development Index according to the UNDP (2014). Geographically, India borders Pakistan to the west; China, Nepal and Bhutan to the north-east and Myanmar and Bangladesh to the east. It is bound by the Arabian Sea on the south west, Indian ocean on the south and Bay of Bengal on the South-east.

The Indian federation comprises of 29 states and 7 union territories. A rapidly growing economy it faces the major problem of malnutrition, especially in states like Madhya Pradesh. In India, one faces the dilemma of having a rapidly developing economy on one hand and on the other the country is steeped in age old traditions and customs.

vsIn India, the predominant **caste system** is a system of social stratification and currently is the basis for “reservation” (ensuring that the lower castes get equal opportunities and to help their development). It consists of two different concepts – class and birth. A broad definition would be placing people in different groups according to their occupation. The caste system is deeply rooted in the Hindu religion and is based on the division of labour. It is only part of the Hindu religion in India, no other religion follows it. India has four main classes (primitive) based on personality, profession and birth – Brahmanas (scriptural education and teaching), Kshatriyas (doing public service), Vaishya (businessmen) and Shudras (semi-skilled or unskilled labourers). A person cannot change his/her caste. During the British colonial period, the lower classes (emerging from the Shudras) were marginalized and considered as the “depressed class”.

Post-independence, the Constitution of India recognizes the historically disadvantaged people and they have been officially designated as “Scheduled Castes (SC)” and “Scheduled Tribes (ST)”. The SC are sometimes referred to as “Dalits” and ST as “Adivasis/ Tribals”, “Other Backward Classes (OBC)” comprise of certain economically backward Shudra castes. All these have developed from the above mentioned four primitive classes.

SC and ST are among the **most disadvantaged socio-economic groups**. The Government of India has implemented several programmes and schemes, legislatures and opportunities for these groups.

The most vulnerable and easily affected by malnutrition are children and women of reproductive age. They suffer from malnutrition as a result of an unbalanced diet and a lack of food diversity.

Factors such as lack or inadequate knowledge of healthy food choices, appropriate food combinations, childcare and optimal feeding practices are obstacles which prevent households from availing and benefiting from nutrient-rich foods (UNICEF 1998). Families, especially women and children, belonging to the SC and ST categories and who are already at a disadvantage, often lack the required skills and access to technologies for food preparation, preservation and storage which results in decreased quantity and quality of malnourished food and eventually malnutrition (FAO 1997).

Inadequate complementary feeding and care practices, like low dietary diversity and poor quality foods and low dietary diversity are major causes of undernutrition. In addition, diseases, poor water, inappropriate sanitation and hygiene practices, other household and family factors also contribute to the existing malnutrition problem. Any sudden and/or prolonged change in food availability and illness can trigger and exacerbate the existing problem of undernutrition (UNICEF 1998).

2.2. Specific Project Information

The S*pecial Initiative ONE WORLD - No Hunger* (SEWOH) addresses hunger and malnutrition, an issue that is of uppermost significance in the Post-2015 Development Agenda in the context of Germany's G7 presidency (https://www.giz.de/en/mediacenter/30854.html). SEWOH will be implemented through bilateral and multilateral development cooperation and through partnerships with enterprises, business associations, civil society, and academia. Further, this initiative includes a development of international goals, standards, and guidelines for global food and nutrition security under participation of the Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ). Nutrition baseline surveys will be conducted in Zambia, Malawi, Ethiopia, Benin, Burkina Faso, Cambodia, India, Kenya, Mali, Togo, and Yemen by using the same survey tools (Figure 2, page 11).

The focus of the India country package is on two areas of intervention:

(1) Pursuing a multi-sectoral approach to combat structural undernutrition and malnutrition, particularly among women of reproductive age, babies and small children (6-23 months).

(2) Improving the effectiveness and efficiency of the Targeted Public Distribution System (TPDS).

Figure 2: Overview of countries for the nutrition baseline surveys

Welthungerhilfe (WHH) is working in the area through local NGOs. Efforts aim at the structural reduction of hunger and malnutrition, especially in mothers and young children. Improving the efficiency and effectiveness of the TPDS system is being initiated directly by the GIZ project office in India in collaboration with the Central and Madhya Pradesh State government in India. The project period is four years and seven months (from June 2015 to December 2019).

2.3. Objective of the Nutrition Baseline Survey

The causes of malnutrition

In 1990, UNICEF developed a comprehensive model that describes the inter-linkages between the multi-dimensional causes of malnutrition that occur at various levels within societies. The model is still being widely used as well as amended in latest publications (i.e. LANCET 4/2013). It explains malnutrition both in rural and urban settings. All forms of malnutrition share a common cause: inappropriate diets that provide inadequate or excessive macronutrients and/or micronutrients. Yet, many other factors also play a role in malnutrition at different levels – as identified by the model:

- The **immediate causes** include inadequate dietary intake and disease, which directly impact on an individual's nutritional status;
- These **primary causes** are influenced by underlying causes such as food access and availability at household level, healthcare, water and sanitation, and care, particularly young children, but also women (breastfeeding practices, hygiene practices, women's workload etc.) at the household or community level. Education levels – both formal and informal incl. life skills – play a determining major role;

- The **basic causes** of malnutrition are wide-ranging, from structural and natural resources, to social, economic and legal environments, and political and cultural contexts across regional, national and international levels.

To identify the underlying causes of malnutrition in a target population, information is needed to design interventions that address the current situation of the potential beneficiaries. Therefore, the **objective** of this Nutrition Baseline Survey (NBS) is to provide reliable information on the food and nutrition situation of women of reproductive age and infants and young children in the project area. The target groups of women aged 15–49 years, infants and young children (623 months) were chosen, because they are particularly vulnerable to suffer from undernourishment and malnutrition. Especially households in fragile contexts, such as rural subsistence farming households and those belonging to the disadvantaged SC, ST and OBC categories are often not in a position to independently strengthen their resilience to hunger crises. Furthermore, it is vital to focus on the '1,000 day window' (from conception to the age of two years). In this window of opportunity, inadequate nutrition and diseases can lead to irreversible damage in regard to the development of mental and/or motor skills as well as immune system. Thus, a focus on these target groups is vital to guarantee a proper development of the individual and overall potential of the up-coming generations.

The main indicators of the NBS are:

- **Household Food Insecurity Experience Scale** (HFIES) for interviewed households
- **Individual Dietary Diversity Score Women** (IDDS-W) for mothers 15-49 years of age
- **Minimum Acceptable Diet** (MAD) for infants 6-23 months of age

These indicators are explained in detail in Section 3.4 (page 19).

3. METHODS

3.1. Project area and participants

Madhya Pradesh

Madhya Pradesh is geographically located in the central part of India. It borders Uttar Pradesh to the north-east, Chhatisgarh to the south-east, Maharashtra to the south, Gujarat to the west and Rajasthan to the northwest. Madhya Pradesh comprises an area of 308,000 sq.km and is the second largest state in the country and the ninth largest economy in India (MP Planning Commission 2009).

The total population of the state is 72,626,809 people, with 90.89% of the population being Hindus, 6.57% being Muslims and 0.83% belonging to other religions. The state has the highest proportion of tribal population, 15.62% belong to Schedules Castes while 21.09% belong to the Scheduled Tribes, with majority of them still living in the rural areas. The state has large natural resources like forests, mineral resources and eight important rivers flowing through it. Madhya Pradesh also has low cost of basic infrastructure, skilled manpower, cheap unskilled labour and existing industrial base, good connectivity to neighbouring states, it has great potential as an emerging economy. Despite all the advances in the state, the nutritional status of the population in Madhya Pradesh is very poor. Some of the reasons for this could be demography, agricultural economy and discriminatory social practices (MP Planning Commission Report, 2009).

In Madhya Pradesh, 36.7% of its total population live below the poverty line (http://www.undp.org/content/dam/india/docs/madhyapradesh_factsheet.pdf). The Indian State Hunger Index, ranks MP at 17th place with a Hunger Index Score of 30.90 (globally, India overall score 23.31). The high prevalence of caloric undernourishment (23.4%) makes the food, health and nutrition status “extremely alarming” and in need of timely intervention (Menon et al 2009). Even though 63.9% of the population in the state is literate, the levels of malnourishment are very high. According to the NFHS-4, Madhya Pradesh currently has 42.8% (41.3% Chhatarpur, 55.0% Sheopur) of children under 5 being underweight, 42% (42.7% Chhatarpur, 52.1% Sheopur) are stunted, 25.8% (18.9% Chhatarpur, 28.1% Sheopur) are wasted and 9.2% (7.2% Chhatarpur, 9.0% Sheopur) are severely wasted.

According to UNICEF, the definition of wasting is below minus 2 standard deviations from median weight for height of reference population. Severely wasted refers to children below minus 3 standard deviations. Since India has a higher prevalence of wasting, a prevalence of >5% is alarming since it results in a parallel increase in mortality. On the severity index, prevalence between 10-14% are considered serious and ≥15% are critical (UNICEF, WHO).

Chhatarpur district is located in the north east in the Madhya Pradesh. It has a population of 1762,375 it ranks 13th in the state and 7th in terms of area. The district has 1185 villages (1085 inhabited and 102 uninhabited) and Chhatarpur is the district headquarter. It has eight community development Blocks (CD Blocks). The economy is essentially agrarian (District Census, MP, 2011). The Chhatarpur district which falls under the Bundelkhand region has been affected by draught since 2005 and this has an important impact on agriculture (http://www.bundelkhand.in/portal/article/explaining-pight-bundelkhand-drought-suicide- governance).

Sheopur district is located in the north within Madhya Pradesh. Comprising of a population of 687,861 (614,958 Sahariya) it ranks 48th in terms of population and 19th in terms of area. Sheopur comprises of three community development Blocks (CD Blocks) and has an agrarian economy (District Census, MP, 2011). In Sheopur, the tribals traditionally lived in or surrounding the forest and depended on forest resources for subsistence, income and employment. Under the current Forest Rights Act, many of the tribals have been resettled and are allowed to collect minor forest produce excluding timber and hunting, this has resulted in a loss of their traditional methods of livelihood.

Among the various tribes in Sheopur, the Sahariya tribe, the most primitive tribe face the most challenges since the lack of proper records and recognition of land has forced them to move from their traditional forest dependent livelihood to other sources of income. The relative isolation of the tribals, remoteness, lack of adequate infrastructure and loss of their traditional livelihood and low level of education, makes them the most vulnerable people, especially in terms of malnutrition, in the state (http://fra.org.in/, http://www.actionaid.org/india/what-we-do/madhya-pradesh/ensuring-rights-women-and-children-sahariya-tribes-mp-rajasthan).

Participants and Sample Size

The current NBS included participant pairs of the following two target groups:

- Women of reproductive age (15-49 years)
- Infants and young children between 6-23 months

The calculation of the sample size, i.e. households with eligible participants, was based on the program target impact of an 0.5 food group increase in women[1]. The calculation of the necessary sample size was done with GPower. A sample size of 400, including 15% drop-outs, was estimated for the NBS (Table 1).

1 An increase of 0.5 food groups is equal to 5% increase since dietary diversity of women is measured based on 10 food groups.

Table 1: Sample Size calculation for SEWOH NBS

Mean Baseline	Mean End-line	α error	Power 1-β error	SD	N Baseline	N Endline	Total
Increase by 0.5 food groups							
2.5	3.0	0.05	0.95	2	400	400	800
3.5	4.0	0.05	0.95	2	400	400	800

3.2. Sampling procedure

The programme will be implemented in both districts of Madhya Pradesh. Currently, depending on the level of underdevelopment and need-based requirement of the village, the project is already being implemented in 100 focus villages in both the districts, i.e., Chhatarpur and Sheopur. These villages have been selected by the GIZ project office in agreement with WeltHungerHilfe (WHH) and the local NGOs. The programme will be implemented in collaboration with the WHH via local NGOs. In Chhatarpur, Darshana NGO will implement the programme while Mahatma Gandhi Seva Sangh will implement in Sheopur.

The administrative set up is as follows: State à District à Development Block à Village.

For both districts, all the blocks were included in the sample. Chhatarpur has eight blocks and Sheopur has three. The number of villages and total population in each block was different. Hence, population proportional sampling (PPS) was used to determine the number of villages that needed to be included in the survey from each block.

The GIZ project office provided the complete list of villages in both the districts, including the census data, for each block. All the villages including the 100 focus villages were included while randomly selecting the villages. The sample of 800 was divided equally between both the districts (Chhatarpur= 400, Sheopur=400).

From the census data, the number of children under 5 was calculated. In Sheopur, 17% of the population was under 5 and in Chhatarpur, 10% were under 5. Considering that this is equally divided for every 6 months, the percentage of children between 6-23 months in Sheopur is 4.2% and in Chhatarpur is 3.4%. The village with the least population (minimum number of people living in), was then used to calculate the minimum number of expected children per village in that block.

$$\frac{\text{Least population} * \text{number of children}}{100} = \text{Minimum number of expected children}$$

There was a large number of villages in each block and the time to do the survey was limited. Once the minimum number of expected children was calculated, the number of cluster (villages) to be surveyed was calculated.

$$\frac{\text{Total number of villages in that block}}{\text{Minimum number of expected children}} = \text{number of cluster (villages) to be surveyed}$$

To randomly select the villages to be surveyed, all villages were listed. The total cumulative population in that block was calculated. A random number between 1 and the total cumulative population was generated using a random number generator. The first village (cluster) was the one where the random number

corresponded to the population of the village, the second cluster was calculated by adding the cumulative population to the random number and in this way all villages for that particular block were randomly selected. This method was applied to randomly select villages for each block in both districts.

Considering the time, logistics and weather conditions, from each block in Chhatarpur two villages were randomly selected and from Sheopur it was six villages in 2 blocks each and 4 villages in one block depending on the total population per block. The villages are listed in Annex A (page 55).

The 16 estimated survey days (based on conducting 50 questionnaires per day, 5 per team, 10 teams in total), were proportionally allocated among blocks according to the targeted number of households to be surveyed (Table 2, Page 17).

Prior to data collection, the State government and Women and Child Welfare Development officials were informed in detail about the survey including the methodology and time line of the survey. The Anganwadi worker and ASHA worker in each village were informed in advance about the survey. Furthermore, the field assistants, who were locals and familiar with the selected villages were assigned to inform the Anganwadi and ASHA worker and identify a local person from each village to help find the correct household stated in the list provided by the Anganwadi worker. The field assistant reported to the lead consultant and supervisors and provided a list of mother-child pairs for the selected villages every evening. From this list, mother-child pairs were randomly selected. After arriving in the village at the scheduled survey day, the team introduced itself to the Anganwadi worker, explained the random selection of households, and asked for permission to collect data. The enumerators were then guided by the supervisor and or Anganwadi-/ ASHA worker in each village as to where to find the identified mother-child pairs.

Within selected villages (Annex A, page 55), main selection criteria for households were at least one woman in reproductive age (15-49 years) and at least one child in the age group of 6-23 months. When the selected village did not have enough households, the next nearby village was included to find remaining households to meet the daily target.

Coming from the originally sampled village, enumerators approached the closest household (belonging to the neighbouring village) and included this household if it met the selection criteria. If the household was not eligible or more households were needed, the second closest household was approached until the targeted number of households was reached. In case there were not enough households found in the neighbouring village, additional households were selected from the next nearby village applying the same procedure. In case there was more than one child in the respective age group of 6-23 months, **always the youngest child was enrolled.**

Table 2: Population information and estimations for NBS

Block	Estimated Total population in Block	% Population to be selected	Number of HH to be selected	Villages randomly selected in the Block	Survey days
Rajnagar	204305	15	60	Bamitha	1
				Pira	1
Gaurihar	178175	13	52	Chitahari	1
				Naduata	1
Laundi	165707	12	49	Ganpatkheda	1
				Sadkar	1
Bada Malhera	177793	13	52	Bhelda	1
				Rajapur	1
Chhatarpur	211788	17	66	Dhamchi	1
				Palotha	1
Bijiawar	131525	10	40	Dilari	1
				Patra	1
Nowgong	191214	14	56	Tatam	1
				Joran	1
Buxwaha	80061	6	25	Hatna	1
Chhatarpur			400		11
Sheopur	227798	40	162	Abdha	1
				Dhiroli	1
				Ichchhapura	1
				Kashipur	1
				Manpur	1
				Pandola	1
				Seeswali	1
Vijaypur	215033	38	150	Bara Kalan	1
				Chentikheda	
				Garhi	1
				Hullpur	
				Pancho	1
				Umari Kalan	
Karahal	126678	22	90	Bandhaly	1
				Gothra	
				Kheree	1
				Rampura Dang	
Sheopur			402		11
Total			802		16

3.3. Data collection

The data collection took place between 25th January 2016 to 12th February 2016. The data collection was conducted simultaneously in both districts, from 1st February to 6th February (6 days). To support data collection an agency was employed by the GIZ country office, who provided logistic support as well as the enumerators. Prior to data collection, 20 enumerators were trained for 5 days including a field test (Annex C, page 56). The WHH local NGO partners provided guidance in terms of the location of the villages, approachability and provided us with information in terms of safety. All 20 enumerators were selected for conduction of the survey, one supervisor was provided by the agency and the other was selected from among the enumerators. The 20 enumerators were a mixed group of 12 females and 8 males. After five days of data collection, 2 enumerators (2 females) left and were replaced by 3 enumerators (3 males), thus bringing the enumerator total up to 21 enumerators (10 girls, 11 boys).

During the data collection, enumerators worked in pairs (teams). Enumerator 1 interviewed the respondents and recorded the paper based 24h-recalls, while enumerator 2 recorded answers on the tablet. Every day, the pairs were mixed. However, their position either as enumerator 1 or 2 remained the same. Each team had at least one female enumerator. The overall survey team was divided into two groups (five teams each) and guided by one supervisor each. Each survey day, one to two villages were scheduled per group and each enumerator team conducted four to six interviews per day. A standardized questionnaire was used to collect data about households' socio-economic situation, food security status, access to water and sanitation, dietary intake of children 6-23 months of age and women, as well as mothers/caretakers feeding practices (Annex S, page 69). The questionnaire was divided into following sections (Table 3).

Table 3: Overview of collected information and assessment instruments

	Collected data	Assessment instrument
1	Socio-demographic information	Structured questions
2	Agriculture	Structured questions
3	Sanitation and hygiene situation	Structured questions
4	Food security status	Household food insecurity experience scale
5	Childcare and feeding practices	Structured questions / KAP questions
6	Dietary intakes of children 6-23 months	24h dietary recall (qualitative)
7	Nutritional knowledge of women	KAP questions
8	Hygiene behaviour	KAP questions
9	Dietary intake of women	24h dietary recall (qualitative)
10	Appearance of household	Observation

All interviews were conducted in Hindi and around the homestead of the selected respondent. During the interview, privacy was assured by keeping an adequate distance between the interviewee and other household members. After the interview, enumerators 1 and 2 compared the paper based and tablet version of the 24h dietary recalls to minimize recording biases. Furthermore, they discussed and filled in the household observations and recorded the GPS coordinates of the household. Interviews were conducted according to the *Nutrition Baseline Survey Interview Guide* (Annex C, page 58) to ensure standardization of interviews. In case the respondent was not the caretaker of the child of the day before the interview, the actual caretaker of that day was interviewed for the children's 24h-recalls. Quality control of data collection was done every day by the assigned supervisors using the *Quality Control Protocol for Interviewer* (Annex D, page 60).

3.4. Indicators

Household Food Insecurity Experience Scale

The pattern of responses to the ten HFIES questions was used to classify the food insecurity severity of households. The number of affirmative responses to the HFIES questions is called the raw score, which was used to produce food insecurity prevalence estimates within the Total survey population. The HFIES is composed of eight questions with dichotomous yes/no responses and two extended follow-up questions. Each question contributes one point to the raw score if the response is “yes” and each follow-up question contributes one point if the response is “almost every week”. Therefore, the raw score has a minimum of 0 and a maximum of 10. Households with a raw score of 0 are classified as food secure. A raw score of 1-3 indicates mild food insecurity. Moderate food insecure households have a raw sore of 4-6, and severe food insecure households have a raw score of 7-10. This simple method of food insecurity classification does not allow for the comparison of estimates among different countries or sub-populations within a country. Inter-country comparisons require further analysis by adjusting each country’s scale to a global standard (Ballard, T.J., Kepple, A., W. & Cafiero, C., 2013).

Dietary diversity

Dietary diversity, for both women and children, was assessed and categorized with the indicators “Individual Dietary Diversity Score” (IDDS) and Minimum Dietary Diversity (MDD). Both indicators are used as a proxy measure of the nutritional quality of an individual’s diet. In the current survey, dietary diversity information of women and children 6-23 months was collected by conducting **free 24h-recalls**, whereby respondents are asked about the different types of food they (or their children respectively) had eaten during the day prior to the interview. The different consumed food items are assigned to predefined food groups and used to calculate IDDS and MDD. The details of the minimum dietary diversity for women and children are explained below.

Dietary Diversity - Women

Individual Dietary Diversity Score - Women (IDDS-W) was assessed based on a Total of 10 food groups (FAO/FANTA 2014) (Table 4, page 20). Only foods consumed in the minimum quantity of ≥15g (around one tablespoon) were considered. To calculate the prevalence of Minimum Dietary Diversity–Women (MDD-W), FAO recommends a cut-off point of 5 food groups. When a woman has consumed ≥5 food groups, a minimum dietary diversity is achieved. A high prevalence of MDD-W is a proxy for better micronutrient adequacy among women aged 15-49 years in the respective population (FAO/FANTA 2014).

Table 4: Food groups for 10 food group score with respective Indian food items

Starchy staple foods	Porridge/daliya (rice or wheat or semolina or maize), bread, rice, noodles, rice kanji or other foods made from grains like sorghum, millet, rice, wheat etc, White potatoes, white yams, cassava (tapioca) or sabudana, or any other foods made from white roots
Beans and peas	Any foods made from dals (lentils), pulses, moong dal, chana (whole), beans, peas, soya
Nuts and seeds	Any foods made from groundnuts, peanut-butter, tree-nuts, pumpkin seeds, sunflower seeds, cashew nuts or seeds including nut/seed butters
Dairy products	Milk (fresh or powder), cheese, yoghurt, paneer or other milk products
Flesh foods	Any kind of meat, organ meat, sea food
Eggs	Eggs from any kind of birds
Dark green leafy vegetables	Any dark green leafy vegetables including wild green vegetables like spinach, fenugreek, drumstick (Moringa oleifera) leaves, amaranth, cassava leaves, pumpkin leaves, mustard

Vitamin A rich fruit/ vegetables	Ripe mangoes, ripe Paw paws, pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside
Other vegetables	Any other vegetables like cabbage, eggplants, tomatoes, onions, green pepper, green/ fresh beans, broad beans, cluster beans, okra
Other fruits	Any other fruit like oranges, apples, bananas, tangerines, unripe/green mangoes

Minimum dietary diversity for children is defined as receiving foods from ≥4 of 7 food groups: 1) Grains, roots and tubers, 2) legumes and nuts, 3) dairy products (milk, yogurt, cheese), 4) flesh foods (meat, fish, poultry and liver/organ meats), 5) eggs, 6) vitamin-A rich fruits and vegetables, and 7) other fruits and vegetables (Table 5).

Definition: Proportion of children 6–23 months of age who receive foods from ≥4 food groups.

$$\frac{\textit{children 6–23 months of age who received foods from ≥4 food groups during the previous day}}{\textit{children 6–23 months of age}}$$

Table 5: Food groups for 7 food group score with respective Indian food items

Grains, roots and tubers	Porridge/daliya (rice or wheat or semolina or maize), bread, rice, noodles, rice kanji or other foods made from grains like sorghum, millet, rice, wheat etc.
Legumes and nuts	Any foods made from dals (lentils), pulses, moong dal, chana (whole), beans, ground beans, peas, soya, ground nuts, nuts or seeds, groundnuts, peanut-butter, tree-nuts, pumpkin seeds, sunflower seeds, cashew nuts or seeds including nut/seed butters
Dairy products	Milk (fresh or powder), cheese, yoghurt, paneer or other milk products (ice cream)
Flesh foods	Any kind of meat, organ meat, sea food, insects
Eggs	Eggs from any kind of birds
Vitamin-A rich fruit/ vegetables	Any dark green leafy vegetables including wild green vegetables like wild green vegetables like spinach, fenugreek, drumstick (Moringa oleifera) leaves, amaranth, cassava leaves, pumpkin leaves, mustard, Ripe mangoes, ripe Paw paws, pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside
Other fruits/ vegetables	Any other fruit like oranges, apples, bananas, tangerines, green/ unripe mangoes Any other vegetables like cabbage, eggplants, tomatoes, onions, green pepper, green/ fresh beans, broad beans, cluster beans, okra

Minimum meal frequency among currently breastfeeding children is defined as children who also received solid, semi-solid, or soft foods 2 times or more daily for children age 6-8 months and 3 times or more daily for children age 9-23 months. For non-breastfeeding children age 6-23 months it is defined as receiving solid, semi-solid or soft foods, or milk feeds, at least 4 times.

Definition: Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more.

$$\frac{\textit{Breastfed children 6–23 months of age who received solid, semi-solid or soft foods the minimum number of times or more during the previous day}}{\textit{Breastfed children 6–23 months of age}}$$

and

$$\frac{\textit{non-breastfed children 6–23 months of age who received solid, semi-solid or soft foods or milk feeds the minimum number of times or more during the previous day}}{\textit{non-breastfed children 6–23 months of age}}$$

The minimum acceptable diet for breastfed children age 6-23 months is defined as receiving the minimum dietary diversity **and** the minimum meal frequency. For non-breastfed children, achieving the indicator requires at least 2 milk feedings and furthermore, minimum dietary diversity has to be achieved without including milk feeds and the minimum meal frequency has to be met.

Definition: Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk).

$$\frac{\textit{Breastfed children 6–23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day}}{\textit{Breastfed children 6–23 months of age}}$$

and

$$\frac{\textit{non-breastfed children 6–23 months of age who received at least 2 milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day}}{\textit{non-breastfed children 6–23 months of age}}$$

Measuring Knowledge, Attitudes and Practises

Nutrition-related knowledge, attitudes and practices (KAP) questions are a useful method for gaining an insight into peoples' personal determinants of their dietary habits and closely related hygiene and health issues. They can thus provide valuable inputs for effective programme and project planning. Nutrition-related KAP studies assess and explore peoples' KAP relating to nutrition, diet, foods and closely related hygiene and health issues. KAP studies have been used for two main purposes: 1) to collect key information during a situation analysis, which can then feed into the design of nutrition interventions and 2) to evaluate nutrition education interventions (FAO 2014). Several KAP questions were included in the questionnaire.

3.5. Data analysis

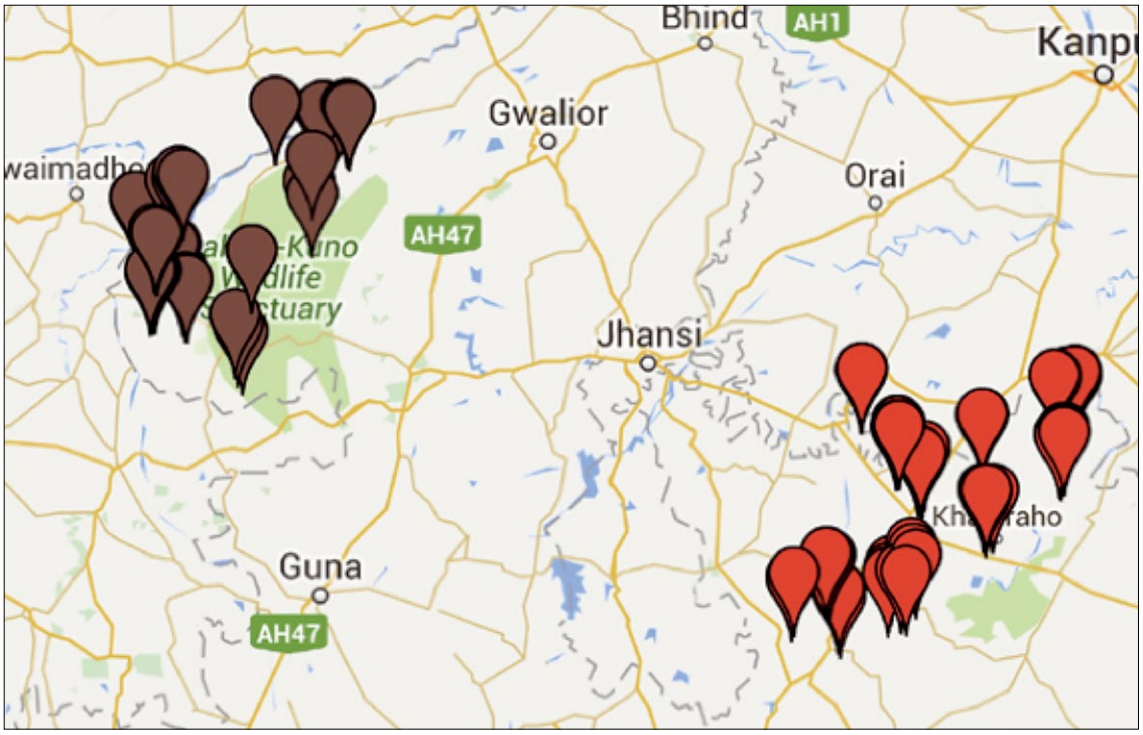
Data were entered onto tablets during the process of the interview. Every evening, collected data were transferred to IBM SPSS Statistics Version 23 (IBM Corp 2015) (IBM Corp. Released 2013. IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.). After completion of data collection, data were cleaned and analysed with IBM SPSS Statistics Version 23. Data were analyzed applying descriptive analysis, including mean, median (Md), standard deviation (SD), minimum (Min) and maximum (Max) and frequencies.

4. RESULTS

A total of 803 interviews were conducted, 400 in Chhatarpur district and 403 in Sheopur district. In Chhatarpur, data collection took place in eight blocks- Gaurihar, Laundi (Lovekush Nagar), Bada Malhera, Bijawar, Chhatarpur, Nowgong, Rajnagar, Buxwaha. In Sheopur, data was collected in three blocks- Karahal, Sheopur and Vijaynagar. Respondents were mothers or primary female caretakers in reproductive age (15-49 years) with a child in the age range 6-23 months.

Figure 3 shows the location of the selected households.

Figure 3: Map of survey area (Chhatarpur and Sheopur)[2]



2 Prepared with google maps: https://www.google.com/maps/d/edit?mid=z6_PvGRNP3do.k4wNbemVxbLk

4.1. Socio demographic information

Majority of the respondents were Hindu (96.5%) with a small percentage following Islam (1.5%). This trend was similar in both districts, Chhatarpur and Sheopur. Details are presented in Table 6 (page 24).

Table 6: Religion of respondents overall and by district

Religion	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Hindu	96.5	97.3	95.8
Islam	1.5	0.5	2.5
Christian	0.1	0.0	0.2
Sikh	0.4	0.3	0.5
Jain	0.2	0.3	0.2
Other	1.2	1.8	0.7

The caste system influences the lifestyle, cultural traditions and socio-economic aspects. In our study, majority of the respondents belonged to “Other Backward Classes” (52.6%) followed by “Scheduled Tribes” (22%) and then “Scheduled Caste” (15.4%) (Table 7).

Table 7: Caste of respondents overall and by district

Caste	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
		14.3	16.6
Scheduled Tribe	22.0	9.5	34.5
Other Backward Classes	52.6	64.0	41.2
General	9.7	12.0	7.4
Other	0.2	0.3	0.2

In total, 99.6% of the respondents were married monogamous while only 0.4% were divorced or separated (Table 8). India follows the patriarchal system and 96.1% of the households were headed by males while 3.9% were female-headed households. In Sheopur 4.5% of the households were headed by females, which is slightly higher than in Chhatarpur (3.3%).

Table 8: Marital Status of respondents overall and by district

Marital Status	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Married monogamous	99.6	99.5	99.8
Divorced or separated	0.4	0.5	0.2

In both districts, the main reason for settlement in the area was “moved here by marriage”, while only 5.2% reported being “born in the area” followed by “wanted better livelihood (fertile land/business opportunity)” at 2.4% (Table 9, page 25).

Table 9: Reasons for settling in the area

Reasons for settling in the area	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Born in the area	5.2	6.0	4.5
Moved here by marriage	92.3	91.3	93.3
Wanted better livelihood (fertile land/business opportunity)	2.4	2.5	2.2
Got land assigned in the area	0.1	0.3	0.0

In both districts, 95.8% of the respondents reported living permanently in the area (reference period one year), while 4.2% of the respondents stated living outside of the village in order to obtain work and sustain their families. The mean household size was 7.0 members (±3.3) (Md=6.0, Min=1, Max= 40) living permanently in a household (reference period was one year). The mean household size in Chhatarpur was 7.4 (±3.6) (Md=7.0, Min=1, Max= 40) while in Sheopur it was 6.5 (±2.8) (Md=6.0, Min=2, Max= 25) (Annex E, page 61). According to traditional Indian patriarchal system, the male head lives with his wife, children and parents along with other close family members like uncles, aunts and their families.

Almost half the respondents were illiterate and had never been to school (48.8%), while 15.9% of the respondents reported going to primary school, 29.4% to secondary school and 5.7% having reported studying more than class 12. In Sheopur, the number of respondents who were illiterate was higher as compared to that in Chhatarpur (Table 10). Among those respondents who went to school (n=411), mean schooling years were 4.0 (± 4.3) years (Md=3.0; Min=0, Max=17) In Chhatarpur mean number of school years were 4.8 (±4.3) (Md=5.0, Min= 0, Max=17) while in Sheopur the mean number of school years were 3.0 (±4.1) (Md=0, Min=0, Max=15).

Table 10: Education Level of respondents

Level of education	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
No education	48.8	37.5	60.0
Primary	15.9	18.3	13.6
Secondary	29.4	37.3	21.8
More than secondary	5.7	7.0	4.5

Respondents were asked for income sources of the household throughout the year. The main income source was sale of crops (55.8%) and casual labour/temporary salary (46.7%) (Table 10Table 11, page 26). The sale of crops was higher in Chhatarpur (63.0%) than in Sheopur (48.6%), this could be attributed to the fact that Chhatarpur is better connected to other Indian states as compared to Sheopur. The income differed in both the districts, which could be due to the presence of the tribal population. The percentage of tribal population is higher in Sheopur than in Chhatarpur. Traditionally, tribal people lived in forests; their main source of livelihood was collection of forest produce, while the Scheduled castes in Chhatarpur were more agrarian.

Annex F (page 61) also gives a better understanding of the division of labour between the male and female members in the household.

Table 11: Main sources of income throughout the year

Source of income	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
		63.0	48.6
Sale of own produced or gathered goods/crafts	2.6	2.0	3.2
Casual labour/ temporary Salary	46.7	43.8	49.6
Petty trade/ small business	13.4	19.8	7.2
Employment/ regular salary	11.5	5.3	17.6
Remittance from relatives/husband	2.2	3.5	1.0
Income generated by public transfer	1.7	3.5	0.0
Begging / rag picking	0.2	0.5	0.0
Receiving rent	0.5	1.0	0.0
None (subsistence farming only)	7.8	4.0	11.7

In both districts, 59.4% of respondents reported having only one income source and 36% reported having two income sources. In Chhatarpur, 59.6% respondents stated having one income sources and 35.8% had two income sources. In Sheopur, 59.1% having one income source and 36.2% had two income sources. Out of the ten possible income sources, the mean was 1.4 (±0.7) (Md=1.0, Min=0, Max=10). Totally, 11 respondents (2 in Chhatarpur and 9 in Sheopur) reported having no income source. In Sheopur, 11.7% of respondents had no source of income other than subsistence farming to support their families which could be related to the high number of tribal population in Sheopur who traditionally collect forest produce and in the access to arable land which was lower in Sheopur.

4.2. Agriculture

Respondents were asked, if their household had access to any land (in addition to a home garden) that could be used for agriculture. In total, 71.5% of the respondents had access to arable land for agriculture. In Chhatarpur, 78% of the households had access to land which is higher than that in Sheopur (65%). Those respondents, who had agricultural land (N=574), cultivated the following crops: wheat (92.7%), followed by mustard (66.0%), Bengal gram (55.3%) and sesame (55.6%). Between the districts, Sheopur had a slightly higher percentage of wheat (92.7%), and mustard (77.1%) compared to Chhatarpur but a lower production of Bengal gram (41.2%) and sesame (45.0%). Overall, Sheopur also had a higher percentage of Finger millet production (42.7%) (Table 12, page 27). Overall, the mean crop diversity was 4.6 (±2.1) (Md=4.0, Min=0, Max=13), with households growing between three to four crops. In Chhatarpur, the mean was 4.9 (±2.1) (Md=5, Min=0, Max=10) while in Sheopur this was slightly lower with a mean of 4.2 (±2.0) (Md=4, Min=0, Max=13). Though the maximum number of crops grown in Sheopur was 13, while that in Chhatarpur was only 10.

Table 12: Crop diversity

Crops	Total (N=574) (%)	Chhatarpur (n=312) (%)	Sheopur (n=262) (%)
Maize	3.5	2.3	5.0
Wheat	92.7	92.6	92.7
Paddy/rice	9.6	7.5	12.2
Sorghum	10.7	14.6	6.1
Soya	37.4	34.2	41.2
Mustard	66.0	56.6	77.1
Split Red Gram	16.5	24.0	7.6
Red lentil	13.2	19.9	5.3
Bengal Gram	55.3	67.2	41.2
Groundnuts	13.0	18.8	6.1
Finger millet	21.1	2.6	42.7
Peas	21.5	31.3	9.9
Sesame	55.6	64.5	45.0
Black gram	32.9	47.7	15.3
Mung Bean	2.4	3.8	0.8
Coriander	5.2	0.0	11.5
Other crops	0.7	1.0	0.4

In general, awareness of the local home garden scheme initiated by the government was very low. Only 4.6% of the respondents knew about the home garden scheme which provides free seeds to establish a home garden. Among the respondents, only 20% reported having a home garden, this was higher in Sheopur (21.1%) than in Chhatarpur (19.0%). A little more than half of the home gardens (55.9%) were located on an “assigned area on the farm” as against 44.1% households who had their home gardens “next to the house”. Among the families with home gardens, 48.1% reported growing vegetables in the wet/monsoon season while 42.2% said that they cultivated vegetables all year round. The number of families cultivating vegetables in the wet/monsoon season was higher in Sheopur than Chhatarpur (Sheopur 52.9%, Chhatarpur 42.0%). Majority of the respondents stated growing vegetables mainly for household consumption (82.5%). In Sheopur 20% of the respondents reported cultivating vegetables in the home garden for household consumption and sale (in approximately equal quantities), details of which are presented in Table 13 (page 28). More households in Sheopur stated that they rely much to very much on home vegetable produce for food security compared to Chhatapur.

Overall, only 26.9% of respondents had access to fruit and fruit were used essentially for their own consumption. In this regard, Chhatarpur scored better with 35.8% of respondents stating that they had access to fruit while for Sheopur this was only 18.1%. At the time of data collection, Indian Plum and Guava were in season and easily available.

Livestock was kept by 67% of the households of which 81.6% reported the primary purpose was for their own consumption, which is essentially consumption of milk (later reflected in the dietary diversity of women and children). Consumption of beef is culturally not acceptable. Among those rearing livestock, 14.5% reported the main reason as “both (consumption and sale in approximately equal quantities)”, while only 2.2% of them stated using the livestock mainly for “cultivation/transport purposes”. Both districts had a population who collected indigenous vegetables from the surrounding area (33.5%), but this was higher

in Sheopur (47.9%) as against Chhatarpur (19.0%). The most commonly collected indigenous vegetables were *Chirangali, kakora, Bathua (amaranth), Kachariya* etc. (Annex R, page 68). Respondents stated collecting these vegetables mainly during the wet/monsoon season since these or other leafy vegetables were not available during the dry/summer season.

Table 13: Home garden and livestock ownership and main use of produces

	Total (%)	Chhatarpur (%)	Sheopur (%)
Households without home garden (N=642)	80	81.0	78.9
Households with home garden (N=161)	20	19.0	21.1
Location of home garden (N=161)			
Next to house	44.1	46.1	42.4
Assigned area on the farm	55.9	53.9	57.6
Households grows vegetables (N=154)	95.7	90.8	100
Season of vegetable production			
- during wet-season	48.1	42.0	52.9
- during dry-season	9.7	4.3	14.1
- year around	42.2	53.6	32.9
Main use of vegetables			
- own consumption	82.5	85.5	80.0
- sale	1.9	4.3	0.0
- both (in approx. equal amounts)	15.6	10.1	20.0
Dependence on vegetable for food security			
- very much	35.7	25.7	44.0
- much	24.7	17.1	31.0
- neutral	24.7	28.6	21.4
- not much	14.9	28.6	3.6
- not at all	35.7	25.7	44.0
Households with no access to fruits (N=587)	73.1	64.3	81.9
Households with access to fruits (N=216)	26.9	35.8	18.1
Main use of fruits (N=216)			
- own consumption	94.4	93.0	97.3
- for sale	0.5	0.7	0.0
- both (in approx. equal amounts)	5.1	6.3	2.7
Households not keeping livestock (N=265)	33.0	28.0	38.0
Households keeping livestock (N=538)	67.0	72.0	62.0
Main use of livestock produce (N=538)			
- own consumption	81.6	79.9	83.6
- for sale	1.5	2.1	0.8
- both (in approx. equal amounts)	14.5	15.3	13.6
- cultivation/transport	2.2	2.8	1.6
Households collecting indigenous vegetables (N=534)	66.5	81.0	52.1
Households collecting indigenous vegetables (N=269)	33.5	19.0	47.9

Respondents were asked if they participated in any public programmes. Majority of the respondents participated in the ICDS/Anganwadi programme (89.3%). In Sheopur the participation of households in all programmes was higher as compared with Chhatarpur. Details of which are presented in Table 14.

Table 14: Household benefiting from public programmes

Household benefiting from public programmes	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
School feeding	38.4	37.5	39.2
Anganwadi / ICDS	89.3	88.8	89.8
Public works programs (MNREGA)	25.9	20.5	31.3

4.3. TPDS

The Targeted Public Distribution System (TPDS) is a government-run scheme by the Department of Food, Civil Supplies and Consumer Protection. It is one of the largest food security programmes in the world and is a key element in the Government's food security programme. It is an instrument to ensure the availability of essential commodities to the poor at easily affordable prices. Through the Food Corporation of India (FCI), the Government procures, stocks and releases food grains via the Public Distribution System network across the country. In addition to rice and wheat, sugar, edible oils and kerosene are distributed through Fair Price Shops. These commodities are provided to the public at a subsidized cost. The procurement system is also used by the Government to provide minimum support prices to stabilize farm output and income.

Even though the subsidies provided by the government have been increasing and the quantity of food grains are sufficient, the TPDS system has failed to translate into household food sufficiency, especially for poor families. As passed by the Parliament of India, Government has notified the National Food Security Act, 2013 on 10th September, 2013 with the objective to provide for food and nutritional security in human life cycle approach, by ensuring access to adequate quantity of quality food at affordable prices to people to live a life with dignity. The Act provides for coverage of up to 75% of the rural population and up to 50% of the urban population for receiving subsidized food grains under Targeted Public Distribution System (TPDS), thus covering about two-thirds of the population. The eligible persons will be entitled to receive 5 Kgs of food grains per person per month at subsidized prices of INR 3/2/1 per Kg for rice/wheat/ coarse grains. The existing Antyodaya Anna Yojana (AAY) households, which constitute the poorest of the poor, will continue to receive 35 Kgs of food grains per household per month. Recently, Government of Madhya Pradesh has increased the ambit of TPDS to cover all the priority households, there are totally 25 categories of people who qualify for TPDS. Some of these are those families living Below the Poverty Line (BPL), urban domestic help, orphan children and destitute living in boarding and aged people living in free old-age homes to weavers and artisans registered under Cottage and Village Industries department to railway porters, all SC & ST families domicile of MP to families whose crops are affected more than 50% due to natural calamities 2013-14.

In our study, 42% households were not beneficiaries of the TPDS programme. In order to understand if these households actually qualify to be beneficiaries of the TPDS programme, further analysis would need to be done. This study aimed to focus on the dietary diversity of women and children in general and to generate data on the same which could be used internationally, hence no further analysis for TPDS was

done. From among the beneficiaries, in 27.9% households the card could not be checked. Further probing revealed reasons like occasionally the women had to leave the card in the TPDS shop or the female in the household was not allowed access to the card. Other details are presented in Table 15.

Table 15: TPDS beneficiaries and other details

	Total (%)	Chhatarpur (%)	Sheopur (%)
	42.0	42.3	41.7
Household is a TPDS beneficiary (N=466)	58.0	57.8	58.3
Availability of TPDS card in house (N=466)			
No, card could not be checked	27.9	30.7	25.1
Yes, card could be checked	71.9	68.8	74.9
Not having any card	0.2	0.4	0.0
Type of TPDS card (N=335)			
Antyodaya Anna Yojana (AAY)	18.2	13.2	22.7
Below Poverty Line (BPL)	56.4	57.9	55.1
Above Poverty Line (APL)	25.4	28.9	22.2
Households having access to TPDS shop (N=423)	91.0	87.8	94.0
Households without access to TPDS shop (N=42)	9.0	12.2	6.0
Challenges accessing the TPDS shop (N=42)			
Distance to shop	95.2	96.3	100
Lack of transport to TPDS shop	40.5	35.7	50.0
Household unable to go on assigned date	4.8	7.4	0.0
Food not available in shop	2.4	3.7	0.0

4.4. Household food insecurity

In order to assess food security of the households, the standardised “Household Food Insecurity Experience Scale” (HFIES), developed by FAO, was used (FAO 2015). Respondents were asked if they or anyone else in their household (1) were worried about not having enough food, (2) were unable to eat healthy and nutritious food, (3) ate only a few kinds of foods, (4) had to skip a meal, (5) ate less than they thought they should, (6) ran out of food, (7) were hungry but did not eat (if yes, how often), (8) went without eating for a whole day (if yes, how often). The reference period was the previous four weeks (one month). As presented in Table 16 (page 31) half of the households (50.1%) were categorized as food secure, while 34.3% faced mild food insecurity, 11.7% of them were categorized as moderately food insecure and 3.9% falling into the severe food insecure category. Data are presented at district level to provide an overview. Before comparing HFIES data of any subsamples, the scale needs to be adjusted to a global standard. There was also no difference between the number of meals consumed by the respondent and her husband/male partner the previous day. The mean number of meals consumed by the respondent was 2.3 (±0.6) (Md= 2, Min=0, Max= 5) while the mean number of meals consumed by her husband/male partner was 2.2 (±0.6) (Md= 2, Min=0, Max= 5).

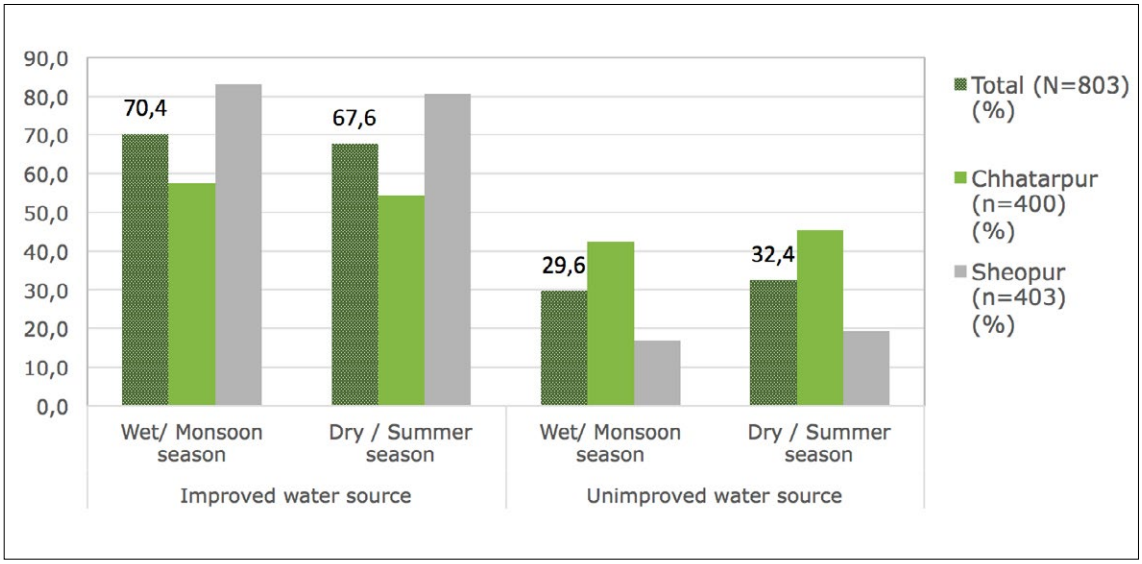
Table 16: Household Food Insecurity Experience Scale

Variable	Total (N=788) (%)	Chhatarpur (n=385) (%)	Sheopur (n=403) (%)
Food secure	50.1	44.7	55.3
Mild food insecure	34.3	40.3	28.5
Moderate food insecure	11.7	12.5	10.9
Severe food insecure	3.9	2.6	5.2

4.5. Water, Sanitation and Hygiene

According to the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, an improved source for water is one that, by the nature of its construction and when properly used, adequately protects the source from outside contamination, particularly faecal matter. Improved water sources are defined as water coming from piped water into dwelling, yard or plot, public tab or standpipe, tube well or borehole, protected dug well or protected spring (the well is covered by a concrete curb and cap) and rainwater collection. Three fourth of the surveyed households had access to an improved source of water which they used for fetching the water they used for drinking (http://www.wssinfo.org/definitions-methods/watsan-categories/). During the wet/cold season, 70.4% of the households had access to water from an improved source; this was higher in Sheopur (83.1%) as against Chhatarpur (57.5%). During the hot/dry season, this number went down to 67.6% with Sheopur in a better position as against Chhatarpur (Sheopur 80.6%, Chhatarpur 54.5%) (Figure 4, page 32). During the hot/dry season, more borewells/handpumps tend to dry out and families then rely on water coming from streams and rivers. These sources (streams and rivers) tend to be polluted due to various human and animal related activities; like washing of animals, clothes, utensils and washing the body, apart from defecating and urinating; which are carried out along the river bank.

Figure 4: Access to improved/unimproved water sources used for drinking



Respondents were asked to freely recall the way in which they store water used for drinking and less than half (48.1%) stated storing it in a clean and covered container/jar. Details of the three pre-defined categories are presented in Table 17. The category of “clean and covered container/jar” is the most improved way to store water. Not cleaning the container/jar results in an increased risk of pathogens multiplying and polluting the stored water. Uncovered containers/jars increase the risk of pathogens entering the water through contact with dirt/dust (carried through the wind) or animals drinking the water.

Table 17: Storage of water used for drinking

Way of storage	Total (N=801) (%)	Chhatarpur (n=398) (%)	Sheopur (n=403) (%)
Clean container/jar	20.7	21.1	20.3
Covered container/jar	31.2	31.9	30.5
Clean and covered container/jar	48.1	47.0	49.1

Respondents were also asked if they treated the water used for drinking in order to make it safe for consumption. Three-fourth of the surveyed households responded in negative. Among these households, 90.1% were from Sheopur and 61.5% were from Chhatarpur. Table 18 (page 33) shows the freely recalled means of treating water. Treating the water to make it safe for drinking is necessary when it is collected from an unimproved source. However, respondents might feel the need to treat their water even if it comes from an improved water source. Reasons for this behaviour could be that they had negative experience with the water quality, or that they store their water for longer periods of time, or that health worker advised them on doing so. The utensil/container in which the water is collected and stored might also constitute a treatment of the water before drinking it.

Table 18: Mentioned treatment of water for safe consumption

Treatment of water	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Not treating water before drinking	75.8	61.5	90.1
Treating water before drinking (n=194)	24.2	38.5	9.9
Boil it	5.2	5.3	5.0
Adding bleach/chlorine	1.0	1.3	0.0
Strain it through a cloth	92.2	92.1	92.5
Let it stand and settle	0.5	0.0	2.5
Community tap filters	0.5	0.7	0.0
Other	0.5	0.7	0.0

At the time of the data collection, 90.8% of the households reported to be having soap. This was also confirmed by the enumerators who were asked to physically check the presence or absence of soap in the household. The last time the respondents used soap was usually for personal hygiene (taking a bath), cleaning clothes and dishes. The enumerators probed for the occasion when “washing hands with soap” was mentioned. Details of which are presented in Table 19.

Table 19: Use of Soap for washing hands

Hand washing occasion	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Washing children's hands	40.1	48.1	32.3
Washing hands after defecation	75.7	76.7	74.7
Washing hands after cleaning the child	35.3	39.8	30.8
Washing hands before feeding the child	29.2	32.1	26.3
Washing hands before preparing food	46.1	48.1	44.2
Washing hands before eating	42.6	45.9	39.5
Washing hands after touching/cleaning animals	19.1	23.6	14.6
Personal hygiene, clothes and dishes	89.4	86.0	92.8

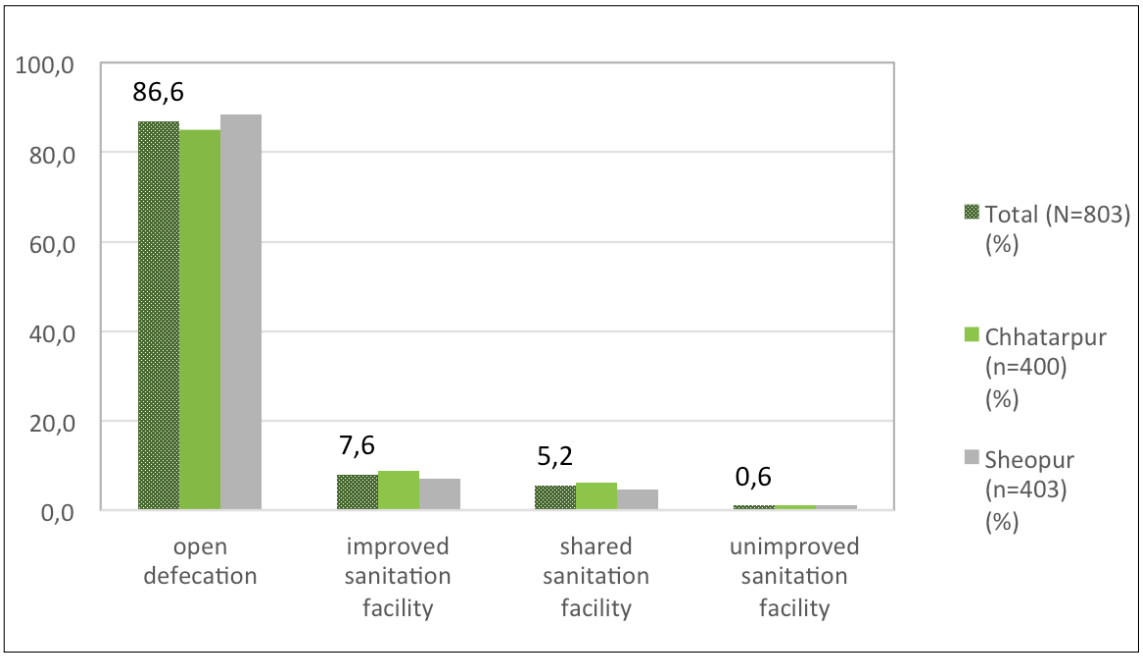
Table 20: Mentioned ways of washing hands

Hand-washing practice	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Washes hands in a bowl of water (sharing with other people) without soap or ash	9.6	12.8	6.5
Washes hands in a bowl of water (sharing with other people) with soap or ash	8.6	10.8	6.5
Washes hands with someone pouring water from a jug onto one's hands or under running water without soap or ash	2.4	3.0	1.7
Washes hands with someone pouring water from a jug onto one's hands or under running water with soap or ash	79.4	73.4	85.4

Overall the reported hand washing behaviour for various occasions was fairly improved in both districts. Further, respondents were asked to describe step by step how they usually washed their hands. Sharing a bowl of water with other people and not using soap was classified as the least improved hand washing option, since the water is only clean for the first person. Furthermore, people with a lower considered status like women and children usually wash their hands at the very end. A more improved hand washing option is when someone pours water from a jug onto someone's hands, or under running water from a tip-bottle or tap. Using soap or ashes in addition to pouring or running water is the most improved option. In total, in both districts 79.4% of respondents reported that the most common way of washing hands was with someone pouring water onto their hands (Table 20, Page 33). Even though the women were asked to describe their hand-washing methods, the question of whether hand washing was actually practised the way as mentioned is debatable. The enumerators were asked to report if there was any occasion when the respondent had to clean or feed the child or prepare food or perform any of the stated options during the interview. Some enumerators reported that even though the respondent may have performed such tasks, she did not necessarily wash her hands or wash her hands with soap and water. The lead consultant also observed the same during data collection. Many respondents either used plain water to wash their hands or washed their hands with mud. The reason for answering this question could be due to the existing knowledge on hand washing and answering this question negatively would reflect negatively on them (socially desirable answers). Access to sanitation facilities was very low throughout the survey region with over 85.6% of the respondents having no sanitation facility at all, practicing open defecation (84% Chhatapur, 87.1% Sheopur). Most households that actually had a facility were sharing it with other households (40.6% Chhatapur, 40.4% Sheopur). Shared sanitation (with other households or public

sanitation e.g. school latrines) or not having a sanitation facility was defined as unimproved sanitation facility, which is the reason why access to improved sanitation facilities was very low. The majority of households were using an unimproved sanitation facility (92.4%). Improved sanitation was defined as access to a flush or pour-flush toilet to piped sewer system or septic tank, flush to pit latrine; ventilated improved pit latrine; pit latrine with slap; and composting toilet.

Figure 5: Access to and type of sanitation facilities



The respondents were asked about the ways in which food poisoning could be prevented. The enumerator conducting the interview explained to the respondent that food poisoning often results from contact with germs from faeces. Afterwards, respondents were asked to freely recall what they can do to avoid sickness from germs from human or animal faeces. Majority of the surveyed households (96.8%) responded that covering food to protect it from flies was a way to avoid food poisoning. Table 21 outlines the other responses in detail. Washing fruits and vegetables before preparation was another way described as a way of preventing food poisoning. However, on further probing for “covering food to protect it from flies”, respondents were not able to describe in detail and it is questionable if only covering food to protect it from flies is sufficient to avoid food poisoning. Preparation of food in clean surroundings, washing fruits and vegetables before preparation and washing hands is equally important in preventing food poisoning. If the food is prepared under unhygienic conditions this could lead to contamination of the food and just covering such food may not be sufficient to avoid food poisoning. Also, not washing hands with soap or ash, especially after defecating or after cleaning the child, could result a high risk of contracting diseases as is seen in the prevalence of diarrhoea (Diarrhoea, page 35). Respondents were asked if they had received hygiene counselling, only 36.3% answered in affirmative (Sheopur 32.3%, Chhatarpur 40.5%), thus indicating that the prevalence of hygiene counselling is very low.

Table 21: Mentioned ways to avoid food poisoning

Food poisoning can be avoided by…	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Washing hands	45.0	55.9	34.2
Remove faeces from home and surrounding	41.1	48.4	34.0
Cover food to protect it from flies	96.8	96.7	96.8
Wash fruits and vegetables before preparation	60.2	52.4	68.0

4.6. Diarrhoea

High prevalence of diarrhoea as well as frequent diarrhoea episodes can be an indicator for poor sanitation and hygiene environment (UNICEF 1998). Information on health of the child included the occurrence of diarrhoea within the last two weeks prior to the survey and frequency of diarrhoea episodes of the child since birth until the day of the interview. Diarrhoea was determined as perceived by the respondent, or as three or more watery stools per day, or blood in stool. The prevalence of diarrhoea within the two weeks prior to the survey was 35.7% (Sheopur 38.0%, Chhatarpur 33.3%). Among the surveyed households, 64.3% reported that the child had not had diarrhoea within the past two weeks. The mean occurrence of diarrhoea in a child since birth was 3.7 (±3.9) (Md=3, Min=0, Max=38). In Chhatarpur, the mean occurrence of diarrhoea since birth was 3.7 (±4.3) (Md=3, Min=0, Max=38) while in Sheopur this was 3.8 (±3.6) (Md=3, Min=0, Max=30). The range of 1-38 times is high and these results indicate that diarrhoea is a problem in the areas, and the underlying factors like inappropriate sanitation and hygiene also need to be addressed in the upcoming projects.

4.7. Knowledge, attitudes and practices in regard to health aspects

In the case of India, almost all respondents were the child's mother, very seldom was the mother absent in which case the primary female caretaker was interviewed. The mean age of respondents was 25.3 (±4.2) years, (Md=25, Min=15, Max=44). Often, mothers did not know her age or year of birth, which then had to be obtained from the antenatal care card or if the card was not available, the enumerators had to approximately calculate the age of the mother. The mean number of times the respondents received antenatal care during their last pregnancy was 3.1 (±2.2) (Md=3, Min=0, Max=20). In total, 6.5% of the respondents did not go to the antenatal clinic during their last pregnancy. Respondents also stated that often they gave birth at home, this was especially common among the tribals in Sheopur. The recommended number of antenatal care visits is 4, this was only achieved by 10.9% of the women interviewed. The mean number of times the child who was enrolled was taken to the Anganwadi (under 5 clinic) was 3.4 (±1.8) times (Md=3, Min=0, Max=22). Children need to be taken to the Anganwadi, in order to take part in regular growth monitoring sessions. The importance of these visits to the Anganwadi needs to be emphasized in up-coming projects. The respondents were also asked questions to understand the level of their knowledge on eating behaviour during pregnancy and lactation. Half the respondents (50%)

indicated that pregnant and lactating women should eat more followed by 53.2% stating that they should eat different types of food each day. The other responses are detailed in Table 22. It is also important to note that many respondents answered that pregnant women should also eat less in order to ensure that there is place for the baby's movements. More than half of the respondents received no support in taking care of the enrolled child (Table 23). Main support in childcare (33.3%) was provided by the child's grandmother, the mother/mother in law of the respondent.

Table 22: Knowledge regarding the eating behaviour during pregnancy and lactation

Eating behavior during pregnancy and lactation	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Should eat more (increase in quantity)	50.0	49.9	50.1
Should eat different types of food each day	53.2	59.4	47.1
Should eat frequently	45.4	50.1	40.7
Should take iron tablets	57.7	60.2	55.3
Should eat fruits and vegetables	2.9	2.0	3.7
Should eat less to ensure place for baby movements	13.3	11.3	15.4

Table 23: Supporter in taking care of the child (6-23 months)

Care taker of the child	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Respondent alone	59.0	61.8	56.3
Mother/mother in law of respondent	33.3	28.8	37.7
Older siblings of the child	4.0	4.5	3.5
Father of the child	1.1	1.3	1.0
Relatives	2.6	3.8	1.5

4.8. Knowledge, attitudes and practices regarding complementary feeding

The respondents were to state the consistency of food they prefer to feed their child when food is introduced. Half of the respondents (50.1%) stated that they would prefer a thin-watery consistency for their child. In Sheopur, this preference was higher than in Chhatarpur (Sheopur 54.2%, Chhatarpur 45.8%). Thin-watery complementary food (for example watery rice-porridge or dhal, or *khichri*, a mixture of rice and lentils) contains fewer nutrients than complementary food of thick consistency, which is a common reason for malnutrition among young children. The main reason behind feeding a child food of thin-watery consistency was that the child would not be able to swallow thick food. Often respondents stated that porridge/*khichri* was not made separately for the child due to the lack of money but that the child received family food.

Respondents were asked to freely recall the ways in which they could make porridge/*khichri* more nutritious for the child. Three-fourth of the surveyed households stated that addition of fat/oil was a way to

increases the nutritious value of the porridge/*khichri*. This was followed by the "addition of animal sourced food" (62.8%), which was primarily the addition of milk. Only 11% of respondents stated the addition of vitamin A rich fruits and vegetables. Details of the other ways are listed in Table 24. The mean number of mentioned types of options to increase the nutritional value of the porridge was 2.1(±1.2) (Md=2, Min=0, Max=5). Most respondents only knew the addition of two options to improve the nutritional profile of the porridge/*khichri.* Among the respondents, 9% could not state any addition which would improve the nutritional value of the porridge. All these results indicate that knowledge is lacking and needs to be addressed.

Table 24: Mentioned types of food for making porridge more nutritious

Additions to porridge	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Animal sourced food	62.8	57.9	67.7
Pulses	42.4	47.9	37.0
Vitamin A rich fruits and vegetables	11.0	14.3	7.7
Green leafy vegetables	17.0	24.6	9.4
Oil/fat	78.4	78.4	78.4

A free recall of the **signs of malnutrition** resulted in 70.8% of respondents stating "lack of energy/ weakness" and 80.7% stating "loss of weight/thinness" as the major signs of malnutrition. In this region, where growth faltering in children is a major challenge, it was recognized by only 13.0% of the respondents. Other responses are detailed in Table 25 (page 39). Only one (26.6%) or two (48.4%) signs of malnutrition were able to be stated by the respondents. Of the total, 5.1% of respondents did not mention any of the pre-defined answers. The mean number of mentioned signs of malnutrition was 1.9 (±0.9) (Md=2, Min=0, Max=4).

Table 25: Mentioned signs of malnutrition

Signs of malnutrition	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Lack of energy/weakness	70.8	66.7	74.9
Weakness of the immune system	22.2	18.3	26.1
Loss of weight/thinness	80.7	84.2	77.2
Growth faltering in children	13.0	17.0	8.9

The most common response for the **reasons of malnutrition** was not getting enough food (40.8%). The next most common reason was "illness and not getting enough food" was known by 24.9% of the respondents, the remaining did not know the importance of not meeting the higher energy and nutrient requirements during illness as a reason for malnutrition (Table 26). The mean mentioned reasons for malnutrition 0.9 (±0.9) (Md=1, Min=0, Max=3). Among the total households surveyed, 43% were unable to mention any of the pre-defined reasons for malnutrition. In Chhatarpur, 34.6% of the total respondents could not mention any reason for malnutrition but this number was higher for Sheopur (51.4%). In both districts around 30% of the respondents could mention only one reason for malnutrition.

Table 26: Mentioned reasons for malnutrition

Reasons for malnutrition	Total (N=803) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Not getting enough food	40.8	46.9	34.7
Watery food with lack of nutrients	22.1	24.6	19.6
Illness and not getting enough food	24.9	35.3	14.6

Respondents were asked to freely mention **ways to prevent malnutrition** in young children (6-23 months), the mean number of mentioned ways was 2.0 (±1.3) (Md=2, Min=0, Max=5). The most common ways mentioned were “attend growth monitoring sessions” (67.1%) and “give attention during meals” (43%) (Table 27). Often respondents confused growth monitoring with taking the child to the Anganwadi or Nutrition Rehabilitation Centre (NRC) especially when the child was severely malnourished and ill. Some respondents (17.2%) did not mention any of the pre-defined answers.

Table 27: Mentioned ways to prevent malnutrition in young children (6-23 months)

Prevention of Malnutrition	Total (N=802) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
Give more food	34.3	36.1	32.5
Give diverse food each day	29.3	33.1	25.6
Feed frequently	25.3	28.3	22.3
Give attention during meals	43.0	43.6	42.4
Attend growth monitoring	67.1	60.7	73.4

During episodes of sickness, the respondents were asked about their feeding practice with regard to the amount of fluids (including breastmilk) and foods[3] offered to the child. In total, 52.3% stated offering “somewhat less” and 3% stated that they did not offer the child any fluids. In regard to the foods offered during illness, 40.4% reported offering “somewhat less” and 13% offered nothing to the child during episodes of illness. Only 2.4% and 1% offered more fluids and food respectively. There is a common belief that a sick body is not able to absorb fluids and nutrients and hence, it is a waste to offer fluids or foods to a sick child. Details in Table 28: Fluids and liquids offered during illness.

Table 28: Fluids and liquids offered during illness

Amount of fluids offered during illness	Total (N=800) (%)	Chhatarpur (n=397) (%)	Sheopur (n=403) (%)
- nothing	3.0	3.3	2.7
- much less	28.3	26.2	30.3
- somewhat less	52.3	58.4	46.2
- about the same	13.8	9.6	17.9
- more	2.4	2.0	2.7
- child has never been sick	0.4	0.5	0.2

3 If the child already takes food.

Amount of foods offered during illness	Total (N=801) (%)	Chhatarpur (n=398) (%)	Sheopur (n=403) (%)
- nothing	13.0	9.5	16.4
- much less	31.1	33.4	28.8
- somewhat less	40.4	45.0	36.0
- about the same	9.4	7.8	10.9
- more	1.0	0.3	1.7
- child has never been sick	0.5	1.0	0.0
- child does not yet take food	4.6	3.0	6.4

4.9. Nutrition counselling

To detect the availability of nutritional counselling at the village level, respondents were asked to name nutritional counselling structures at their village. Overall, 91.6% identified the ICDS/ Anganwadis as the main structure for nutritional counselling, while 7.2% reported having no counselling structure in the village (Table 29, page 41). In the study area, 57.6% reported receiving nutritional counselling from the Anganwadi while 41.5% reported that they did not receive any nutritional counselling (Table 30, page 41). Further questions, regarding the kind of nutrition counselling received (individual or group counselling, cooking demonstrations), if and what kind of training material was received and the frequency or duration of these sessions, were not asked. In general, the nutritional counselling was poor and in some cases, respondents were not aware that they could receive nutritional counselling from the Anganwadis. Ensuring and creating the availability of nutrition counselling and ensuring compliance needs to be focused on in future projects.

Table 29: Counselling structure for nutrition in the village

Nutrition counselling structure	Total (N=802) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
No counselling structure	7.2	10.0	4.5
ICDS/Anganwadi	91.6	88.7	94.5
Primary health centre	0.6	0.8	0.5
Non-governmental Organization	0.2	0.0	0.5
Other	0.2	0.5	0.0

Table 30: Received nutrition counselling among respondents

Source of nutrition counselling	Total (N=802) (%)	Chhatarpur (n=399) (%)	Sheopur (n=403) (%)
No counselling received	41.5	35.3	47.9
ICDS/Anganwadi	57.6	63.7	51.6
Primary health centre	0.2	0.3	0.2
Non-governmental Organization	0.1	0.0	0.2
Other	0.4	0.7	0.0

4.10. Dietary diversity of women 15-49 years

Mean IDDS-W was 3.6 (±1.2) (Md=3, Min=0, Max=8), meaning that on an average 3.6 different food groups were consumed on the day prior to the interview (Figure 6). In Sheopur, mean dietary diversity was lower as compared to that in Chhatarpur (Sheopur 3.4 (±1.1), Chhatarpur 3.8 (±1.3)) (Annex G, page 62).

Figure 6: Number of food groups consumed by women 15-49 years

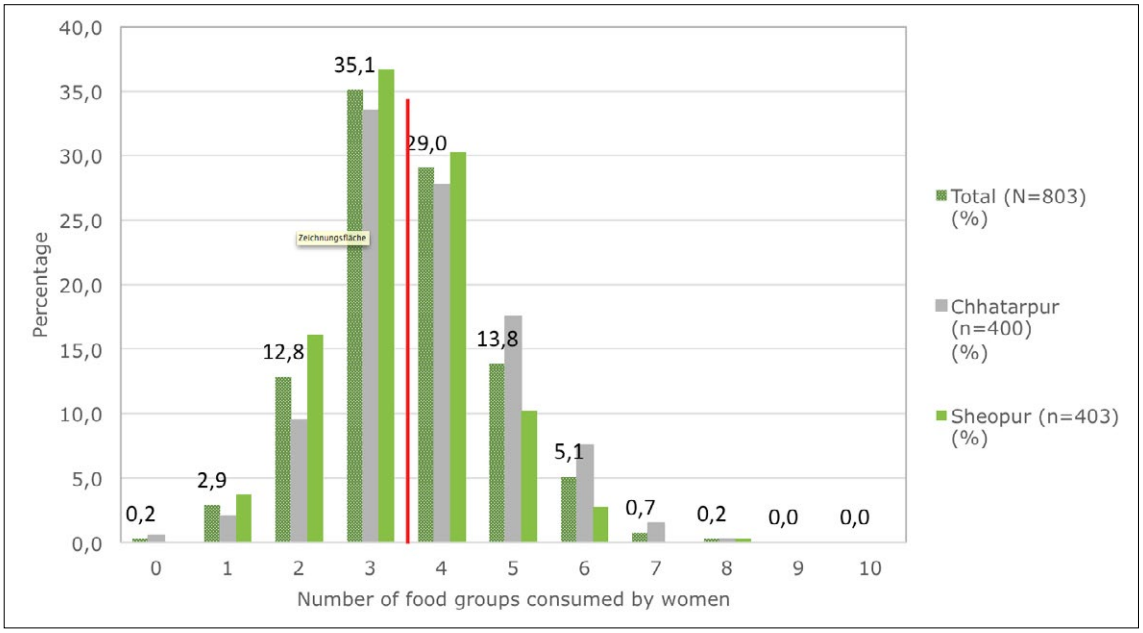
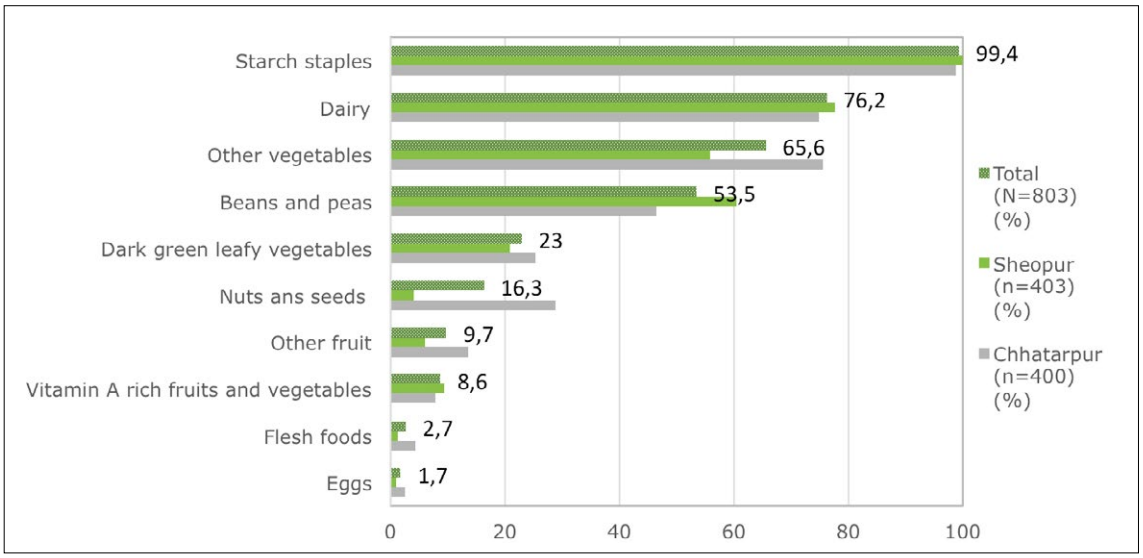


Figure 7 shows the prevalence of commonly consumed food groups among women, 99.4% consumed starchy staples followed by 76.2% consuming dairy and 65.6% consuming other vegetables. Very few women consumed dark green leafy vegetables (23%) and vitamin A rich fruits and vegetables (8.6%). Half the women consumed beans and peas (53.5%). The consumption of flesh foods (2.7%) and eggs (1.7%) was very low.

Figure 7: Prevalence of consumed food groups by women aged 15-49 years



It is important to note that consumption of dairy is mainly the consumption of milk in tea. During the training period, emphasis was laid on the quantity of foods consumed, since a minimum of 15g of a food needs to be consumed for the food to be counted. Enumerators were trained to count the dairy group only if the consumption of milk (in tea) was sufficient. In the study area, the consumption of several cups of tea (with milk) is very common and most women were found to drink three to four cups of tea in a day.

The respondents were also asked, if their food intake was different from other days, if it was a fast or a feast. For 92.8% of the respondents their intake was no different from the other days, i.e, it was a regular day.

Minimum Dietary Diversity – Women

Only 19.9% of the women were able to consume the recommended ≥5 food groups (Chhatarpur 26.8%, Sheopur 13.2%). This result shows that a majority of women are not able to achieve nutrient adequacy, which needs to be focused on in up-coming projects. Consumption of dark green leafy vegetables, other fruit, and vitamin A rich fruits and vegetables was low. The consumption and importance of these foods needs to be advocated in the study area and the same should be monitored in future monitoring activities. Flesh foods and eggs are probably not culturally acceptable, which explains the low consumption rates.

4.11. Information on children aged 6-23 months

The mean age of children was 13.7 (±4.9) months (Md=14, Min=5, Max=24). Slightly more boys were included in the survey than girls (boys 51.7%, girls 48.3%).

4.12. Dietary diversity of children aged 6-23 months

Breastfeeding practice and breastfeeding status of children 6-23 months of age

Respondents were asked if the child was ever breastfed, when the mother first gave other foods apart from breast milk, and if the child consumed breast milk the day or night prior to the interview. In total, 90.6% of all the children were ever breastfed. At the time of data collection, 88.3% of the children were still being breastfed (Chhatarpur 90.8%, Sheopur 85.8%). The mean age of the child when first introduced to complimentary foods (soft, semi-soft or solid foods apart from breast milk) was 6.2 (±2.4) months (Md=6, Min=0, Max=17).

The WHO recommends to disaggregate and report IYCF indicators for the age groups of 6-11 months, 12-17 months and 18-23 months (WHO 2007). A total of 16 children (13 children < 6 months and 3 children > 23 months) were not in the respective age group of 6-23 months (n=787) and therefore excluded from the analysis of the WHO indicators. The majority of children (88%) were breastfed the day/night prior the survey. The number of children being breastfed was the highest for the youngest age group, i.e., 6-11 months (96.6%) followed by children between 12-17 months (89.4%). In total, 74.3% of the children between 18-23 months were still being breastfed. The WHO recommends continuing with breastfeeding until the age of two years (WHO 2001), which was therefore met by almost three fourth of children in the oldest age group (Table 31) Due to missing breastfeeding information one child was excluded from the analysis (missing value n=1, age group 18-23 months).

Table 31: Prevalence of breastfed children disaggregated into WHO age-groups

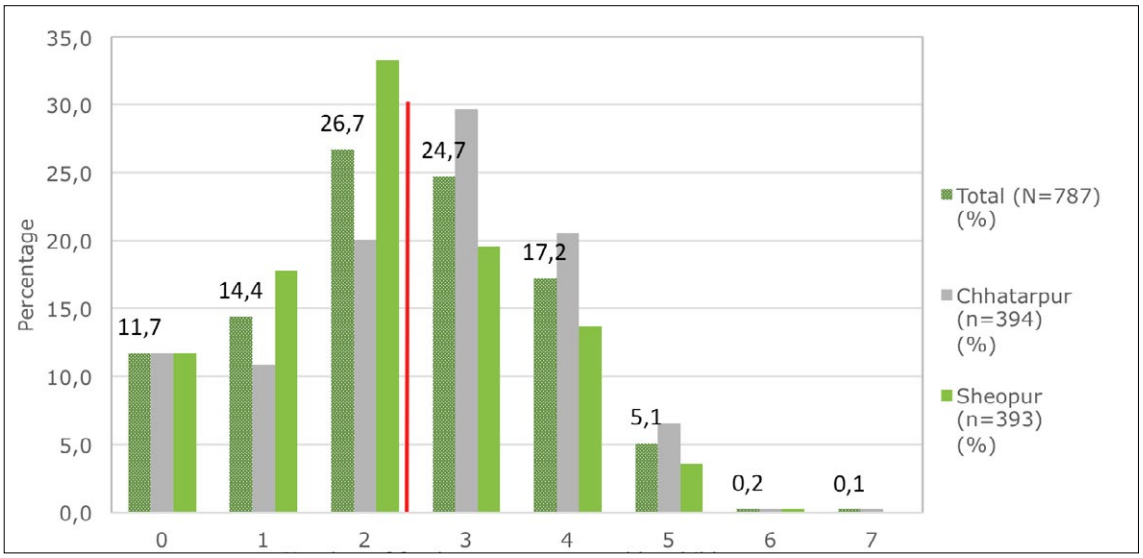
Children being breastfed	Total (%)	Chhatarpur (%)	Sheopur (%)
6-11 months (n=264)	96.6	97.6	95.6
12-17 months (n=331)	89.4	92.5	86.1
18-23 months (n=191)	74.3	77.7	71.1

Individual Dietary Diversity Score for children 6-23 months of age

The majority of the children 6-23 months of age (85%) receive received soft, semi-soft or solid food apart from breast milk the previous day. However, only for 9.8% children, food was prepared separately, the remainder were fed the food cooked for the family. The mean age at which family food was fed to the child was 7.1 (±3.6) months (Md=7, Min=0, Max=18).

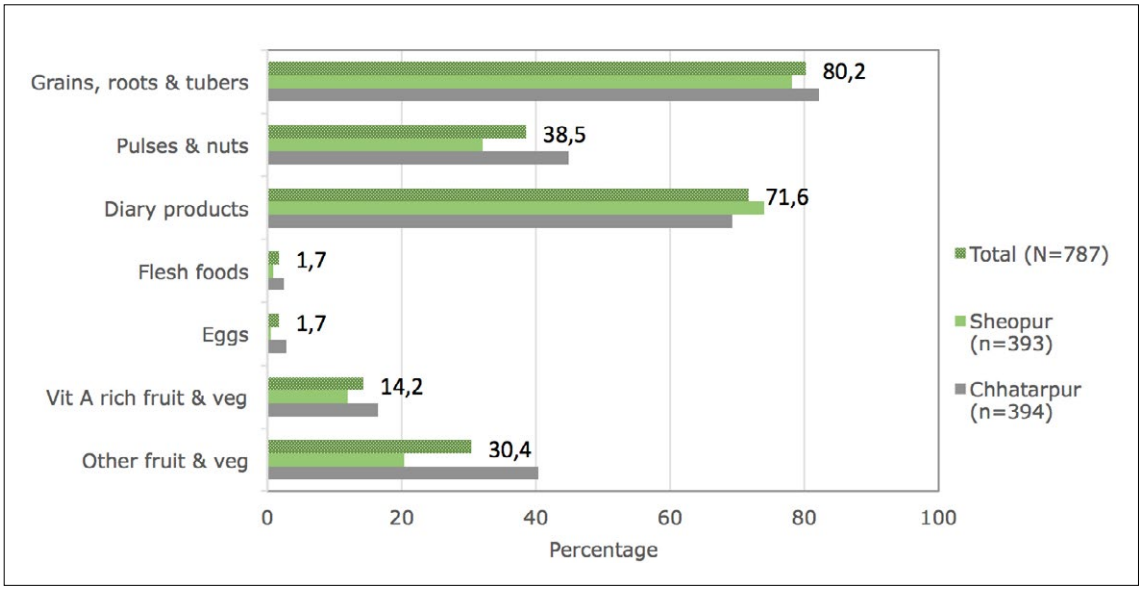
The mean IDDS for children 6-23 months of age was 2.38 (±1.4) (Md=2, Min=0, Max=7). The IDDS for children being breastfed was 2.3 (±1.4) (Md=2, Min=0, Max=7) which was lower than for non-breastfed children (mean= 3.10 (±1.1), Md= 3, Min=0, Max=5) (Annex K, page 63).

Figure 8: Number of Food Groups consumed by all children



Distribution of food groups consumed by children between 6-23 months is detailed in Figure 9. Main food groups consumed (80%) by children were grains, roots & tubers and dairy products (72%). Here again, as in the case of women, it is important to note that majority of the children consumed milk in tea, only 28.5% of children had consumed plain milk the day prior to the interview. Pulses and nuts were consumed by 39%. The consumption of other fruit and vegetables was twice as high in Chhatarpur (40%) compared to Sheopur (20%). The consumption of vitamin A rich fruits and vegetables was very poor in both districts (14%). Like observed for the dietary diversity of women, other animal source foods like meat and eggs were basically not consumed by children as well. The diversity of foods consumed per food group is presented in Annex Q (page 66).

Figure 9: Prevalence of consumed food groups all children 6-23 months



Minimum Dietary Diversity

The minimum dietary diversity of ≥4 different food groups was achieved only by 22.6% of the children. In Chhatarpur 24.1% of breastfed children achieved MDD, while only 14.9% of the breastfed children in Sheopur had a sufficient dietary diversity. The percentage of non-breastfed children achieving MDD was higher in Chhatarpur (62.2%) as compared to Sheopur (33.9%) too. Table 32 (page 46) outlines the details.

Minimum Meal Frequency

The mean feeding frequency for all children was 2.8 (±1.9) times within the last day (N=786, Md=3, Min=0, Max=10) (Annex L, page 63). Due to missing breastfeeding information one child was excluded from the analysis (missing value n=1, age group 18-23 months). The percentage of children being fed the minimum number of times or more was 58.9%. Further, disaggregating into breastfeeding status, 56.4% of breastfed children and 77.4% of non-breastfed children achieved MMF. These numbers were higher in Chhatarpur compared to Sheopur (Chhatarpur 60% (breastfed), 92% (non-breastfed); Sheopur 53% (breastfed), 68% (non-breastfed)).

Minimum Acceptable Diet

The WHO indicator MAD includes all children 6-23 months who received at least the MDD of ≥4 different food groups and the minimum age appropriate meal frequency according to their breastfeeding status during the previous day. Due to missing breastfeeding information one child was excluded from the analysis (missing value n=1, age group 18-23 months). In total, 18% of breastfed children received MAD. In Chhatarpur, 21.8% of breastfed children achieved MAD which was higher as compared to that for Sheopur (14%). Among non-breastfed children, only 2.2% achieved MAD. Table 32 (page 46) presents the percentage of children achieving MDD, MMF and MAD.

Between the two districts, Chhatarpur fared better on all aspects (MMF, MDD and MAD) in comparison to Sheopur. The high percentage of tribals and many factors ranging from food insecurity to lack of knowledge could be attributed to the results in Sheopur.

Table 32: Children (6-23 months) achieving MMF, MDD, and MAD

IYCF indicators (N=787)	Total (N=787) (%)	Chhatarpur (n=394) (%)	Sheopur (n=393) (%)
Minimum dietary diversity (MDD)	22.6	27.7	17.6
Breastfed (n=136)	19.6	24.1	14.9
non-breastfed (n=42)	45.2	62.2	33.9
Minimum meal frequency (MMF)	58.9	62.7	55.1
Breastfed (n=391)	56.4	59.7	53.0
non-breastfed (n=72)	77.4	91.9	67.9
Minimum acceptable diet (MAD)	16.2	20.3	12.0
Breastfed (n=125)	18.0	21.8	14.0
non-breastfed (n=2)	2.2	5.4	0

WHO recommends to disaggregate and report IYCF indicators for the age groups of 6-11 months, 12-17 months and 18-23 months since they can vary widely between these age groups (WHO 2007). MDD and MMF were lowest among the youngest children (6-11 months) resulting in low prevalence of MAD (Table 33, page 46). More than half of the children in the 12-17 months' age group (66.8%) achieved MMF but low prevalence of MDD resulted in only 19.6% of them reaching MAD. The oldest children (18-23 months) had the highest MMF as well as MDD prevalence. However, MAD remained very low 24.1%. The disaggregated information about IYCF indicators MDD, MMF and MAD demonstrates that the age of the child is an important factor contributing to the achievement of the indicators. In order to increase the prevalence of MAD, MDD is key for all age groups, especially the youngest. Increased meal frequency can potentially improve MAD for the youngest as well as the middle age group. The overall low consumption of vitamin-rich foods and iron-rich foods and low rate of children achieving MAD show that nutrient adequacy is insufficient among the majority of that target group.

Table 33: IYCF Indicators disaggregated into age groups

IYCF Indicator	Total (N=787) (%)	Chhatarpur (n=394) (%)	Sheopur (n=393) (%)
6-11 months (n=264)			
MDD	7.2	10.2	4.4
MMF	38.3	41.7	35.0
MAD	6.1	7.9	4.4
12-17 months (n=331)			
MDD	24.8	27.7	21.5
MMF	66.8	69.4	63.9
MAD	19.6	22.0	17.1
18-23 months			
MDD (n=192)	40.1	51.1	29.6
MMF (n=191)	73.8	78.7	69.1
MAD (n=191)	24.1	34.0	14.4

4.13. Observations

As recommended in the guidelines for the nutrition baseline survey, the questionnaire should allow the documentation of observations. During the training, enumerators developed a common understanding on how to observe and record observations of the household. Observations were based on the following criteria:

- **Observation of the household surrounding**: General cleanliness of the surrounding (dirt, faeces), condition of the house (walls, roof), storage of dishes
- **Observation of the respondent:** Cleanliness, health status and clothes of mother
- **Observation of the child 6-23 months:** Cleanliness, health status and clothes of child

The observation of the household, respondent and child was ranked on a 5-item scale, ranging from very good, good, ok, bad, to very bad. Observations were made and discussed by enumerator pairs after each interview. Generally, household surroundings, appearance of mothers and children were rated as ok (Figure 10, Figure 11, page 48; Figure 12 page 48).

Figure 10: Observations of household surrounding

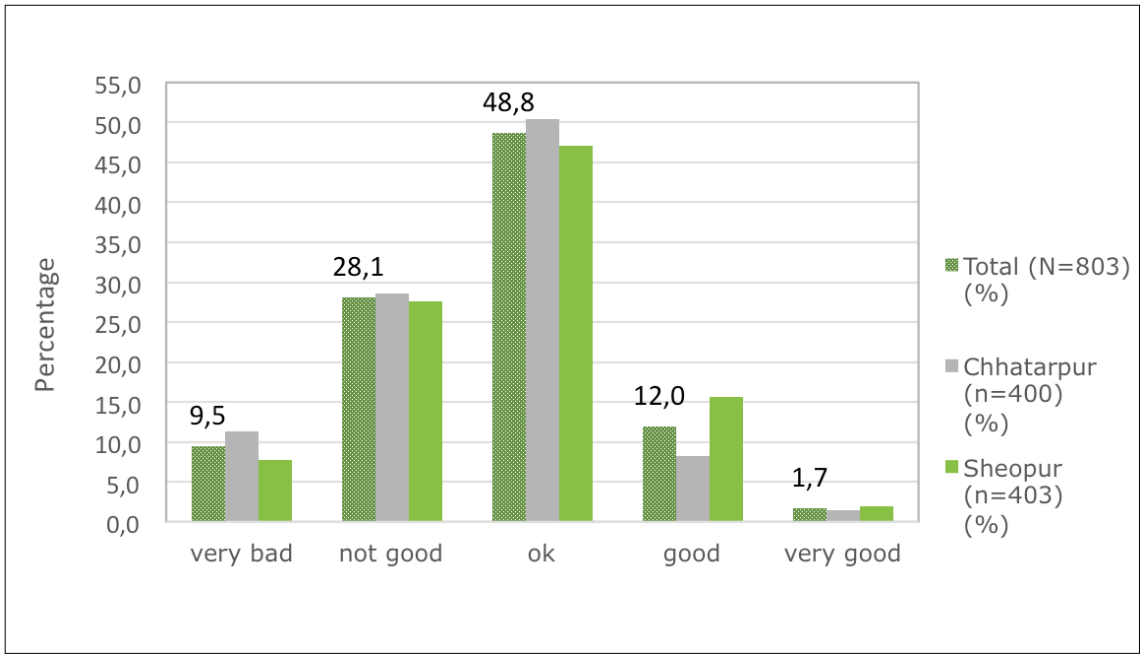


Figure 11: Observations of appearance of the respondent

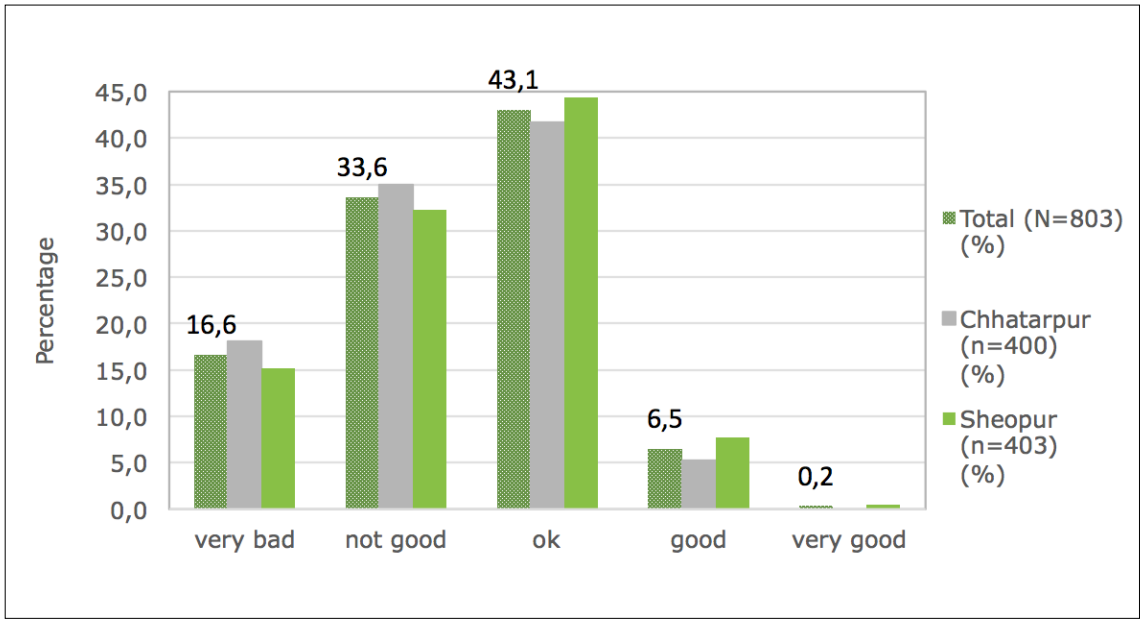
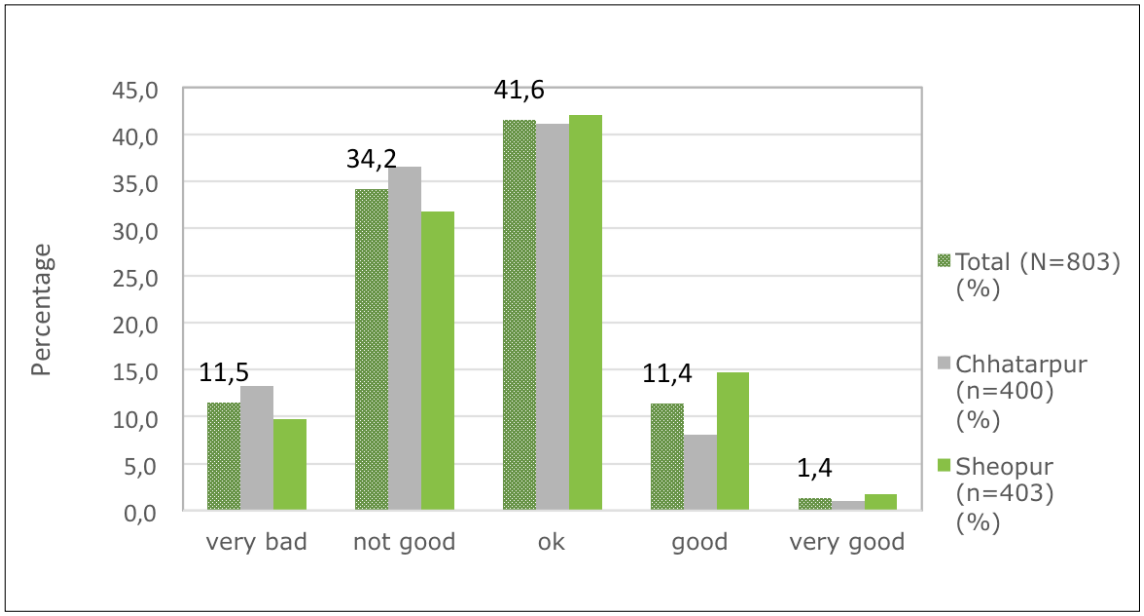


Figure 12: Observations of appearance of child (6-23 months)



5. CONCLUSIONS AND RECOMMENDATIONS

The current nutrition baseline survey, which was conducted in January and February 2016, describes the nutrition and food security situation of households in Chhatarpur and Sheopur districts in Madhya Pradesh, India. Conclusions and related recommendations are presented in accordance to the causal model of malnutrition (UNICEF 1990) (Annex T, page 79) and its underlying as well as immediate causes of malnutrition.

Main conclusions	Main recommendations
Food and Nutrition security situation Half of the households consider themselves as food secure. Of food insecure households, the majority experience mild food insecurity (34.3%). Less than 4% are severely food insecure (HFIES- applied in the post-harvest season, 4 months after harvest). Around 60% of households are TPDS beneficiaries of which the majority belongs to the BPL category. Less than 10% of eligible households faced difficulties in accessing the TPDS shop.	· The project should investigate in the specific causes of the food insecurity situation (wheat/rice/other cereal grain dependence, low income for women, crop diversity, availability of qualitative food in the market, knowledge to buy adequate food etc.) · Identification of excluded/discriminated yet still entitled TPDS beneficiary HHs to increase food security · Additional assessment of HFIES (provisioning with and without TPDS) throughout the project area (subsample) in the pre-harvest season is recommended to measure food security dynamics. Accessibility of TPDS shops and availability of rations might become a challenge towards and in the lean season when more HHs rely on the service.
Concerning the immediate causes of malnutrition: Food intake (food use) The percentage of children 6-23 months of age achieving MDD was low (23% ≥4 food groups) (28% Chhatarpur, 18% Sheopur). On average, children in this age group consumed three to four food groups (mainly "grains, roots and tubers", "dairy products", "pulses and nuts" and "other fruit and vegetables"). Main source for proteins were dairy products consumed by 71% and pulses/lentils, consumed by around 38% of the children. Vitamin-A rich fruit & vegetables were consumed by less than 20%. Other animal source foods (ASF) like flesh foods and eggs are rarely consumed (<3%). Around 59% (63% Chhatarpur, 55% Sheopur) of the children were fed the minimum meal frequency (MMF). A minimum acceptable diet (MAD) was achieved by 16.2% of the children under two years of age (20.3% Chhatarpur, 12.0% Sheopur). However, it is very low and needs to be addressed in order to improve nutrient adequacy and proper development of the children. Chhatarpur fared better as compared to Sheopur on all indicators. Dietary diversity of women was low (19.9% ≥5 food groups). On average, women consumed 3.6 different food groups (mainly "grains, roots and tubers", "dairy products", "other vegetables" and "beans and peas"). The remaining food groups "Dark green leafy vegetable" and "nuts and seeds" were consumed by only 23% and 16%, respectively. Less than 10% of the women consumed "Vitamin A rich fruit & vegetable" and "other fruit". Animal source foods (apart from dairy) were the least consumed foods (<3%). The relatively low dietary diversity of women might be associated with low dietary diversity in children. Main difference in consumed foods between women and children are observed for fruit and vegetables. While most households keep livestock, the consumption of milk especially for children in the form of milk in tea, vitamin A rich fruits and vegetables need to be made more accessible. Even though dark green leafy vegetables may be more accessible due to the surrounding forest area, they are seasonal and not available in the dry/summer season. A comparison of values assessed by the Household Food Insecurity Experience Scale (HFIES) and dietary diversity scores shows that dietary diversity among both target groups was highest amongst food secure households (Table 34,Table 35).	· Improve dietary diversity through nutrition education: teaching women the benefits of diversified and healthy diets empowers them to make healthier choices and can increase dietary diversity in both target groups · Measures to increase the rate of MAD need to consider the age of the children: • Children 6-11 months have the lowest MDD rates; therefore dietary diversification has to be improved in order to increase MAD. • The MAD of children 12-17 months of age can also be improved via MDD. • In children 18-23 months of age, the diversity and feeding frequency needs to be improved in order to better MAD. · Focus should be on "culturally-accepted" food groups. However, it has to be kept in mind that this means limiting the food group range for children from 7 to 5 and for women from 10 to 8 if ASF (flesh foods and eggs) are not considered. • Qualitative interviews could provide an overview to which extent ASF could be promoted in the PLA. Superstitions against feeding eggs to young children or women might be widespread. · Increase consumption of vitamin A-rich fruit and vegetables, and other fruit and vegetables: • Improve diet of children under two and women by providing information regarding the nutritional benefits and value of vitamin A-rich fruit and vegetables (dark green leafy vegetables) and other fruit and vegetables • Barriers of fruit and vegetables consumption should be assessed · Encourage mothers to feed pure milk rather than tea with milk to children by educating them about the nutritional value of dairy · Increasing the consumption of pulses/lentils, especially soybean and groundnuts could be helpful for those families who do not consume ASF due to religious reasons. · Monitoring: Since levels of food insecurity are likely to increase towards and in the lean season, regular assessment of HFIES and dietary diversity (dietary diversity depends on the food security situation and seasonality) of women is recommended (sub-sample of 3 villages randomly selected per block) especially since national data are not available.

Main conclusions	Main recommendations
Health status (food utilization) The severity of shortcomings regarding the WASH sector is reflected in the high prevalence and frequency of diarrhoea in children. 35.7% children under two years of age were suffering from diarrhoea within two weeks prior the survey. This figure is much higher than the national average of 9.5% (NFHS 2015-16). On average, children suffered from at least 4 episodes of diarrhoea. Frequent episodes of diarrhoea can easily lead to malnutrition and therefore have a negative impact on the development of children.	· Identification and elimination of main contamination ways that might influence diarrheal infection (hygiene, water-borne diseases, food safety). Ensure recognizing diarrhoea as a serious health-threat for young children (hygiene counselling, implication of health promoters/ Anganwadi/ASHA workers at village level). Ensure adequate treatment is available as well as asked for by mothers regularly (Monitoring). The care givers should assure that breastfeeding and food intake continues during diarrhoea. · Nutritional and hygiene messages should be harmonised with the local health structures and practiced.
Concerning the underlying causes Availability of food through own agricultural production and trade Land availability was relatively high (71.5%) in the survey area. Crop diversity was low (mean = 4.5) with a high dependence on wheat as the main crop grown (92.7%). Mustard was the second most present crop followed by Bengal gram and Sesame. More households in Sheopur than in Chhatarpur grow mustard. Bengal Gram and Sesame are produced by more households in Chhatarpur. Wheat and Bengal gram are grown for own consumption (see dietary data) and sale. Other staples like rice or maize are not common (<10%). Production of pulses apart from Bengal Gram and Black gram is limited. However, cultivation of soya seems more common in Sheopur than in Chhatarpur where cultivation of groundnuts are the low. Although in both districts, production of pulses apart from groundnuts was common, consumption of pulses amongst women was higher in Sheopur compared to Chhatarpur (60.5% versus 46.5%, respectively). Consumption of Sesame is not common in both districts, neither for women (<20% consumed "nuts and seeds") nor children (4% consumed sesame see Annex Table Q). Consumption was higher in Chhatarpur probably due to higher availability at household level. Home gardens or kitchen gardens are a possibility to grow fruit and vegetables for home consumption as well as for income generation, diversification of the daily diet and probably increasing food security. Ownership of home gardens was low (20%). Production of vegetables among households with kitchen gardens was common (95.7%). Most households used the produce for own consumption. Production of vegetables is depending on the season (48.1% wet season, 9.7% dry season), but some households managed to grow vegetables year around especially in Chhatarpur. Most home gardens (56%) are located on assigned areas on the fields and less are next to the homestead (44%). Almost 67% of the surveyed households were keeping livestock. More households in Chhatarpur (72%) compared to Sheopur (62%) were keeping livestock. Most households are keeping livestock for own consumption (82% mainly for own consumption, 1.5% for sale, 14.5% for sale and own consumption, 2.2% cultivation and transport) which is reflected in high consumption rates of dairy, primarily as milk in tea.	Availability · Increasing food availability at household level by identification and promotion of crops adapted to local conditions (different staples and pulses) to encourage crop diversity for own consumption as well as income generation. The TPDS programme can be encouraged to provide a variety of crops to help improve the diversity. Since most HHs cultivate crops belonging to the food groups "starchy staples" and "pulses" groundnuts would be an option for a crop to be included in TPDS which has the potential to increase women dietary diversity (groundnuts belonging to the food group "nuts and seeds" which is currently only consumed by around 20%). Sesame might be another crop to be included in the TPDS in order to increase dietary diversity of women via this food group. To improve dietary diversity of children in order to increase MAD the lowest consumed yet culturally acceptable food groups are "Vitamin-A rich fruit & vegetables" and "other fruit & vegetables". Both food groups are difficult to be included in the TPDS. · Measures to increase dietary diversity need to consider reaching out to main decision makers (Who is making decisions of what to grow on the arable land?). Especially, if farm land is used for establishing a home garden. Information on benefits of diverse diets should be provided to all household members in order to avoid conflicts between income generation and own consumption (especially for pulses). Consider to promote groundnuts and soya and educate on appropriate storage and use. · Increasing food availability at household level by encouraging households to establish a home garden. Barriers that prevent households from establishing home gardens and growing vegetables need to be assessed. Distribution of seed starter-kits or rising awareness of government home garden-schemes, with a focus on indigenous vegetables, and water management techniques could encourage more households to establish a home garden. Availability of vegetables year-around could be increased by teaching food processing and preservation techniques. · Identifying and strengthening local women's groups or through Anganwadis, around kitchen gardens could be an entry point for introducing nutrition aspects in agriculture. · Increasing food availability at household level by encouraging households to keep small scale livestock (e.g. poultry, goats). Empower families to make informed decisions about available livestock produce by providing information about the nutritional benefits of ASF especially for children and women. Sustainability of ASF availability could be increased by keeping chicken for eggs rather than meat.
Access to food (income, Infrastructure and access to markets) Main sources of income throughout the last year were sale of crops (55.8%), temporary salary (46.7%), and petty trade (13.4%). 11.5% of the surveyed households had a regular salary. On average, households depended on 2 different income sources. The percentage of households generating income by selling agricultural produce was higher in Chhatarpur compared to Sheopur. The better market access due to the close proximity of Chhatarpur as well as better roadway connectivity and market infrastructure might explain higher rates of income generation by sale of produce. Over half of the households (58%) were participating in the TPDS scheme. However, majority of the households (89.3%) participated in the Anganwadi /ICDS programme and 38.4% benefitted from school feeding (mid-day meal). Fruit were accessible to 26.9% of the households and the majority of households used fruit for their own consumption (94.4%). However, less than 15% of the surveyed women consumed fruit. Food distribution within the household The consumption of animal source food was very poor. The consumption of beans and peas/pulses was higher in women than in children (53.5% women, 38% children) This might indicate intra household barriers to beans and peas/pulses for young children.	Access · Improve the access to more income (market access, buy-back from the government for TPDS scheme) to buy more and diverse food. Improve access to TPDS in the region if food insecurity increases. Avoid a conflict between generating income by selling versus consumption for nutritional benefits especially for pulses and animal source foods through increased production of these foods. Elaborate a strategy with local agricultural extension staff and Anganwadi workers. · Increase access to TPDS scheme for landless and food-insecure HHs · Fruit availability and consumption should be encouraged, it would be worth to find out from the households the main reasons of non-availability and once the availability has improved if conservation such as drying mangos for cash income might be a more efficient solution than promoting consumption. With the additional cash income, high quality food could also be purchased (requires nutrition education to make informed choices). · Nevertheless, high quality food items should be also promoted for usage in meals by transferring the benefits and additional nutritional value to specific household members (especially the nutritional value of indigenous leafy vegetables and dark green leafy vegetables, flesh foods for children). · Local fares to demonstrate the best nutritious and economic food preparation organized by Anganwadi or ASHA workers or women's group at village level could have a positive effect on consumption of qualitative food items. · Best results to promote the consumption of specific food items are observed when existing traditional meals and compositions of food are enriched with new items. During the community communication on nutrition, enriched meals could be given a specific name as local marketing.

Main conclusions	Main recommendations
Care behaviour Half the respondents had completed some level of schooling, which is in line with the national data (NFHS 2015-16). 48.8% of the women had no formal education. Formal education as well as informal education, such as nutrition and hygiene counselling are key elements on the pathway of malnutrition. Dietary diversity is usually lower and malnutrition rates are higher if women are less educated. Thus, education on nutrition and hygiene needs to be strengthened in the communities. Even though nutrition counselling is available at the village level through the Anganwadi centre, close to half the women (41.6%) were unaware that nutrition counselling could be availed from these centres. Around 63.7% of the respondents never received hygiene counselling. Main care taker of children <2 are mothers. Around 33.3% of respondents were supported in child care by their mothers/ mother in law, older children (4%), and fathers (1.0%). Grandmothers can have a big influence on decisions related to child feeding and general care (Aubel 2012). Breastfeeding is culturally accepted and practiced comprehensively in India. The assessed breastfeeding rates were high (88.3%) for children up to 17 months of age. Older children (18-23 months) have a fair breastfeeding rate (74.3% only). Continued breastfeeding after the child reaches six months of age is recommended in addition to complementary feeding. The low percentage of breastfed children in this age group is limiting the rate of children achieving MAD as well. Knowledge of appropriate complementary feeding in terms of dietary quality and consistency is a challenge. Half of the mothers (50.1%) considered watery and nutrient-low porridge as adequate for young children 6-12 months of age. Knowledge about enriching porridge was generally limited. On average, women knew 2 ways to enrich porridge and around 9% did not know any way. Amongst different foods that were stated to enrich porridge, oils/fats and animal source food, essentially milk were known by a majority of mothers. This demonstrates that knowledge and behaviour regarding addition of oil/fat to porridge/ food and consumption of milk is present, yet not always practiced. Alarming was the lack of knowledge regarding orange (vitamin A) rich fruits and vegetables and green leafy vegetables and pulses. Very few of mothers mentioned this food groups as ways to enrich porridge. The low knowledge of nutritional benefits of green leafy vegetables is reflected in the relatively low consumption of this food group among children (30%) despite the availability at household level. Even though 42.4% of the respondents said that pulses were a way of enriching porridge and though the food group is available at the household level, the lack of knowledge hinders women from adding it to and enriching porridge. Especially during episodes of illness, appropriate child feeding is essential for convalescence and prevention of malnutrition. Nevertheless, feeding behaviour during episodes of illness was inappropriate with many respondents offering less fluids (>75%) and foods (>70%) to their children. As the demand for nutrients often increase during illness, this discrepancy between feeding practice and increased demand need be addressed. Knowledge about causes, signs and prevention of malnutrition was very limited. The most common reason for malnutrition mentioned was lacking food in terms of quantity. Only around 40.8% knew that insufficient amounts of food during episodes of illness can cause malnutrition (which explains the high prevalence of inappropriate feeding practice during illness). Only 22.1% of the respondents mentioned that malnutrition can be caused by watery nutrient-lacking food (which explains the preference of watery porridge). Most mothers were aware that weakness and lacking energy as well as weight loss are sings of malnutrition in young children. Growth faltering which is common in this age group in India and related to low dietary diversity was only recognized as a sign of malnutrition by 13% of the respondents. Only 34.3% of mothers knew that malnutrition can be prevented by sufficient amounts of food. Diversifying the diet of their children to prevent malnutrition was mentioned by around 29.3% of the mothers. 43% and 67.1% knew that giving attention during meals and attending the growth monitoring service were ways to prevent malnutrition. Knowledge about prevention of (food) contamination with germs was low. Most mothers knew that food should be covered to protect it from flies. Hand-washing, removing faeces from home and surrounding and washing fruits and vegetables as ways to prevent contamination were not known by many women. Consumption of increased amounts of food during pregnancy and lactation was known only by 50%. Almost half the women knew that eating diverse foods and frequent consumption was important. From among the surveyed households 13.3% thought that eating less food during pregnancy was important since it would help ensure that the baby had enough space to move and grow.	· School drop-outs from adolescent girls should be avoided and completing primary education as well as higher education should be encouraged, since education is still the most influencing factor for nutritional behaviour. Even though 51% of the respondents had gone to school and had some level of schooling, there should be focus on providing nutrition education and healthy eating behaviour as part of the school curriculum. · Education on nutrition and hygiene needs to be strengthened in the communities: • nutritional and health value of diverse diets needs to be communicated • grandmothers, older female household member as well as fathers need to be included in the counselling in order to reach children under two as well as to avoid conflicts at household level · Invite women (and their husbands) and grandmothers to cooking demonstrations to explain · the appropriate selection of ingredients for porridge & appropriate consistency · maximizing dietary diversity with local resources · nutritional value and benefit of available foods (e.g. green leafy vegetables, pulses, groundnuts) · Continued breastfeeding of children up to two years of age should be promoted to assure optimal nutrition and achieving of MAD. · Qualitative interviews may be a useful tool to get insights into the gap between knowledge and practice. Constraints of continued breastfeeding until the age of two years might be explored in discussions with mothers and supporters in care-giving (grandmothers). · For monitoring purposes, it is recommended to apply the following tools for assessment: Monitoring at individual level - KAP survey with subsample (2 villages randomly selected per Block; preferable one near the town/district and one in the interior) of actual program participants to measure direct programme impact. Knowledge levels and behaviour of direct beneficiaries of the project should be assessed before they enrol in the programme and after they have attended the programme (sub-sample pre- and post-knowledge test) - Key-informant interviews to assess barriers of behavior change (subsample) - Attendance of program should carefully be recorded for each participant including information of location (village, Block) and sessions attended (information can be linked with knowledge test) Monitoring at institutional level Knowledge levels of direct beneficiaries of the project should be assessed before they enrol in the program and after they have attended the program (sub-sample pre- and post-knowledge test) · Monitoring training of multipliers: • assess knowledge of trainers before and after training • establish feed-back and support structure for trainers during implementation • encourage regular refresher trainings for trainers • include Anganwadi and ASHA workers

Main conclusions	Main recommendations
Health services and WASH (water, sanitation, hygiene) Throughout the survey region, access to improved sanitation facilities was very low (<10%). Access to improved drinking water was high year-round; however most households (51.9%) stored their drinking water under unhygienic conditions increasing the risk of contamination. Most households had soap (90.8%) but hand-washing with soap was not common. Hand-washing practice was poor. Respondents (9.6%) washed hands in a bowl they shared with other people without using soap or ash. Even though respondents indicated the use of soap/ash for washing hands, the actual practice was questionable. The low usage of soap/ash for hand-washing and low knowledge of the contamination with germs through faeces puts the population at high risk of contracting food- and water-borne diseases (see high prevalence of diarrhoea). Most children attended basic health service irregularly. A very small percentage of women (10.9%) attended antenatal care ≥4 times during their last pregnancy	· It is highly recommended to increase the access to improved sanitation facilities, for example, building latrines or composting toilets. · At community level, reaching pregnant women via health services either through better programmes at the Anganwadi centre or better interaction and facilitation through ASHA workers seems feasible · Identification of barriers that prevent mothers and pregnant women to attend basic health service regularly

Table 34: Mean food group score at different levels of food insecurity (HFIES)

	Household Food Insecurity Experience Scale			
Food Group Score Mean (SD)	Food secure	Mild food insecure	Moderate food insecure	Severe food insecure
Women	3.7 (±1.2)	3.5 (±1.1)	3.3 (±1.2)	3.0 (±1.3)
Children 6-23 months	2.4 (±1.5)	2.4 (±1.4)	1.9 (±1.4)	2.3 (±1.2)

Table 35: Mean Food Group Score: TPDS versus non-TPDS Beneficiaries

	TPDS	
Food Group Score Mean (SD)	beneficiaries	non-beneficiaries
Women	3.5 (±1.2)	3.6 (±1.2)
Children 6-23 months	2.3 (±1.3)	2.4 (±1.5)

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ANNEXES

A: List of selected villages

Villages selected in Chhatarpur and Sheopur respectively

District	Block	Village
Chhatarpur	Gaurihar	Chitahari
		Naduata
	Laundi (Lovekush Nagar)	Ganpatkheda
		Sadkar
	Rajnagar	Bamitha
		Pira
	Nowgong	Tatam
		Joran
	Chhatarpur	Dhamchi
		Palotha
	Bijawar	Patra
		Dilari
	Bada Malhera	Bhelda
		Rajapur
	Buxwaha	Hatna

District	Block	Village
Sheopur	Sheopur	Ichchapura
		Pandola
		Kashipura
		Dhiroli
		Seeswali
		Abdah
	Karahal	Gothra
		Kheree
		Bandhali
		Rampura Dang
	Vijaypur	Bara Kalan
		Chentikheda
		Pancho
		Hullpur
		Garhi
		Umari Kalan

B: Training Agenda of NBS Enumerator Training

SEWOH Enumerator Training, Hotel Siddharth, Madhya Pradesh, India
Nutrition Baseline Survey
20.01.2016 – 24.01.2016

Wednesday 20.01.2016	Topic	Tools	Responsible
09:00 – 09:30	Opening remarks and overview of SEWOH Introduction of survey team and enumerators Icebreaker	enumerator bag name tags/markers blank paper flipchart, pens	JK, AP
09:30 – 09:45	Overview of Training Activities/Workshop Agenda	handouts	AP
09:45 – 10:15	Training objectives, expectations and ground rules for workshop	flipchart paper/pencils PPT	JK, AP
10:15 – 10:45	Explanation of the survey process and roles/responsibilities of team members (team leader, supervisors and data collectors) Focus on role and contribution of the supervisors and enumerators	Projector, PPT presentation/ flipchart paper/ pencils	AP
10:45 – 11:00	Coffee/Tea break		
11:00 – 12:30	Review & translation of questionnaire Questions and answers to the questionnaire	Questionnaires, Projector	AP, JK
12:30 - 13:30	Lunch break		
13:30 – 15:00	Review & translation of questionnaire Questions and answers to the questionnaire	Questionnaires, Projector	AP, JK
15:00 – 15:15	Coffee/Tea break		
15:15 - 16:45	Review & translation of questionnaire Questions and answers to the questionnaire	Questionnaires, Projector	AP, JK
16:45 – 17:00	Wrap up of day, feedback	Flipchart paper markers	JK
Thursday 21.01.2016	**Topic**	**Tools**	**Responsible**
08:30 – 08:45	Briefing of day's agenda, group warm up,	Questionnaires, Projector	JK
08:45 – 10:45	Review & translation of questionnaire Questions and answers to the questionnaire	Questionnaires, Projector	JK
10:45 – 11:00	Coffee/Tea break		
11:00 – 12:30	Review of questionnaire field guide	Field guide, Projector	JK
12:30 - 13:30	Lunch break		
13:30 – 14:30	Main duties of an enumerator, how to approach people, how to obtain consent, how to conduct an interview Completing a questionnaire: what is important	Projector, Flipchart paper, markers	AP
14:30 – 15:00	Practice questionnaire in pairs (excluding 24h-recalls)	Questionnaire	AP
15:00 – 15:15	Coffee/Tea break		

15:15 – 16:45	Child Dietary diversity and Women Dietary diversity – introduction to relevant food groups, identification of common local foods from each group	Flipchart paper markers	JK
16:45 - 17:00	Wrap up of day – what did we learn? Feedback	Flipchart paper markers	AP
Friday 22.01.2016	**Topic**	**Tools**	**Responsible**
08:30 – 08:45	Briefing of day's agenda, group warm up, clarifying questions		AP
08:45 – 10:45	How to conduct 24h dietary recall: What is important? Presentation of some examples Women dietary diversity and Child Dietary diversity practice in small groups	24h-recall sheets, PPT	JK, AP
10:45 – 11:00	Coffee/Tea break		
11:00 – 11:30	Introduction to tablets	Tablets	AP
11:30 – 12:30	Practice of questionnaire in small groups using the tablets	Questionnaire, Tablets	AP
12:30 – 13:30	Lunch break		
13:30 – 15:30	Group discussion: Clarifying questions on questionnaire and other questions Finalizing the questionnaire guide for the field	projector, Questionnaire	AP
15:30 – 15:45	Coffee/Tea break		
15:45 – 16:45	Practice questionnaire in small groups using the tablets	Questionnaires, pens, Tablets	JK, AP
16:45 – 17:00	Wrap up, Feedback	Flipchart paper Marker	AP
Saturday 23.01.2016	**Topic**	**Tools**	**Responsible**
07:30 – 15:00	Pre-Test in Chhatarpur district	Questionnaires, Tablets	JK, AP
Sunday 24.01.2016	**Topic**	**Tools**	**Responsible**
10:30 – 12:30	Lessons Learned Discussion of experience during the pre-test, follow-up on challenges.		JK, AP
12:30 – 13:30	Lunch break		
13:30 – 15:30	Presentation of adjusted questionnaire, if necessary adjustment of questionnaire guide		AP
15:30 – 15:45	Coffee/Tea break		
15:45 – 16:30	Overview of logistics for data collection period		JK, AP

C: Nutrition Baseline Survey Interview Guide - India

The role of an enumerator:
You are responsible for interviewing mothers/caregivers in the villages selected for the NBS. You have to collect and record data as accurately as possible. You should always follow the NBS Enumerator Guideline and NBS Questionnaire Guide. All problems have to be reported to the supervisor or team leader.

Why an enumerator pair?
All interviews for the NBS will be conducted by an enumerator pair. Interviewer 1 will interview the mothers/caregiver while Interviewer 2 will record the answers with the tablet/questionnaire.

How to handle the tablet?
Every day during the period of data collection, a tablet will be handed out to Interviewer 2. At the end of each day, the tablet has to be given back to the team leader. Interviewer 2 will always get the same tablet and it is her/his duty to handle the tablet responsibly and carefully. The tablet should only be switched on shortly before the interview and has to be put on plane mode after the interview. Please turn off the sound of the tablet. The tablet is only to be used to collect data. It is strictly forbidden to use it for any private purposes, to connect it to other electronic devices or to connect it to the internet.

How to prepare for the interview?
Carefully review the questionnaire and be absolutely clear about what you are going to ask during the interview. Make sure you know the reason behind every question. If you are unsure, check the Questionnaire Guide or consult with your supervisor.

Think about what sort of answers you might expect to the questions you will be asking.

Prepare your survey bag with the following supplies:

- 2 pens (blue colour)
- Clipboard
- Consent form
- Shorthand notebook
- NBS Enumerator Guideline and NBS Questionnaire Guide
- Tablet
- Your mobile phone

How to approach the household?
Always begin the interview by introducing yourself, your partner and the NBS to the family: who are you, your names, from where, which project do you work for? Use the first minutes with the family to build rapport. It is important that the family feels comfortable with you and trusts you.

Please clarify:
Whether this family has a mother/female caretaker (15-49 years of age) with a child aged 6 to 23 months.

- Inform the family about the duration: ½ - 1-hour interview
- Inform the family that no direct benefits will be given
- Tell the respondent that she has the right of anonymity and that her responses are treated confidentially. Ask politely for cooperation. Use the “Consent Form” as a guideline for this conversation.

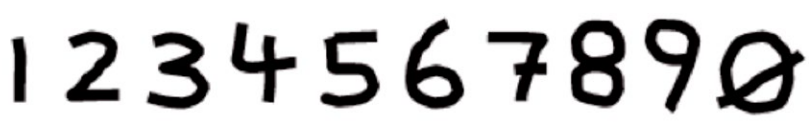
How to conduct the interview:
Maintain the confidentiality and privacy of the mother/participant. Try to find somewhere where the mother/caregiver and child can sit comfortably. If there are onlookers around, politely ask them to leave.
Be neutral throughout the interview: never laugh about, compliment or correct an answer. Do not imply that some answers are better than others. Never lead a respondent to a specific answer or assume or anticipate a response.
Speak loudly, clearly and in a respectful manner. Be patient and let the respondent finish.
Do not change the wording or sequence of questions. Ask each question exactly as they are written since even slight variations in wording may affect responses. Don’t use English words in the questions, except when necessary such as program/NGO names.
If the respondent remains silent after a particularly question is asked, repeat the question exactly as it is written. Always handle hesitant respondents tactfully. If the respondent is refusing to give an answer to a specific question continue with the next question.

How to use the tablet:
Carefully type the name and identity number of Interviewer 1 and your name and identity number (Interviewer 2) at the beginning of the interview. Once you have confirmed the presence of a mother and a child in the right age group in the household, fill in the required information about the location. Communicate to Interviewer 1 as soon as you are ready. The tablet will guide you from question to question following the questions that Interviewer 1 is asking the mother. Carefully listen to the answers and tick them accordingly.

How to fill in the questionnaire:
If the tablet is not working and you are too far away from your supervisor (back-up tablet) you have to record the responses using the printed questionnaire.

The questionnaire will be filled in line by line by Interviewer 2 while Interviewer 1 conducts the interview. None of the lines is optional!

Write clearly and not too small, use a blue pen. Remember that all numbers should be recorded using the following system:



If you made a mistake, correct it clearly!

The questions in the columns have a logical connection with each other. Pay attention while filling them in. Follow the “Skip”.

D: Quality Control Protocol for Interviewer

Interviewer 1: _____ **Date:** _____
Interviewer 2: _____ **Supervisor:** _____

DID INTERVIEWER 1. . .	YES	NO
Introduce himself/herself and interviewer 2 correctly?		
Informed the respondent about purpose, duration etc. at the beginning of the interview and get permission without coercion?		
Put the cell phone on silent and did not interrupt the interview to take calls?		
Speak clearly during the interview?		
Have neutral facial expressions/body language (did not react positively or negatively to the respondent's answers)?		
Does not start giving instructions to apparently wrong answers or behaviour?		
Refrain from asking leading questions that might have influenced the respondent's answers?		
Read the questions exactly as agreed upon during the training?		
Repeat the questions exactly as worded when the respondent gave a response that was not very clear? Use probes when the response still was not very clear?		
Write legibly on the questionnaire (24h-recalls!!!)?		
Follow the skip patterns correctly?		
Read responses aloud when he/she was supposed to?		
Prompt the mother for all answers (say "Anything else?") for questions that allow multiple responses especially the 24h-recalls?		
Thank the respondent for the time spent and involvement in the survey?		
Discuss with interviewer 2 the household observations		
DID INTERVIEWER 2…	**YES**	**NO**
Put the cell phone on silent and did not interrupt the interview to take calls?		
Communicate that he/she is ready to record the answers at the beginning of the interview		
Thank the respondent for the time spent and involvement in the survey?		
Copy the information from both 24h recalls after the interview		
Discuss with interviewer 1 the household observations		
On a scale of 1 (needs more training) to 10 (excellent), I rate the interviewer's performance during this interview as follows (circle one): 1 2 3 4 5 6 7 8 9 10		

Other Comments/Plan of Action for Making Improvements:

E: Distribution of Household size

	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Mean	7.0	7.4	6.6
SD	3.3	3.6	2.9
Md	6.0	7.0	6.0
Min	1	1	2
Max	40	40	25

F: Distribution of Income Source between males and females

Source of income	Total (N=803) (%)			Chhatarpur (n=400) (%)			Sheopur (n=403) (%)		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Sale of crops	29.5	2.9	23.4	36.8	2	24.3	22.3	3.7	22.6
Sale of own produced or gathered goods/crafts	1	1.1	0.5	1	0.5	0.5	1	1.7	0.5
Casual labour/ temporary Salary	25.5	3.9	17.3	26	4.8	13	25.1	3	21.6
Petty trade/small business	10.1	1.9	1.5	15	2.5	2.3	1.2	5.2	0.7
Employment/regular salary	7.8	0.9	2.7	4.3	0.8	0.3	11.4	1	5.2
Remittance from relatives/ husband	1.5	0.5	0.2	2.5	0.5	0.5	0.5	0.5	0
Income generated by public transfer	1.5	0.5	0.2	2	1	0.5	0.0	0.0	0.0
Begging/rag picking	0.0	0.2	0.0	0.0	0.5	0.0	0.0	0.0	0.0
Receiving rent	0.1	0.4	0.0	0.3	0.8	0.0	0.0	0.0	0.0
None (subsistence farming only)	1.4	0.7	5.7	1.5	0.8	1.8	1.2	0.7	9.7

G: Knowledge Score on complementary feeding

	Total	Chhatarpur	Sheopur
Mentioned types of food making porridge more nutritious			
Mean	2.1	2.2	2.0
SD	1.1	1.1	1.1
Md	2.0	2.0	2.0
Min	0	0	0
Max	5	5	5
Mentioned signs of undernutrition			
Mean	1.9	1.9	1.9
SD	0.9	0.9	0.8
Md	2.0	2.0	2.0
Min	0	0	0
Max	4	4	4
Reasons for malnutrition			
Mean	0.9	1.1	0.7
SD	1.0	0.9	0.8
Md	1.0	1.0	0.0
Min	0	0	0
Max	3	3	3
Prevention of malnutrition			
Mean	2.0	2.0	2.0
SD	1.3	1.4	1.2
Md	2.0	2.0	2.0
Min	0	0	0
Max	5	5	5
Mentioned ways to avoid food poisoning			
Mean	2.4	2.5	2.3
SD	1.0	0.9	1.0
Md	2.0	3.0	2.0
Min	0	1	0
max	4	4	4
Knowledge regarding eating behavior on during pregnancy and lactation			
Mean	2.2	2.3	2.1
SD	1.2	1.1	1.2
Md	2.0	2.0	2.0
Min	0	0	0
max	5	5	5

H: Individual Dietary Diversity Score – Women (IDDS-W)

N=803	Total	Chhatarpur	Sheopur
Mean	3.6	3.8	3.4
SD	1.2	1.3	1.1
Md	3.0	4.0	3.0
Min	0	0	1
Max	8	8	8

I: Food Group Score - Women

N=803	Total (%)	Chhatarpur (%)	Sheopur (%)
0	0.2	0.5	0.0
1	2.9	2.0	3.7
2	12.8	9.5	16.1
3	35.1	33.5	36.7
4	29.0	27.8	30.3
5	13.8	17.5	10.2
6	5.1	7.5	2.7
7	0.7	1.5	0.0
8	0.2	0.3	0.2
9	0.0	0.0	0.0
10	0.0	0.0	0.0

J: Minimum Dietary Diversity – Women (MDD-W)

N=803	Total (%)	Chhatarpur (%)	Sheopur (%)
MDD	19.9	26.8%	13.2%

K: Feeding Frequency – children 6-23 months

N=803	Total (%)	Chhatarpur (%)	Sheopur (%)
Mean	0.6	0.6	0.5
SD	0.5	0.5	0.5
Md	1.0	1.0	1.0
Min	0	0	0
Max	1	1	1

L: Individual Dietary Diversity Score – for all children

N=803	Total	Chhatarpur	Sheopur
Mean	2.35	2.7	2.1
SD	1.4	1.4	1.3
Md	2.0	3.0	2.0
Min	0	0	0
Max	7	7	6

*≥4 of 7 food groups is the minimum dietary diversity (MDD)

M: Individual Dietary Diversity Score – breastfed children

N=708	Total	Chhatarpur	Sheopur
Mean	2.3	2.5	2.0
SD	1.4	1.4	1.4
Md	2.0	3.0	2.0
Min	0	0	0
Max	7	7	6

*≥4 of 7 food groups is the minimum dietary diversity (MDD)

N: Individual Dietary Diversity Score – non-breastfed children

N=94	Total	Chhatarpur	Sheopur
Mean	3.1	3.5	2.8
SD	1.2	1.2	1.1
Md	3.0	4.0	3.0
Min	0	0	0
Max	5	5	4

*≥4 of 7 food groups is the minimum dietary diversity (MDD)

O: Food Group Score - Children

N=803	Total (%)	Chhatarpur (%)	Sheopur (%)
0	12.7	12.3	13.2
1	14.3	11.0	17.6
2	26.5	20.3	32.8
3	24.2	29.3	19.1
4	16.8	20.3	13.4
5	5.1	6.5	3.7
6	0.2	0.3	0.2
7	0.1	0.3	0.0

P: Food consumed by women

The following table presents foods consumed by women in total, and disaggregated into districts.

Food group and item	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Grains			
Bread	4.0	4.75	4.7
Wheat Roti	86.1	86.25	87.3
Rice	20.4	34.25	7.9
Fingermillet Roti	6.2	0	12.4
Rusk	16.2	8.5	18.1
Semolina	1.2	2	0.5
Wheatporridge	4.6	4.25	5.2
Maize	0.2	0.25	0.2
Sorghum Roti	0.1	0	0.2
Watercress flour	6.2	12.5	0.0
Wheat	3.2	4.5	2.0
Rice pops	0.2	0	0.5
Maize pops	0.1	0	0.2
Puffed rice	0.2	0.25	0.2
Roots and tubers			
Colocassia	0.4	0.8	0.0
Irish Potato	71.1	71.3	71.0
Coco yam	0.1	0.3	0.0
Sago	0.6	1.3	0.0
White Sweet Potato	9.8	19.3	0.5
Legumes			
Bengal gram	4.2	3.3	5.2
Bengal gram flour	8.0	5.8	10.2
Fresh Peas	21.0	11.3	30.8
Mung bean	13.9	13.5	14.4
Soyabean pops	0.2	0.0	0.5
Black gram	7.6	12.0	3.2
Red lentil	6.2	0.3	11.9
Chick peas	0.9	1.8	0.0
Split red gram	2.9	4.8	1.2
Soyabean	0.1	0.3	0.0
Vitamin A-rich vegetables			
Carrot	6.2	5.0	7.4
Pumpkin	0.1	0.3	0.0
Sweet Potato	0.5	1.0	0.0
Vitamin A- rich fruits			
Papaya	1.4	1.3	1.5
Other vegetables			

Aubergine	14.9	16.3	13.4
Cabbage	3.9	4.0	3.7
Cauliflower	12.5	13.3	11.7
French beans	3.1	2.3	4.0
Green peppers	0.5	0.5	0.5
Horse radish	5.2	8.0	2.7
Onion	7.1	7.0	7.4
Tomato	48.6	67.0	28.5
Wood apple	0.1	0.3	0.0
White Pumpkin	0.2	0.0	0.5
Bottle gourd	0.4	0.5	0.2
Indian Plum	0.2	0.0	0.5
Moringa olefeira	0.1	0.3	0.0
Okra	0.1	0.3	0.0
Other fruits			
Apple	1.2	1.5	1.0
Banana	1.0	1.3	0.7
Pomegranate	1.0	1.3	0.7
Grapes	1.0	0.5	1.5
Guava	1.1	2.0	0.2
Indian Plum	4.9	8.0	1.7
Indian Gooseberry	0.6	1.3	0.0
Raw Mango	0.5	1.0	0.0
Orange	0.5	0.3	0.7
Sapota	0.1	0.0	0.2

Q: Food consumed by children

The following table presents foods consumed by children in total, and disaggregated into districts.

Food group and item	Total (N=803) (%)	Chhatarpur (n=400) (%)	Sheopur (n=403) (%)
Grains			
Wheat Roti	63.8	64.5	63.5
Rice	22.8	36.5	9.2
Bread	5.5	6.5	4.2
Rusk	20.2	12.5	27.5
Finger millet roti	3.1	0	6.2
Pearl millet	0.1	0.3	0.0
Maize pops	11.0	7.0	12.7
Rice pops	8.8	2.8	14.4
Puffed rice	0.5	1.0	1
Wheat Porridge(daliya)	4.6	6.3	2.7
Wheat	1.5	2.3	0.2
Maize	1.5	3.3	0.0
Watercress flour	2.9	5.8	0.0

Semolina	1.0	2.3	0.0
Sorghum Roti	0.1	0.3	0.0
Noodles	0.1	0.3	0.0
Roots and tubers			
Colocassia	0.2	0.5	0.0
Irish Potato	30.5	35.5	25.6
Sago	0.5	1.0	0.0
White Sweet Potato	6.8	13.8	0.0
Legumes and nuts			
Split Red Gram	3.0	5.5	0.5
Bengal Gram Flour	9.5	11.3	7.7
Fresh Peas	8.7	6.8	10.7
Mung Bean	9.0	11.0	6.9
Bengal Gram	3.5	4.8	2.0
Black Gram	1.0	5.3	0.5
Groundnuts	2.1	2.5	1.7
Red Lentils	3.4	0.5	6.2
Mixed Nuts	1.1	1.8	0.5
Sesame	4.2	8.0	0.5
Soyabean (pops)	3.9	3.5	4.2
Chick Peas	1.0	2.0	0.0
Dates	0.1	0.0	0.2
Vitamin A rich fruits & vegetables			
Carrots	4.0	3.0	5.0
Papaya	1.7	2.0	1.5
Other fruits and vegetables			
Onion	1.7	2.0	1.5
Tomato	20.9	31.8	10.2
Aubergine	3.4	4.3	2.5
Cabbage	1.6	1.0	2.2
Bottle Gourd	0.4	0.5	0.2
Horse Radish	0.7	0.8	0.7
French Beans	1.1	1.3	1.0
Cauliflower	4.0	6.8	1.2
White Pumpkin	0.1	0.0	0.2
Broad beans	0.1	0.3	0.0
Indian Plum	4.4	7.8	1.0
Apple	1.6	2.0	1.2
Banana	2.1	1.8	2.5
Pomegranate	0.6	0.8	0.5
Guava	0.5	0.3	0.7
Orange	0.6	0.3	1.0
Indian Gooseberry	0.1	0.3	0.0
Grapes	0.7	0.3	1.2

R: Indigenous foods gathered in different seasons

Indigenous Vegetable	Wet / Monsoon Season	Dry / Summer Season
Bathua	☐	☐
Leswa Rajan	☐	
Batadi	☐	
Fang	☐	☐
Chanderi Fang	☐	
Kakora	☐	
Murela	☐	
Sem	☐	
Chakriya	☐	
Chane ki bhaji	☐	☐
Chandoli	☐	
Cholai /Chorai	☐	☐
Shakoli	☐	
Chech	☐	
Barsaga	☐	
Kankua	☐	
Noniya	☐	☐
Chirangali	☐	☐
Fareta	☐	☐
Churi ke patte	☐	☐
Dhokadi	☐	
Machakar	☐	
Kachariya	☐	
Saretha	☐	
Katilo	☐	
Lesu	☐	
Chewadi	☐	
Pan charetha	☐	☐
Phang	☐	
Bichotiya	☐	☐
Tarohi	☐	
Akri banbatri		☐
Batari		☐
Palak (spinach)		☐
Ber (Indian Plum)		☐
Kateh		☐
Gilki		☐
Tendu		☐

S: Questionnaire

Date: _____
Name of Mother/ Caregiver: _____
Name of Child: _____
ID Interviewer 1 |_|_|, ID Interviewer 2 |_|_|,

1	Do you have a written record of your child's date of birth (such as vaccination card or birth certificate)? *Ask the mother to show you the written record and record the birthdate from it.*	BIRTHDAT	Day Month Year
1a	What is your age in years?	AGEMO	

If the child's age was born before September/2013 or after March/2015, thank the mother for her time and end interview.

If the mother is not available, try to make an appointment later that day.

Socio-economic Information

2	What is your marital status?	1= married monogamous 2= widowed 3= divorced or separated 4= single	MARSTAT	
3	Who is the household head?	1= male 2= female	HEADHH	
4	To which religion do you belong to?	1= Hindu 2= Islam 3= Christian 4= Sikh 5= Jain 6= Buddhist 99 = Other (Specify)	REL	
4a	Which tribe do you belong to?	1= Saharia 2= Gond 3 = Bharia 4= Bhil 5= Santia 6=Korku 7= Kol 99 = other (Specify)	ETHNICIT	
4b	Which social caste do you belong to?	1= SC 2= ST 3= OBC 4= General 99= Others	CASTE	
5	The main reason for settlement in this region is	1= born in the area 2= moved here by marriage 3= wanted better livelihood (fertile land/ business opportunity) 4= got land assigned in the area	SETTLE	
5a	Do you live here throughout the year?	0= no 1= yes → ***Q6***	LIVEYR	
5b	How many months do you live in this village?	Record number of months	MNTHSYR	
6	How many people live **permanently** in your household?	Record total number	HHMEMNO	
7	What is the highest level of school you attended: primary, secondary, or higher?	0= no schooling → ***Q8*** 1= primary 2= secondary 3= more than secondary	EDUCLEV	

7a	What is the highest class you completed at that level?	*Record number of years at level of schooling*	EDUCYEAR	⌊⌊⌋⌋
8	What are the sources of income of your household throughout the year? Check all that applies!		**0= no, 1= yes, 88= don't know**	
	sale of own produced crops		INCCROP	⌊⌊⌋
	sale of own produced or gathered goods/crafts		INCGOOD	⌊⌊⌋
	casual labour/temporary salary		INCTEMP	⌊⌊⌋
	petty trade / small business		INCBUISN	⌊⌊⌋
	employment/ regular salary		INCSALAR	⌊⌊⌋
	remittances from relatives/husband		INCREMITT	⌊⌊⌋
	Income generated by sale or exchange of public transfers (MGNREGA, cash for work, food for work, food vouchers, fertilizer or seed vouchers etc.)		INCPUBTR	⌊⌊⌋
	none (subsistence farming only)		INCSUBS	⌊⌊⌋
	Begging / rag picking		INCBEG	⌊⌊⌋
	Receiving rent		INCRENT	⌊⌊⌋
	Other:		INCSPEC	
9	Does any member of this household has access to any land that can be used for agriculture?	*0= no →**Q 11*** *1= yes*	HHLAND	⌊⌋
10	Which crops do you grow on the land? ***Check all that applies***		*0= no, 1= yes, 88= don't know*	
	maize		MAIZE	⌊⌊⌋
	wheat		WHEAT	⌊⌊⌋
	Paddy		PADDY	⌊⌊⌋
	Sorghum		SORGHUM	⌊⌊⌋
	Soyabean		SOYA	⌊⌊⌋
	Mustard (rai)		MUSTARD	⌊⌊⌋
	Tuar		TUAR	⌊⌊⌋
	Masur		MASUR	⌊⌊⌋
	Chana		CHANA	⌊⌊⌋
	Groundnuts		GROUNDNUTS	⌊⌊⌋
	Millet (bajra)		MILLET	⌊⌊⌋
	Peas (matar)		PEAS	⌊⌊⌋
	Sesame (til)		SESAME	⌊⌊⌋
	Black gram (urad)		BLACKGRAM	⌊⌊⌋
	other:		GROSPEC	⌊⌊⌋
11	Are you aware of the home garden scheme (insert name of scheme)?	0= no 1= yes	HGSCHEME	⌊⌋
11a	Do you have a home garden?	0= no → ***Q 14*** 1= yes	HOMEGAR	⌊⌋
11b	Where is your home garden located?	1= Next to house 2= assigned area in field	HGLOCAT	⌊⌋

13	Main use of vegetables produced?	1= mainly own consumption 2= mainly for sale 3= both (in approx. equal amounts) 99= other (specify)	USEVEG	⌊⌊⌋
13a	How much do you reply on to your home garden to feed your family?	1= Very much 2= Much 3= So so 4= Not so much 5= Not at all	CONSUMIMP	⌊⌋
14	Do you have any fruit or fruit trees at your homestead or accessible to you and your family?	0= no → ***Q 16*** 1= yes	GARFRUIT	⌊⌋
15	Main use of fruits	1= mainly own consumption 2= mainly for sale 3= both (in approx. equal amounts) 99= other (specify):	USEFRU	⌊⌊⌋
16	Do you collect indigenous vegetables or leafy vegetables from the surrounding areas?	0= no → ***Q 17*** 1= yes	COLLECTIV	⌊⌋
16a	Which indigenous vegetables or leafy vegetables are available during the rainy season?	Record all vegetables	IVRAINSPEC	
16b	Which indigenous vegetables or leafy vegetables are available during the summer season?	Record all vegetables	IVSUMRSPEC	
17	Does this household own any livestock herds, or farm animals, or poultry, or fishponds?	0= no → ***Q 19*** 1= yes	ANIMALS	⌊⌋
18	Main use of animal produce?	1= mainly own consumption 2= mainly for sale 3= both (in approx. equal amounts) 4= mainly agricultural or transportation 99= other (specify):	USEANIM	⌊⌊⌋
19	Do you or others in your household participate in programs such as…. ***Check all that applies***		**0= no, 1= yes**	
	school feeding (mid day meals)		SCHOOLF	⌊⌋
	anganwadi programs		ANGANWAD	⌊⌋
	Public Work Programs (MNREGA)		PWP	⌊⌋
	TPDS		TPDS	⌊⌋
	Other:		SUPPSPEC	
20	Is your household a TPDS beneficiary?	0= No → ***Q 21*** 1= Yes	TPDSBEN	⌊⌋
20a	Is your card available? (Please ask to see card)	0= No, card could not be checked → ***Q 20c*** 1= Yes, card could be checked 2 = Not having any card → ***Q 21***	TPDSCARD	
20b	Please record from card/slip:		**0= no, 1= yes**	
	Record category	1= AYY 2= BPL 3= APL	TPDSTYPE	⌊⌋
	Record number of persons stated in the card		TPDSNUM	⌊⌋
	Total entitlement in kg (as indicated in card)		TPDSENT	⌊⌊⌋
20c	Do you have difficulties accessing the TPDS ration shop?	0= No → ***Q 21*** 1= Yes	TPDSSHOP	⌊⌋
20d	What are your main challenges accessing the TPDS ration shop? **Check all that applies**		**0= no, 1= yes**	
	Distance to shop		TPDSDIS	⌊⌊⌋
	Lack of transportation to shop		TPDSTRAN	⌊⌊⌋

	Unable to go on assigned date	TPDSDATE	⌊⌊⌋⌋
	Food not available at shop	TPDSNA	⌊⌊⌋⌋
	Other (specify)	TPDSSPEC	

Sanitation and hygiene Information

21	What is the main source of drinking water for members of your household during the wet/cold season?	1= public tap/handpump, tubewell / borehole, protected dug well, rainwater collection 2= unprotected spring, unprotected dug well, surface water (river, stream, dam, lake, pond, canal, irrigation channel), bottled water	DRINKWAW	⌊⌋
22	What is the main source of drinking water for members of your household during the dry/hot season?	1= public tap/handpump, tubewell / borehole, protected dug well, rainwater collection 2= unprotected spring, unprotected dug well, surface water (river, stream, dam, lake, pond, canal, irrigation channel), bottled water	DRINKWAD	⌊⌋
23	Could you describe how you store water?	1= clean container or earthen pot or plastic bottle 2= covered container or earthen pot 3= clean and covered container or earthen pot or plastic bottle 88= don't know 99= other	STOREWA	⌊⌊⌋⌋
24	Do you treat your water in any way to make it safe to drink?	0= no → ***Q 25*** 1= yes 88= don't know → ***Q 25***	TREATWA1	⌊⌊⌋⌋
24a	What do you usually do to the water to make it safer to drink?	1= boil it 2= add bleach/chlorine 3= strain it through a cloth 4= use a water filter (ceramic, sand, composite, etc.) 5= use solar disinfection 6= let it stand and settle 7= community tap filters (like zero-b, RO etc) 88= don't know 99= other:	TREATWA2	⌊⌊⌋⌋
25	Does your household have a toilet facility?	0= No →***Q26*** 1= Yes	HAVELATRINE	⌊⌊⌋⌋
25a	What kind of toilet facility do members of your household usually use?	1= pit latrine with slab, composting toilet, Flush/pour to septic tank, Flush/pour to piped sewer system, Flush/pour to pit latrine 2= pit latrine without slab/open pit, bucket, Flush/pour to elsewhere, Flush/pour to unknown place/not sure/ don't know, Hanging toilet/ latrine	LATRINE	⌊⌊⌋⌋
25b	Do you share this toilet facility with other households?	0= No 1= Yes	SHARETOI	⌊⌊⌋⌋

26	***Now I would like to ask you some questions about food. During the last MONTH, was there a time when…..***			
a	You were worried you or anyone else in your household would not have enough food to eat because of a lack of money or other resources?	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESA	⌊⌊⌋⌋
b	Still thinking about the last MONTH, was there a time when you or anyone else in your household were unable to eat healthy and nutritious food because of a lack of money or other resources	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESB	⌊⌊⌋⌋
c	You or anyone else in your household ate only a few kinds of foods because of a lack of money or other resources	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESC	⌊⌊⌋⌋
d	You or anyone else in your household had to skip a meal because there was not enough money or other resources to get food	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESD	⌊⌊⌋⌋

e	Still thinking about the last MONTH, was there a time when you or anyone else in your household ate less than you thought you should because of a lack of money or other resources	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESE	⌊⌋⌋
f	Your household ran out of food because of a lack of money or other resources	0= no 1= yes 88 = don't know 98= refused/no answer	HFIESF	⌊⌋⌋
g	You or anyone else in your household were hungry but did not eat because there was not enough money or other resources for food	0= no → ***Qi*** 1= yes 88 = don't know → ***Qi*** 98= refused/no answer	HFIESG	⌊⌋⌋
h	In the last **MONTH** (**=30 days, or 4 weeks),** how often did it happen that you or anyone else in your household were hungry but did not eat because there was not enough money or other resources for food? Did this happen only once or twice, in some weeks but not every week, or almost every week? ***Note:*** *If respondent says this did not happen in the last MONTH, go back to Q7 and code as "No" [code 0].*	1= Only once or twice 2= In some weeks but not every week 3= Almost every week 88= Don't Know 98= refused/no answer 0= did not happen	HFIESH	⌊⌋⌋
i	In the last MONTH, was there a time when you or anyone else in your household went without eating for a whole day because of a lack of money or other resources?	0= no →***Q27*** 1= yes 88 = don't know → ***Q27*** 98= refused/no answer	HFIESI	⌊⌋⌋
j	In the last **MONTH (=30 days, or 4 weeks)**, how often did it happen that you or anyone else in your household went without eating for a whole day because of a lack of money or other resources? Did this happen only once or twice, in some weeks but not every week, or almost every week? ***Note:*** *If respondent says this did not happen in the last MONTH, go back to Q7 and code as "No" [code 0].*	1= Only once or twice 2= In some weeks but not every week 3= Almost every week 88= Don't Know 98= refused/no answer 0= did not happen	HFIESJ	⌊⌋⌋
27	How many meals did your husband have yesterday (including the meals outside the house)?	Record number of meals	MEALM	⌊⌋⌋
27a	How many meals did you have yesterday (including the meals outside the house)?	Record number of meals	MEALW	⌊⌋⌋

Child Information				
28	Is your child (6 to 23 months) a boy or a girl?	1 = male 2 = female	SEXCHILD	⌊⌋
Information on Breastfeeding				
29	Has (name of child) ever been breastfed?	0= no 1= yes 88= don't know	IBFQ10	⌊⌋⌋
30	Was (name of the child) breastfed yesterday during day or at night?	0= no 1= yes 88= don't know	IYCFQ7	⌊⌋⌋
30a	Did (name of child) consume breast milk in any other way yesterday during the day or at night? e.g. by spoon, cup or bottle; by his/her mother or another woman	0= no 1= yes 88= don't know	IYCFQ7A	⌊⌋⌋
Information on childcare				
31	Who is supporting you in taking care of (name of child)?	0= respondent alone 1= mother/mother in law 2= older siblings of child 99= other	CARESUP	⌊⌋
32	Who was taking care of (name of child) yesterday?	0= respondent 1= supporter	CAREYES	⌊⌋

! Before you continue: Try to find yesterday's caretaker for the 24-h recall!

33a	Now I would like to ask you about some liquids that (name of child) may have had yesterday during the day or night. Did (name of child) have any….. *Read each item aloud and record response before proceeding to the next item.*		**RECORD:** **0= no, 1= yes, 88= don't know**
	Infant formula?	IYCFQ10B	☐☐
	If yes, how many times	IYCFQ11B	☐☐
	Tinned, powdered, fresh or packed milk?	IYCFQ10C	☐☐
	If yes, how many times	IYCFQ11C	☐☐
	Sour milk, yoghurt?	IYCFQ10F	☐☐
	If yes, how many times	IYCFQ11F	☐☐

Minimum Dietary Diversity Children

33b Please describe everything that (name of child) ate yesterday during the day or night, whether at home or outside the home. (**a)** Think about when (name of child) first woke up yesterday. Did (name of child) eat anything at that time? If Yes, please tell me everything (name of child) ate at that time. ***Probe Anything else?*** *Then continue to question* ***b*** **b)** What else did (name of child) eat? Did (name of child) eat anything at that time? If yes, please tell me everything that (name of child) ate at that time. *Probe:* ***Anything else?***		
Breakfast		
Lunch		
Dinner		
Night		
Snacks		
Porridge/daliya (rice or wheat or semolina or maize), bread, rice, noodles, rice kanji or other foods made from grains like sorghum, millet, rice, wheat etc.	IYCFQ12A	☐☐
Pumpkin, carrots, or sweet potatoes that are yellow or orange inside	IYCFQ12B	☐☐
White potatoes, white yams, cassava (tapioca) or sabudana, or any other foods made from white roots	IYCFQ12C	☐☐
Any dark green leafy vegetables including wild green vegetables like spinach, fenugreek, drumstick (Moringa oleifera) leaves, amaranth, cassava leaves, pumpkin leaves, mustard	IYCFQ12D	☐☐
Ripe mangoes, Ripe Paw paws (other local Vitamin-A rich fruits)	IYCFQ12E	☐☐
Any other fruits or vegetables like cabbage, eggplants, tomatoes, onions, green pepper, green/fresh beans, broad beans, cluster beans, okra, oranges, apples, bananas, tangerines	IYCFQ12F	☐☐
Liver, kidney, heart, blood, or other organ meats	IYCFQ12G	☐☐
Any meat, such as goat, chicken, pork (pig meat), rabbits, ducks?	IYCFQ12H	☐☐
Eggs from any kind of birds	IYCFQ12I	☐☐
Fresh or dried fish, shellfish, or seafood	IYCFQ12J	☐☐

Any foods made from dals (lentils), pulses, moong dal, chana (whole), beans, ground beans, peas, soya, ground nuts, nuts or seeds?	IYCFQ12K	
Milk, yoghurt, paneer, cheese, milk or other milk products	IYCFQ12L	
Any fat, oil, ghee, vanaspati or butter or foods made with any of these?	IYCFQ12M	
Any sugary foods such as chocolates, sugar, honey, sweets, candies, cakes, or biscuits, soda, fanta, cocacola etc,	IYCFQ12N	
Condiments for flavor, such as chilies, ginger, mustard seeds, jeera,garlic, karipatta, salt etc	IYCFQ12O	

33c	Did (name of child) receive anything to eat/any kind of food yesterday?	0= no → ***Q 36*** 1= yes 88= don't know → ***Q 36***	IYCFQ13	
33d	How many times did (name of child) receive food including **meals** and **snacks** yesterday?	**Record number of times** 88= don't know	IYCFQ14	
Feeding Habits				
34	Was (name of child)'s intake of food yesterday different from usual	0= no 1= yes 88= don't know	CFUSUAL	
35	How old was (name of child) when you first gave other food apart from breast milk?	***Record age in months*** 88= don't know **77= does not yet take food**	CFAGE	
35a	Do you prepare food for (name of child) separately from family food?	0= no 1= yes→ ***Q 36***	CFSEPARATE	
35b	At what age did you start giving your child family food?	**Record age in months**	CFFAMFD	
36	Please look at this picture of porridges: Which one would you give to a young child?	1= shows thick porridge 2= shows watery porridge 88= don't know	CONSIST	
36a	Please tell me some ways to make porridge/ food more nutritious or better for your baby's health. *Probe if necessary:* Which foods or types of food can be added to porridge make it more nutritious? ***Do not read the answers, Check all that applies***		**0= no, 1= yes,**	
	Animal-source foods (milk, meat, poultry, fish, eggs, etc.)		ADANIM	
	Pulses and nuts: flours of other legumes (dals or pulses), soyabean, ground nuts		ADPULS	
	Orange (vitamin A rich) fruits and vegetables (carrot, orange-fleshed sweet potato, yellow pumpkin, mango, papaya, etc.)		ADVITA	
	Green leafy vegetables (e.g. spinach)		ADLVEG	
	Energy-rich foods (e.g. oil, butter, ghee, vanaspati)		ADFAT	
37	When (name of child) is sick, is he/she given less than usual, about the same amount, more than usual or nothing to drink (**including breast milk**)? *If less, PROBE: Was he/she given much less than usual to drink or somewhat less?*	1= much less 2= somewhat less 3= about the same 4= more 5= nothing 6= child never been sick 88= don't know	ILLDRINK	
38	When (name of child) is sick, is he/she given less than usual, about the same amount, more than usual or nothing to eat? *If less, PROBE: Was he/she given much less than usual to eat or somewhat less?*	1= much less 2= somewhat less 3= about the same 4= more 5= nothing, stopped food 6= child never been sick	ILLEAT	

		7= does not yet take food 88 = don't know		
39	Has (name of child) had diarrhea in the past two weeks?	0= no 1= yes 88= don't know	CHDIAR	
39a	Since (name of child) was born, how many times did he/she suffer from diarrhea?	*Record number of diarrhea episodes*	FREQDIA	
40	How can you recognize that someone is not having enough food? *Probe if necessary:* What are the signs of undernutrition? ***Do not read the answers, Check all that applies***		**0= no, 1= yes,**	
	Lack of energy/weakness: cannot work, study or play as normal (disability)		RECMAL1	
	Weakness of the immune system (becomes ill easily or becomes seriously ill)		RECMAL2	
	Loss of weight/thinness		RECMAL3	
	Children do not grow as they should (growth faltering)		RECMAL4	
41	What are the reasons why people are malnourished? ***Do not read the answers, Check all that applies***		**0= no, 1= yes,**	
	Not getting enough food		REAMAL1	
	Food is watery, does not contain enough nutrients		REAMAL2	
	Disease/ill and not eating food		REAMAL3	
42	What should we do to prevent malnutrition among young children (6–23 months) ***Do not read the answers, Check all that applies***		**0= no, 1= yes,**	
	Give more food		PRVMAL1	
	Give different types of food each day		PRVMAL2	
	Feed frequently		PRVMAL3	
	Give attention during meals		PRVMAL4	
	Go to the health centre/hospital and check that the child is growing (growth monitoring services)		PRVMAL5	
43	Do you have a counseling structure for nutrition in your village?	0= no 1= ICDS / Anganwadi 2= volunteer group 3= Primary health center 4= NGO 99= Other	NUSTRUC	
44	Do you receive any nutrition counseling?	0= no 1= ICDS / Anganwadi 2= volunteer group 3= Primary health center 4= NGO 99 = Other	NUCOUN	

Women Information

45	How many times did you receive antenatal care during the pregnancy with (name of child)?	Record number of times 88= don't know	ANTECAR	
46	How many times did you go to under anganwadi with (name of child)?	Record number of times 88= don't know	UNDER5	

47	In pregnant and lactating women, what should they take care of in terms of their eating habits? ***Do not read the answers, Check all that applies***		**0= no, 1= yes,**	
	Eat more (increase quantity)		WEAT1	⌊⌊⌋⌋
	Eat different types of food each day		WEAT2	⌊⌊⌋⌋
	Eat frequently		WEAT3	⌊⌊⌋⌋
	Take iron tablets		WEAT4	⌊⌊⌋⌋
	Other		WEATSPEC	
48	Does your HH have soap (or washing powder/ liquid) at present? *Ask her to show you the soap.*	0= no 1= yes 88= don't know	HHSOAP	⌊⌊⌋⌋
48a	When you used soap the last time, what did you use it for? If "for washing my hands" is mentioned, probe what was the occasion, but do not read the answers! *(Do not read the answers, check all that applies)* **RECORD:, 0= no, 1= yes**			
	Washing my children's hands		WCHILDH	⌊⌋
	Washing hands after defecating		WCHILDD	⌊⌋
	Washing hands after cleaning child		WAFTERC	⌊⌋
	Washing hands before feeding child		WBEFFED	⌊⌋
	Washing hands before preparing food		WBEFFOOD	⌊⌋
	Washing hands before eating		WBEFEAT	⌊⌋
	Washing hands after touching and cleaning animals		WANIMALS	⌊⌋
	Washing body, hair, clothes, dishes and pots, cleaning the house		WBODY	⌊⌋
48b	Please describe step by step how you wash your hands *Note:* ***do not read out the answers***	1= washes hands in a bowl of water (sharing with other people) – poor practice 2= with someone pouring a little clean water from a jug onto one's hands – appropriate practice 3= under running water – appropriate practice 4= washes hands with soap or ashes	HANDWA1	⌊⌋
			HANDWA2	⌊⌋
49	Food poisoning often results from contact with germs from faeces. What can you do to avoid sickness from germs from human or animal faeces?		0= no 1= yes	
	Wash hands (after going to the toilet and cleaning the baby's bottom)		PRVDIA1	⌊⌋
	Remove faeces from the home and surroundings (use a latrine, teach small children to use a potty and put children's faeces in the latrine, and clean up faeces from animals)		PRVDIA2	⌊⌋
	Cover food to protect it from flies		PRVDIA3	⌊⌋
	Wash fruit and vegetables before preparation		PRVDIA4	⌊⌋
50	Did you ever receive any hygiene counseling?	0= no 1= yes 88= don't know	HWCOUN	⌊⌋

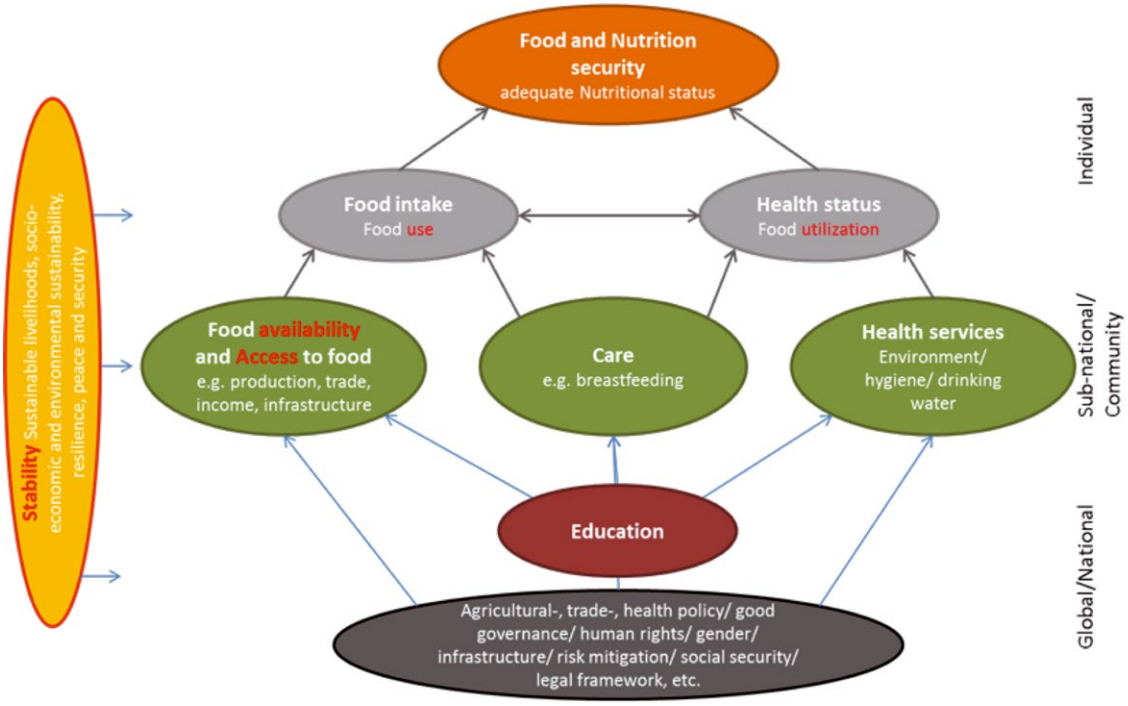
Minimum Dietary Diversity - Women

51	Please describe everything that you ate yesterday during the day or night, whether at home or outside the home. (**a)** Think about when you first woke up yesterday. Did you eat anything at that time? If Yes, please tell me everything *Then continue to question **b*** **b)** What else did you eat? Go from possible meal to meal and complete the list ***Anything else?***			
Breakfast				
Snack				
Lunch				
Snack				
Dinner				
Snack				
Night				
Bread, chapatti, rice, noodles, or other foods made from grains like maize, sorghum, millet, rice, wheat etc?			IWDDSA	
White potatoes, white yams, cassava (tapioca) or sabudana, or any other foods made from roots			IWDDSB	
Any foods made from dal or pulses, moong dal, chana, soyabean, peas (fresh or dried)			IWDDSC	
Any foods made from groundnuts (groundnut flour), nuts, tree-nuts, or seeds including nut/seed butters			IWDDSD	
Milk, paneer, yoghurt, cheese or other milk products			IWDDSE	
Liver, kidney, heart, blood-based foods, or other organ meats (including from wild game)			IWDDSF	
Any meat, such as pork, lamb, goat, chicken, rabbits, ducks, or wild game meat?			IWDDSG	
Fresh or dried fish, shellfish, or seafood			IWDDSH	
Eggs from any kind of birds			IWDDSI	
Any dark green leafy vegetables including wild green vegetables like spinach, fenugreek leaves, drumstick (Moringa olefeira) leaves, cassava leaves, amaranthus, pumpkin leaves, mustard?			IWDDSJ	
Pumpkin, carrots, squash, or sweet potatoes that are yellow or orange inside			IWDDSK	
Ripe mangoes, Ripe Paw paws			IWDDSL	
Any other vegetables like cabbage, eggplants, tomatoes, onions, green pepper, green beans, broad beans, cluster beans, okra			IWDDSM	
Any other fruit like oranges, sweet limes, apples, bananas, guavas, pears, pomengranate, chickoo (Manilkara zapota/Sapota), melon, coconut flesh			IWDDSN	
Oil, fats, ghee, vanaspati or butter added to food or used for cooking, including extracted oils from nuts, fruits and seeds, and all animal fat			IWDDSP	
Wafers, fried potatoes, fried dough (samosa, kachori), other fried snacks			IWDDSQ	
Any sugary foods such as chocolates, sugar, honey, sweets, candies, cakes, or biscuits			IWDDSR	
Sweetened fruit juice or juice-drinks (like rasna, frooti etc), soft drinks/fizzy drinks like, fanta, cocacola, sprite, chocolate drinks, tea or coffee with sugar			IWDDSS	
Ingredients used in small amounts for flavor, such as chilies, pepper, ginger, garlic, cumin (jeera), kari patta, salt etc			IWDDST	
52	Was yesterday a normal day or a fasting day, or a feast?	1= normal 2= fasting 3= feast	HWCOUN	

Thank the mother for her time and cooperation.

T: UNICEF Model

Impact Pathway (adapted from UNICEF Conceptual Framework, 1990)



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