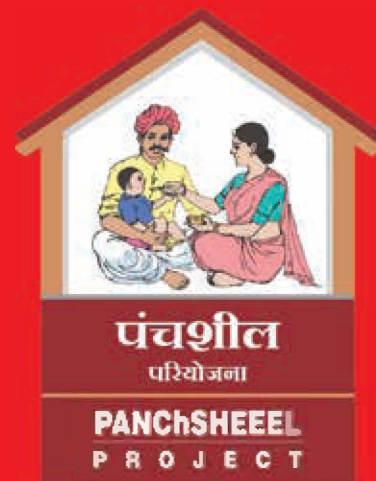


Nutrition | Health | Education | Environment | Engineering



# PARTICIPATORY APPROACH FOR NUTRITION IN CHILDREN

STRENGTHENING HEALTH EDUCATION  
ENGINEERING AND ENVIRONMENT  
LINKAGES

FORMATIVE REPORT

1<sup>st</sup> January 2020



Save the  
Children India



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## Acknowledgments

PANChSHEEL gratefully acknowledges the input from our community champions and field team, which made this project possible.

This work was supported by the Global Challenges Research Fund and funded by the MRC, AHRC, BBSRC, ESRC and NERC [grant number: MR/P024114/1].

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# Abbreviations

Accredited Social Health Activist (ASHA)

Anganwadi Centres (AWC)

Anganwadi Level Monitoring Committee (ALMC)

Anganwadi workers (AWWs)

ASHA Sahyogini (AS)

Auxiliary Nurse Midwife (ANM)

Below Poverty Line (BPL)

Children Under Five Years (U5)

CommunityHealthCentre(CHC)

Crude Birth Rate (CBR)

Empowered Action Group (EAG)

Focus group Discussion (FGD) Key Informant Interviews (KII)

Government of India (GOI)

Health Education, Environment, Engineering (HEEE)

India Institute of Technology (IIT Delhi)

Infant and Young Child Feeding (IYCF)

Integrated Child Development Scheme (ICDS)

Jawaharlal Nehru University, New Delhi (JNU)

Liquified Petroleum Gas (LPG)

Maternal Child Health and Nutrition Days (MCHN Days)

Medical Research Council (MRC)

Memoranda of Understanding (MOU)

Mahatma Gandhi National Rural Employment Guarantee Act (MNAREGA)

Non-Governmental Organisation (NGO)

OtherBackwardClass(OBC)

Participatory Approach for Nutrition in Children: Strengthening Health Education Engineering and Environment Linkages (PANCHSHEEL)

Pradhan Mantri Ujjwala Yojana (PMUY)

Public Distribution System (PDS)

Qualitative data analysis software(IQDAS)

Reverse Osmosis (RO)

Save the Children India (SC India)

Scheduled Tribe (ST)

Socio-economic status (SES)

Take Home Ration (THR)

The National Family Health Survey-4 (NFHS-4)

The National Rural Drinking Water Programme (NRDWP)

University College London (UCL)

Village Health Sanitation and Nutrition Committees (VHSNC)

Water, Sanitation and Hygiene (WASH)

Women's Empowerment in Agriculture Index (WEAI)

# Glossary

Accredited Social Health Activist (ASHA)	A trained female community health activist selected from the village itself and trained to work as an interface between the community and the public health system. She is the first port of call for any health related demands of deprived sections of the population, especially women and children, who find it difficult to access health services.
Anganwadi Centres (AWC)	A village level institution under Integrated Child Development Services (ICDS) Programme, that provides a wide range of health, nutrition and education related services to target the needs of age groups that represent a significant window of opportunity for nutrition investments (i.e. children under three years of age, pregnant and lactating mothers)
Anganwadi Worker (AWW)	The incharge (usually a female from the community) of the Anganwadi Centre established under the government programme of Integrated Child Development Services (ICDS). Conducts all the activities at the Anganwadi Centre.
Auxiliary Nurse Midwife (ANM)	A village level female health worker who is the backbone of primary healthcare in rural areas. They form an important link between the rural Primary Health Centers and the community, ensuring no one is left without access to basic primary health services.
Colostrum or Khidi	The sticky, yellowish substance produced by the mother soon after birth is ideal for the newborn - in composition, in quantity and rich in antibodies. Colostrum not only nourishes, it also protects. It is just what the baby needs during its first few days. Colostrum needs to start in the first hour. In the tribal language of Banswara region, Rajasthan, India, it is called Khidi.
Complementary Food	Foods that are introduced to the infant after the completion of 6 months, to complement breast milk, because the infant's need for energy and nutrients starts to exceed what is provided by breast milk. Ensuring that infants nutritional needs are met requires that complementary foods be timely, adequate, safe and properly fed.
Focus Group Discussion (FGD)	It is a form of qualitative research consisting of interviews in which a group of people are asked about their perceptions, opinions, beliefs, and attitudes towards a product, service, concept, advertisement, idea, or packaging. Questions are asked in an interactive group setting where participants are free to talk with other group members.
HEEE	Health-Education-Engineering-Environment interdisciplinary research team.
HEEE Nutrition package	An interdisciplinary HEEE intervention package, based on this formative research, to facilitate the introduction of nutritionally-adequate and safe complementary foods at 6 months together with continued breastfeeding up to 2 years of age or beyond.

Infant and Young Child Feeding (IYCF) practices	A set of global public health recommendations for appropriate feeding of new-born and children under two years of age. Recommendations for optimal infant and young child feeding state that infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond.
Key Informant Interview (KII)	In-depth interview with important members of the village like elected representatives, AWW, and government staff working in the village, such as ANM and Teachers.
Mid Upper Arm Circumference (MUAC)	The circumference of the left upper arm, measured at the mid-point between the tip of the shoulder and the tip of the elbow (olecranon process and the acromium). MUAC is used as an anthropometric indicator for the assessment of nutritional status.
Mother and Child Protection Card	A maternal and child care entitlement card, a counselling and family empowerment tool which would ensure tracking of mother and child cohort for health, nutrition and development purposes. As the first contact point between a pregnant woman and the health system, the MCP card has the potential to create awareness, facilitate community dialogue and generate demand for uptake of vital services being provided.
Panchayat villages	A gram panchayat (village council) is the grassroots-level of panchayat raj formalised local self-governance system in India at the village or small-town level, and has a sarpanch as its elected head.
Partial Breastfeeding	When the infant is given some breastfeeds, and some artificial feeds, either milk or cereal, or other food.
Revenue villages	A Revenue Village is a small administrative region in India, a village with defined borders. One revenue village may contain many hamlets.
School Management Committee (SMC)	A school level committee consisting of elected representative of local authority, parents or guardian of children admitted in such schools and teachers. It provides a platform for communities to take an active role in the planning, implementation and monitoring of school functioning and provide mechanisms for more effective management at school level.
Take Home Ration (THR)	Supplementary nutrition in the form of micronutrient fortified blended food and/or energy dense food packets that are distributed at Anganwadi Centre to children between 6-36 months of age and to pregnant/lactating women for consumption at home to fill in the nutrition gap.
Pradhan Mantri Ujjwala Yojana/ Ujjwala Scheme	This scheme aims to safeguard the health of women & children by providing them with a clean cooking fuel – Liquefied Petroleum Gas, so that they don't have to compromise their health in smoky kitchens or wander in unsafe areas collecting firewood.
Village Health and Nutrition Day (VHND)	It is a fixed day of the month, which is organized to provide a unique platform at village level to bring about the convergence of health, nutrition and sanitation services at primary care level. The platform provides a package of services including registration of pregnant women and vaccination for all eligible children especially focusing on drop out cases of pregnant women and children, growth monitoring and appropriate management of malnourished children, family planning services, and health education among others.
Ward Panch (WP)	Elected representative of Panchyati Raj Institutions. One village has one or two Ward Panchs depending on the size of the village.

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# Chapter 1

## Introduction

### Study Background



The Participatory Approach for Nutrition in Children: Strengthening Health Education Engineering and Environment Linkages (PANChSHEEEL) project was an inter-disciplinary study, designed to explore the Health, Education, Environment and Engineering (HEE) factors that influence Infant and Young Child Feeding (IYCF) practices and nutrition in India. The study aimed to develop a socio-culturally appropriate, tailored, innovative and integrated cross sector HEEE Nutrition package<sup>1</sup> to support optimal IYCF practices for children in rural India aged 6 to 24 months. This exploratory study was designed in five iterative phases over a span of two years, with the intention to secure further funding for scale-up of the project and national implementation of the Intervention Package.

PANChSHEEEL Study Objectives	
<b>Phase 1: Background</b>	
<ul style="list-style-type: none"> <li>To identify and document the local practices with regard to feeding practices, sanitation, access to local resources (such as energy and water) and educational practices in relation to infants and young children 6 months- 24 months and map the existing Government of India (GOI) initiatives in the study sites.</li> </ul>	
<b>Phase 2: Fieldwork</b>	
<ul style="list-style-type: none"> <li>To identify the local challenges, drivers, resources, opportunities and needs for the first 6 to 24 months at individual, household, community and environmental level.</li> <li>Map the linkages between identified opportunities and challenges in order to determine how the needs identified in objective 2 can be addressed</li> </ul>	
<b>Phase 3: Analysis and Mapping</b>	
<ul style="list-style-type: none"> <li>To explore how community resources and opportunities can be harmonized and leveraged to optimize early childhood feeding practices at individual, household, community and environment level through a community participatory approach.</li> </ul>	
<b>Phase 4: Intervention Design</b>	
<ul style="list-style-type: none"> <li>To develop a multi-faceted, context adapted and socio-culturally sensitive intervention package integrating Health-Education-Engineering-Environment (HEEE Nutrition package) to promote optimal feeding practices in children aged 6-24 months.</li> </ul>	
<b>Phase 5: Review and Dissemination</b>	
<ul style="list-style-type: none"> <li>To explore the acceptability of the integrated package and how it could be communicated and disseminated through community education and innovation hubs (community centres and schools ) and trained community champions.</li> </ul>	

PANChSHEEEL was a 5-phase formative study; Phase 1 focused on identifying and documenting the local practices with regard to feeding practices, sanitation, access to local resources (such as energy and water) and educational practices in relation to infants and young children aged 6 to 24 months.

1. An interdisciplinary HEEE intervention package, based on this formative research, to facilitate the introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond.

The existing Government of India (GOI) initiatives in the study sites were also mapped during Phase 1. Phase 2 involved extensive field work to identify the local challenges, drivers, resources, opportunities and needs for children in the first 6 to 24 months of life at individual, household, community and environmental level. Phases 3, 4 and 5 focused on the analysis and mapping of HEEE linkages, intervention design and implementation, as well as review and dissemination phases of this study.

Our collaborative approach included an interdisciplinary team from University College London (UCL), across the Institute of Child Health, Institute of Education and Faculty of Engineering Sciences, and expertise from; Save the Children- India, Indian Institute of Technology, New Delhi (IIT-Delhi) and Jawaharlal Nehru University, New Delhi (JNU). Team members from the above formed the Core Team (CT). The participatory approach actively involved nine villages<sup>2</sup> within Ghatol and Kushalgarh Block of Banswara district of Rajasthan. A mixed-methods approach structured by a socio-ecological framework was used for the data collection at individual, household and community levels and co-design of the Intervention Package through an iterative participatory process. Methodology included partnerships with local Community Researchers (CR), 'Community Champions' (CC), and Community Members (CM), selected from the community. They worked together with the School teachers and Frontline workers (FLWs) and all of them together formed the 'Community Wing' of the research team. Community Researchers acted as an extension of the Community Wing and worked in tandem with the Field Team of Save the Children, who made up an extension of the Core Team (see Figure 1).

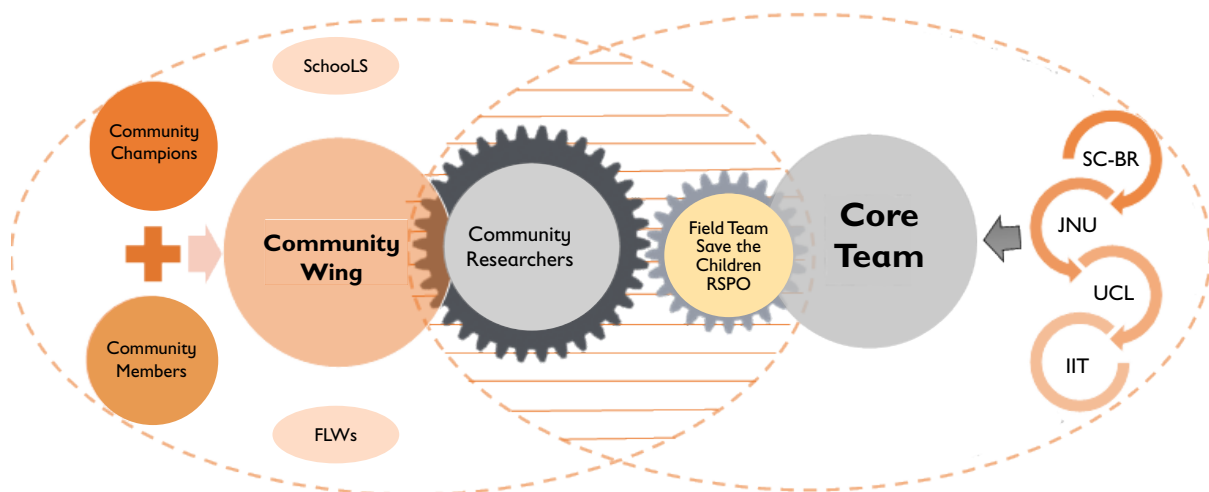


Figure 1 - Team Structure of the PANChSHEEL Study

## Malnutrition in context

It is well established that the period between 6 and 24 months of age represents a critical time for infant growth (Imdad, 2011). The incidence of stunting is highest during this critical period, as children have a high demand for nutrients while facing limitations in the quality and quantity of feeding during the weaning period. In addition to disease prevention strategies, supplementary feeding interventions targeting this critical period are the most effective in reducing malnutrition and promoting growth and development of children (Imdad, 2011). Based on the evidence for the effectiveness of interventions, achieving universal coverage of optimal breastfeeding could prevent 13% of global deaths occurring in children less than five years of age, while appropriate complementary feeding practices could result in an additional 6% reduction in under-five (U5) mortality (Jones, 2003). In developing countries, breastfed children are at least six times more likely to survive in the early months, when compared to children who are not breastfed. Inadequate growth of children in low-income countries is generally the consequence of infectious disease and low nutrient intake, particularly inadequate energy and protein intake, relative to nutritional requirements (Mitra et.al, 2007).

2. Refer to page 24 for information on the selection of these nine villages.

Source: WHO, 2005

Reference: [https://www.who.int/nutrition/publications/guidingprin\\_nonbreastfed\\_child.pdf](https://www.who.int/nutrition/publications/guidingprin_nonbreastfed_child.pdf)

## Determinants

In the causality matrix of malnutrition, an important underlying determinant is the care provided to children. There is growing awareness around the effect of cultural and behavioural practices regarding child rearing on children's nutritional status. Poor care has been associated with significantly higher prevalence of stunting and underweight in children. Unlike breastfeeding, complementary feeding issues are more complex in the realm of adequacy, suitability, diversity and hygienic practices. The factors contributing to malnutrition have been researched under broad domains (see Box 1).

## Role of Care Givers in Feeding practices

The quality of care received by a child makes a difference to their well-being, nutritional status and development outcomes. Maternal influences also play a vital role in the life of a child. Child health is a direct outcome of care provided at the household level, beginning from the gestation period. A child's mother is often the primary guardian of their health, although there are variations in this trend such as grandmothers and siblings taking a leading role in child care. The time spent on child care by mothers is considered an important contributing factor to child development. Whether working at home or in emerging roles which involve long hours of activity outside the home, mothers often remain the main providers of child care. In addition to this, rural women often have to care for domestic livestock

and poultry and sell goods on the market. In such circumstances, additional responsibilities outside the home add to the burden on her domestic routine work, further limiting the amount of time she has to care for her children and family. Increased workload and time constraints of the mothers has been associated with child under-nutrition (Chaturvedi et al 2016). Although almost all mothers found time to prepare food, and most of them fed their children themselves, they had little or no time for their children's other needs. Even during pregnancy, women rarely had time to spare for tending to their own health and nutrition needs. When compared to non-working mothers, working mothers tend to devote less time in addressing morbidities in their children, such as diarrhoea. This reduced time in child care often results in reductions in nutritional status that negate the gains achieved from increased household income from working mothers (DeWalt, 1985).

Increased awareness of children's health needs, alongside cultural and behavioural practices regarding child rearing practices, influence child nutrition. In addition to this, the availability of resources for care givers impacts child nutrition. These resources include a variety of factors, such as knowledge and beliefs about child rearing, health and nutritional status of the care giver, control of resources, autonomy of child care, work load and social support (Ramji, 2009).

Child feeding practices are not only affected by women's employment but the type, profile and location of their work as well. In one study on employment and feeding, both working and non-working women in Pakistan gave different reasons for initiating alternative methods of feeding. Women from the working group had to refrain from breastfeeding practices because of their work-

### Box 1 Domains for the Determinants of Malnutrition

- Role of Care givers in feeding practices (multitasking, time constrained mother with dwindling family support, mother's age and education);
- Social and economic context;
- Child targeted market with wide availability and consumption of ready-to-eat market food items;
- Fragile food security/seasonal food paucity;
- Biological factors
- Responsiveness of ICDS (Integrated Child Development Scheme) and health care system (health services and personnel);
- Geographical locations;
- Exposure to media;
- Migration/Urbanization.
- Environmental Factors like availability of pure drinking water, sanitation and Hygiene (WASH).

related requirements while, women from the non-working group had different issues for discontinuing breastfeeding, such as health-related issues, family related issues and subsequent pregnancy (Khaliq et al, 2017).

When mothers are away from home for long hours due to engagement in various income-generating activities or other household chores, younger children are often placed in the care of their elder sisters rather than elder brothers. In many households, grandparents also spent time outside of the home for income generating activities. For a time-constrained mother from a low-income background, elder female siblings are the only viable solution for child care when she receives little or no help from her husband or the elders of her family. In these families, young children spend an extensive period of the day in the care of elder sisters who may be too young to know about quality care provision. In unhygienic environments, caregivers may play with and feed their younger brothers and sisters with contaminated hands. As a result, it is unlikely that the young child will be able to retain and will also be exposed to infection (Chaturvedi, 2016).

Mothers with large workloads and time constraints may feed their children with ready-to eat food items from the market that are easily accessible, but not necessarily healthy for children. This feeding habit reduces preparation time and consumption of homemade foods, which tend to be more nutritious than ready-to-eat options. Child feeding practices are also determined by the fragile food security that is shaped by chronic poverty, including lean months during food shortages and lack of bulk purchasing options. Due to poverty, the food intake within a family may be inadequate, both in terms of quality and quantity (Chaturvedi et.al. 2016)

The National Family Health Survey-4 (NFHS-4)<sup>3</sup> reported that a mere 9.6% of children aged 6 to 23 months receive an adequate diet. This figure includes 14.3% of non-breastfeeding children and 8.7% of breastfeeding children, with urban prevalence indicators being a bit higher in most cases. There is no comparable data for these indicators in the previous survey round. However, comparison is possible for an indicator measuring the percent of children aged 6 to 8 months who receive solid or semi-solid food and breast milk (Table 1).

**Table 1 - Change in IYCF indicators (in %) from NFHS-3 to NFHS-4**

	States	Children receiving solid or semi solid food and breast milk (%)		Change in IYCF (%)
		NFHS 3 (2005 - 2006)	NFHS 4 (2015 - 2016)	
India	All	52.6	42.7	-9.9
North	Rajasthan	38.7	30.1	-8.6
	Punjab	50.9	41.1	-9.8
	Uttar Pradesh	41.2	32.6	-8.6
North East	Sikkim	85.4	61.8	-23.6
	Manipur	77.4	78.38	1.4
	Arunachal Pradesh	80.2	53.6	-26.6
West	Gujarat	54.1	49.4	-4.7

3. The National Family Health Survey is a large-scale, multi-round survey conducted in a representative sample of households throughout India. In the past three rounds have been completed since first survey 1992-93, second in 1998-99 and third in 2005-06 and the recent fourth in 2015-16. The Survey provides state and national information for India on fertility, infant and child mortality, the practice of family planning, maternal and child health, reproductive health, nutrition, anemia, utilization and quality of health and family planning services (<http://rchiips.org/nfhs/>).

	States	Children receiving solid or semi solid food and breast milk (%)		Trends in IYCF (%)
		NFHS 3 (2005 - 2006)	NFHS 4 (2015 - 2016)	
	Maharashtra	45.5	43.3	-2.2
Central	Madhya Pradesh	46	38.1	-7.9
	Chhattisgarh	49	53.8	4.8
East	Bihar	54.5	30.7	-23.8
	Jharkhand	60.2	47.2	-13
	West Bengal	47.1	52	4.9
	Odisha	65.4	54.9	-10.5
South	Karnataka	69.7	46	-23.7
	Tamil Nadu	81.2	67.5	-13.7
	Kerala	93.9	63.1	-30.8

**Source:** International Institute of Population Sciences (IIPS). National Family Health Survey, India: Key Findings from NFHS-4 (2015-16)

There is large scale decline in the percentage of children receiving solid or semi-solid food and breast milk across all regions and states, barring a few exceptions showing improvement (Manipur, Nagaland, Chhattisgarh and West Bengal). In a dozen states (Haryana, Sikkim, Meghalaya, Assam, Mizoram, Arunachal Pradesh, Bihar, Jharkhand, Odisha, Karnataka, Tamil Nadu and Kerala) the decline is below the national average of 9.9%. Among the Empowered Action Group (EAG) or high focus states, Bihar (23.8%), Jharkhand (13%) and Odisha (10.5%) and Assam (10.2%) reported the greatest declines. The overall largest declines were reported from the southern states, ranging from 13% to 30% in Karnataka, Tamil Nadu and Kerala.

State level indicators in the current survey round point towards low rates of child feeding practices, both in states that have witnessed some of the greatest declines as well as those with improvements. Tamil Nadu and Kerala make up an exception to these low rates, where higher rates are observed despite an overall decline (Table 2).

**Table 2 - Child Feeding Practices in Key States, NFHS-4**

	Total children age 6-23 months receiving an adequate diet (%)	Children age 6-8 months receiving solid or semi-solid food and breast milk (%)	Breastfeeding children age 6-23 months receiving an adequate diet (%)	Non-breastfeeding children age 6-23 months receiving an adequate diet (%)
India	9.6	42.7	8.7	14.3
Bihar	7.5	30.7	7.3	9.2

	Total children age 6-23 months receiving an adequate diet (%)	Children age 6-8 months receiving solid or semi-solid food and breast milk (%)	Breastfeeding children age 6-23 months receiving an adequate diet (%)	Non-breastfeeding children age 6-23 months receiving an adequate diet (%)
Jharkhand	7.2	47.2	7.2	7.1
Madhya Pradesh	6.6	38.1	6.9	4.8
Chhattisgarh	10.9	53.8	11.1	8.4
Odisha	8.5	54.9	8.9	5.0
Rajasthan	3.4	30.1	3.4	3.7
Assam	8.9	49.9	8.7	10.8
Uttar Pradesh	5.3	32.6	5.3	5.3
Karnataka	8.2	46.0	5.8	14.4
Kerala	21.4	63.1	21.3	22.3
Tamil Nadu	30.7	67.5	21.4	47.1
Maharashtra	6.5	43.3	5.3	12.2
Gujarat	5.2	49.4	5.8	2.8

**Source:** International Institute of Population Sciences (IIPS). National Family Health Survey, India: Key Findings from NFHS-4 (2015-16)

States with high levels of chronic poverty and repeated cycles of male migration have poorer IYCF indicators. In households with multiple migration cycles, left-behind children are gaining recognition as a new and unique vulnerable group facing the consequences of early initiation, contributing to inadequacy in breastfeeding and low quality of complementary feeding (Chaturvedi, 2016). The growing number of male migrants and episodes of migration have led to feminization of agriculture and waged labour, with consequent challenges for childcare and feeding. These challenges are more pertinent in households where children are left in the care of elder siblings, as previously discussed. Over-burdened women have limited time for the gathering of green vegetables, fruits or tubers from commons or cooking food separately for children, who, subsequently, eat a diet which is cooked for the adult family members and not tailored to their unique needs (Desai and Banerji, 2008; Chaand and Dasgupta 2017). Health worker-based interventions and advocacy for behavioural change, including the ICDS, have a limited impact in rapidly transitioning societies, where men and women make profound adjustments to preferences, ideas and beliefs with consequences for health. The lack of maternity protection and support mandates are nested within larger food insecure environments (chronic, transitory or cycles) that need to be recognized as entitlement failures and addressed urgently in a social justice framework (Dasgupta et al, 2018).



Drawing upon the current literature, the study proposed the following conceptual model to gain an in-depth understanding of the potential pathways and processes that shape IYCF practices in Banswara, Rajasthan.

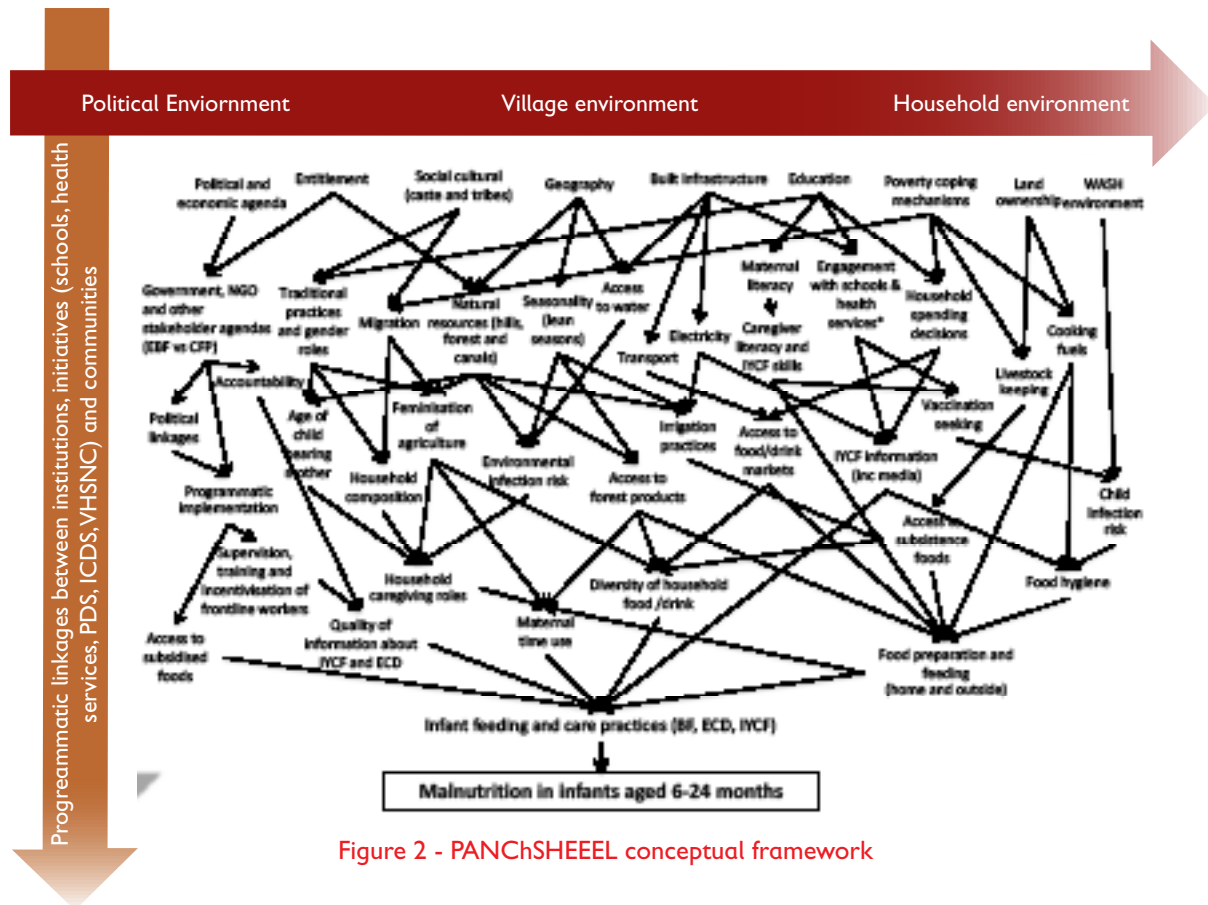


Figure 2 - PANChSHEEL conceptual framework





# Chapter 2 Community Engagement

## Selection of Community Researchers

### Purpose

The continuum of involvement from community members, a holistic viewpoint of the settings context and a balance of power between researchers and participants was central to the participatory approach employed throughout the research process. In particular, Community Researchers had a key role in engaging with the Community Champions, who in turn helped establish linkages with the Community Members and improve networks between schools, FLWs and villages.

The purpose of the selection process for Community Researchers was to identify potential candidates who could engage actively in project activities. Community Researchers were adult members of the study population, who understood the village context and social networks, affording special insight about their communities and environment to the study. They may be viewed as local experts with knowledge of social influences within the study and as local gatekeepers that enabled the research team to approach potential participants in a culturally sensitive way. Furthermore, they had a key role in engaging with the local community, helping the research team to build linkages within the village community for further engagement.

### Process

Two **Community Researchers** (one from Ghatol and Kushalgarh blocks) were recruited to help steer the project across the various phases of the project period. The criteria for recruitment included individuals who were educated, had previous field experience in Banswara district and were conversant with both 'Hindi' and 'Wagdi' languages, keeping in view the main language of communication in nine study villages being 'Wagdi'. For this role, the Save the Children team from the Rajasthan State Office identified two individuals from Ghatol and Kushalgarh who previously worked with them on a different project. Since their engagement in the previous project was satisfactory and they were local to the study blocks of Ghatol and Kushalgarh, they were recruited on contractual basis during Phase 1 of the study.

Additionally, we also recruited two female Community Researchers for a short term during the data collection phase, for conducting the quantitative household survey, particularly for executing the questionnaire on IYCF practices. This decision was made ad hoc, as it was felt that having one-to-one interaction with mothers on breastfeeding and complementary feeding could be sensitive, and having mothers would be more comfortable responding to the questionnaire if executed by female Community Researchers.

## Capacity Building of Community Researchers

### Purpose

As discussed in the previous chapter, the aim of the project was to co-design a socio-culturally appropriate, tailored, innovative and integrated cross sector HEEE Nutrition package<sup>4</sup> to support optimal IYCF practices in the 6 to 24 months age group children in rural India, with active participation from the Community Wing (Community Researchers, Community Champions and Community Members, School Teachers and FLWs).

<sup>4</sup>An interdisciplinary HEEE intervention package, based on this formative research, to facilitate the introduction of nutritionally-adequate and safe complementary (solid) foods at 6 months together with continued breastfeeding up to 2 years of age or beyond.

Community Researchers had a crucial role throughout the study period, from selection of community champions to data collection and co-designing the intervention package. Therefore, special attention was given to building their capacity through rigorous training based on the stage of the study.

## Process

Capacity building of Community Researchers involved combined informal and formal training techniques as well as on-job training support. Four selected Community Researchers (Two male Community Researchers and additional two female Community Researchers recruited during HH survey) and district program in-charge Field Officer from Save the Children were trained through class-room training for two days on how to administer the **household survey tool** by one of the Co-Investigators (Dr. Hanimi Reddy), in Banswara, in December 2017. This was followed by two days of field practice in non-program villages. Field practice was followed by de-briefing in the field, at the end of each day of field practice. Other than explaining how to administer each & every question of the tool, the investigators were informed of the procedures for taking 'verbal consent' from both the head of the household as well as from the eligible mother. Male Community Researchers were trained to administer HEEE sections of the household survey tool<sup>5</sup>, while female Community Researchers were trained to administer IYCF sections of the tool. Only female Community Researchers and Field Officer were trained on how to administer the Time Use Survey Tool<sup>6</sup>, using sub-sample of mothers recruited for the household survey. Classroom training on administering this tool was done for one day, followed by one day of field practice<sup>7</sup>.

Another workshop for training the Community Researchers on the principles of qualitative research, **qualitative data collection techniques** and data analysis was facilitated in the month of February 2018 at Wagdhara office in Banswara, by Dr. Rajib Dasgupta, Co-Investigator with support from Qualitative Researcher (Susrita Roy) and Nutrition Coordinator (Neha Santwani) from Save the Children and Researcher from IIT. The training agenda included overview of qualitative research and qualitative research methods, overview of the PANChSHEEEL study design and methodology and principles and steps of data analysis. The Community Researchers were also trained intensively on techniques and tools of conducting Focus Group Discussions (FGDs), Key Informant Interviews (KII), conducting Transect Walks and Broad Narrative Group Discussions. PowerPoint Presentations and handouts were used for training.

## Village Selection Process

Nine villages were selected in two stages. Stage 1 was selection of blocks followed by identification of potential villages using secondary data. Stage 2 was selection of study villages based on interaction with the community and key stakeholders. The process followed in both these stages is given in details in the next section.

### Stage 1: Block Selection and Village Shortlisting

The District Banswara lies on the Mahi River basin with the river flowing from North to South. Access to water creates a natural division of the district into two zones, based on the agricultural processes – canal or command area and non-canal or non-command area. During the first PANChSHEEEL Study international team meeting (26th April 2017), the study team decided to confine the study area to one block from each zone. This natural division also reflected on the different agricultural patterns of these two zones; one being canal fed and the other being rain fed. The rationale is that the canal area may have better access to water for productive use, better agricultural output and, hence, less migration.

'Ghatol', a canal block, was purposively selected for two reasons; its proximity to the district

5. Refer Toolkit for Household (HH) survey tool

6. Refer Toolkit for Time-Use survey tool

7. Refer Toolkit for Presentations and Hand-outs



Figure 3 - Map of Banswara

headquarters and prior Save the Children India (SCI) engagement in this block. 'Kushalgarh', a non-canal block, was selected as the second study block. Save the Children, Rajasthan were asked to use their local knowledge to make the decision between 'Sajjagarh' or 'Kushalgarh' blocks. They selected Kushalgarh because it was the most economically vulnerable: employment is limited to rain-fed agriculture, which is viable for three to four months only, leading to persistent out migration trends. The presence of a Malnutrition Treatment Centre at the Community Health Centre, Kushalgarh served as an additional indicator that nutrition of children in this block was poor. These two divergent blocks, therefore, provided an opportunity to capture the varying needs.

As per the study protocol, 9 rural villages formed the universe for the selection process. During the team meeting held on 26th April 2017, it was decided that, at least two villages from each block should be 'panchayat villages' (bigger villages catering to one or more revenue villages) and the remaining two to three villages from each block should be revenue villages<sup>8</sup> (Box 2). Panchayat villages were purposively selected as the Panchayat (local self-government) is the necessary platform to design community level interventions that'll engage diverse sectors, as all departments collaborate with and are accountable to it, to varying degrees. Village selection criteria were then developed by the HEE MRC Nutrition study team, as listed in Box 2.

Data on all these indicators were collected and

8. Census of India classifies villages into four categories – revenue village, forest village, un-inhabited village and 'other' village. A Revenue Village is a small administrative region in India, a village with defined borders. One revenue village may contain many hamlets. A gram panchayat (village council) is the grassroots-level of panchayati raj formalised local self-governance system in India at the village or small-town level, and has a sarpanch as its elected head.

**Box 2**  
**Selection Criteria**

**Inclusion criterion for selection of panchayats – two Panchayat per block**

- Have 2-3 villages of size >1000-1500
- Have one elementary school
- Have a fair price shop (PDS)

**Criteria for selection of villages – two to three from each Panchayat**

**Inclusion Criteria:**

- Villages with at least one elementary school
- villages with presence of ASHA and AWC and a primary school with presence of a teacher

**Exclusion criteria:**

- Villages with small population (<1000)
- Villages with livelihood intervention of SCI
- Villages with education interventions by any other NGO

collated by the Rajasthan SC team, using Census 2011 data and secondary sources (NGO partner collected data in Banswara). As per 2011 census, 104 villages from Ghatol block and 136 villages from Kushalgarh block were inhabited by 1,000 or more people. Out of these, 43 from Ghatol and 52 from Kushalgarh are 'Panchayat' villages. After excluding panchayats participating in an SC livelihood intervention, we were left with 27 panchayats from Ghatol and 52 from Kushalgarh blocks. Out of these, after excluding panchayats without elementary or primary school and fair price shop, we are left with 9 panchayats from Ghatol and seven from Kushalgarh block. All these 16 panchayats and the revenue villages within each of these panchayats were listed according to availability of Accredited Social Health Activist (ASHA) workers, Anganwadi centres (AWCs) and elementary school. A total of ten villages from Ghatol and eight villages from Kushalgarh block were found (Table 3) to fulfil both the exclusion and the inclusion criteria set by the HEEE MRC Nutrition study group, hence, formed the list of potential villages for the study.

**Table 3 - Identification of 16 Panchyats for village selection**

Details	Ghatol Block	Kushalgarh Block
<b>Total Villages In The Block As Per 2011 Census</b>	238	399
• Villages Excluded Because Of < 500 Population (Exclusion)	72	111
• Villages Excluded Because Of 500-999 Population (Exclusion)	62	152
<b>Remaining Villages With &gt;=1000 Population, Fits Inclusion Criteria</b>	104	136
• Number Of Panchayats (Panchayat Villages)	43	52
• Panchayats Remaining After Removing Livelihood Intervention Panchayats (Exclusion)	39	52
• Panchayats Remaining After Removing Sc Intervention Panchayats (Exclusion)	27	52
• Panchayats With Primary Schools (Inclusion)	15	13
• Panchayats With A Fair Price Shop (Pds) (Inclusion)	9	7

The 18 villages listed in Table 4 are spread over seven and three gram panchayats in Ghatol and Kushalgarh blocks respectively. Out of these 18 potential villages, six are panchayat head-quarter villages (rows highlighted in Table 4) while the remaining 13 are non-panchayat-head-quarter villages (Table 4).

**Table 4 - List of potential villages for the study and their population**

S. No	Block	Gram Panchayat	Name of Village	Total Population
1	Ghatol	Runjiya	Raghunath Singh ka Garha	1389
2	Ghatol	Dungariya	Dungariya	1416
3	Ghatol	Thikariya Chandrawat	Thikariya Chandrawat	1059
4	Ghatol	Thikariya Chandrawat	Karacgcheeya	1731
5	Ghatol	Goliya Wara	Jharkhania	1518
6	Ghatol	Senawasa	Udpura	1199
7	Ghatol	Senawasa	Garnawat	1094

S. No	Block	Gram Panchayat	Name of Village	Total Population
8	Ghatol	Badliya	Timba Gambri	1325
9	Ghatol	Badliya	Tantiya	1464
10	Ghatol	Mordinichali	Mordinichali	1834
11	Kushalgarh	Doongri para	Doongri para	1005
12	Kushalgarh	Doongri para	Devda Sath	1067
13	Kushalgarh	Doongri para	Nani Ka Sath	1033
14	Kushalgarh	Doongri para	Palakpara	1193
15	Kushalgarh	Kakanwani	Kakanwani	1130
16	Kushalgarh	Kakanwani	Bansri	1133
17	Kushalgarh	Bagaycha	Bagaycha	1067
18	Kushalgarh	Bagaycha	Khankhariya	1040

### Stage 2: Finalizing the nine villages from 18 potential villages

The research team visited each of the 18 potential villages before deciding upon the final nine. A three day field visit to Banswara was conducted by 11 team members from UCL, SCI, JNU and IIT between 5th and 7th September 2017. The research team divided into three field teams for feasibility; one team on the first day, two teams on the following two days (Table 5).

**Table 5 - Day-wise details of the villages covered during field visits**

Day & Date	No. of Villages Visited	Block	Names of the Village
Day 1: September 5	3	Ghatol	Timba Gambri, Tantiya and Nichali Mordi
Day 2: September 6	4	Kushalgarh	Devda Sath, Doongripada, Nani ka Sath and Palakpara
	2	Ghatol	Dungaria, Jharkania
Day 3: September 7	4	Kushalgarh	Kakanwani, Bansri, Bagaycha and Khankhariya
	5	Ghatol	Udpura, Garnawat, Khargachiya, Raghunath Singh ka Ghara, Tikaria

The following process was adopted in each of the village:

- Interaction with the Community**

The research team reviewed the social profile of each village and then spoke informally with members of the community, to understand the social profile of the village and relationships between social groups, status of health, nutrition, education, environment and engineering aspects such as access to water and sanitation services and finally, access to government services. The district team of Save the Children 2017



Community Meetings at Bansri, Kushalgarh on September 7,



India (SCI) had met the AWW and ASHA in all villages to inform them about the team's visit and they were able to assemble community members in the AWC in some villages. In other villages where such meetings could not be organised, the study team spoke to village members who were part of the School Management Committee as well as those who had come to the AWC for taking the nutrition supplements. Mostly women participated in these conversations. Only in one village the community representative was male School Management Committee member.



Meeting with school teacher, Dungariya, Ghatol on September 6, 2017

- **Interaction with the school teachers**

– Each of the team visited primary and some secondary schools to understand the relationship between school and community and to observe infrastructure or functionality, particularly relating to food, water and sanitation facilities. The responses of the teachers during the discussion were varied. While some of them actively answered the questions posed by the team and seemed more informed about the community, others were reluctant to respond due to their workload and interest.

- **Interaction with the Anganwadi workers, ASHA and Auxiliary Nurse Midwife (ANM)**

The team met and spoke with the Anganwadi Worker and ASHA in each village, typically at the Anganwadi centre. In some villages, the team also spoke with the ANM who had come to the AWC for immunization. The interaction with this section of respondents was largely focussed on the services that they provide and on their perceptions about feeding practices of the community. The issues for differential access by the vulnerable communities and the role of these workers to address those were one of the core focus in these conversations.



Meeting with AWW and ASHA at Nani Ka Sath, Kushalgarh on September 6, 2017



Meeting with government officials, Banswara, on September 8, 2017

- A **team meeting** was held on day four, to agree a consensus list of exclusion criteria (Table 6). Field teams discussed the villages that they had visited, against the exclusion criteria listed in Table 6. District officials from different government departments like Women and Child Development, Health, Sanitation, Agriculture as well as Non-government organizations working in Banswara were invited to the meeting and to input to the selection process. All the government

officials and Non-Governmental Organisation (NGO) partners present in the meeting appreciated the selection of the two blocks one from canal and other from non-canal zone. The list of selected villages were also shared with them. The purpose of engaging these stakeholders was to validate the data collected during the village selection process and make necessary revisions or contributions, based on their local experience and technical knowledge. Following this discussion, nine villages were identified from 18 potential villages.

**Table 6 - Justification of Village Selection criteria**

Criteria	Justification
<b>The school has two or less number of teachers/ few students</b>	This is an indicator of ‘readiness of the school’; the functionality of the school and the relationship of the school with the local community. The readiness of the schools were assessed from the number of teachers present as well as their interest in the study. The schools with only one or two teachers like in Bagyacha or those where the teachers seemed busy or disinterested in responding to the questions posed by the study team were excluded.
<b>Anganwadi centre is not attached to the school</b>	This is an indicator of the ‘readiness of the AWW’, including its linkages with the School and functionality of the AWC. Villages where the AWW and the School did not interact were excluded like Modi Nichali. Even those villages where the AWW was absent during the visit were not included like Timba Gambri. For the selected villages, the teachers shared that they monitor the service provided by the AWW and also contribute their time for the development of the AWC. The AWW from these villages also shared that they get timely support from the school teachers as and when required.
<b>Observed presence of, and interactions between, different social groups residing in that village</b>	The majority of the population in almost all villages were from the Scheduled Tribe (ST), which includes different social groups, and some Other Backward Class (OBC) were present in a few villages. These broad social categories were further divided in to sub sections, i.e. Bhagora and Sapora under ST, and Patedar, Patel and Rabari under OBC. Some villages like Modi Nichali in Ghatol and Nani ka Sath in Kushalgrah reported less interaction between the different social groups and were excluded. On the contrary, the mixed community groups of Udpuda had mobilised together to renovate their local school.

To document the village wise status on the three exclusion criteria a matrix was created. The matrix is a summary capturing the key observations relevant for only the exclusion criteria during the village selection exercise (Table 7).

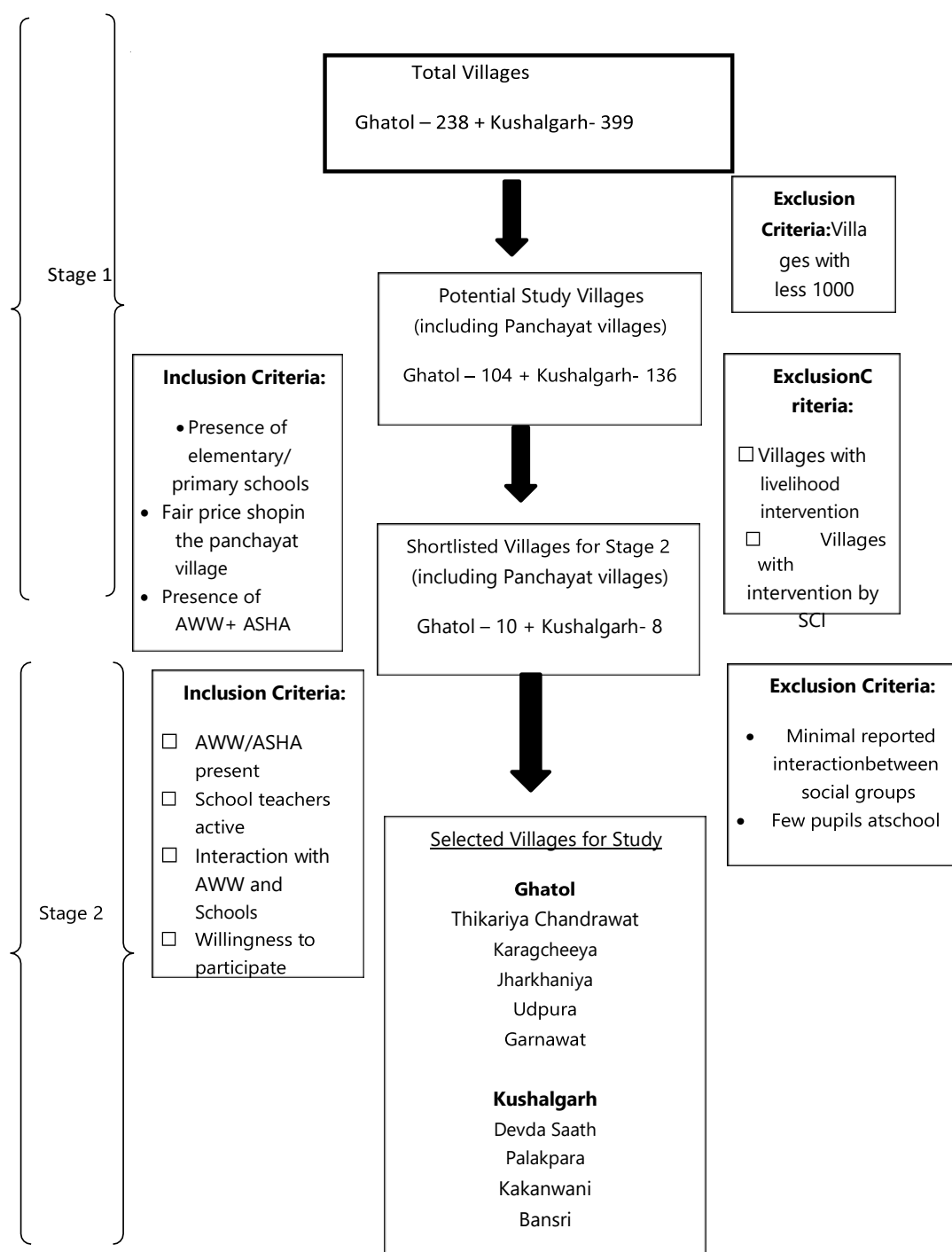
**Table 7 - Village Selection Matrix based on exclusion criteria  
(Shaded rows are the selected villages)**

S. No.	Gram Panchyat	Name of Potential Village	Functionality of the School (Y/N)	Functionality of AWC and linkages with Schools.	Interaction between different social groups.	Selection (Y/N)
<b>GHATOL</b>						
1	ROOJIYA	Rughnath Singh Ka Garha		AWW centre not linked to the school	only ST community in the village	No
2	DUNGARIYA	Dungariya	Only 1 para teacher who manages all 5 classes	AWW centre not linked to the school and seems to be not catering to entire village, but to houses in its vicinity	There is lack of social cohesion among the different social groups	No
3	THIKARIYA CHANDRAWAT	Thikariya Chandrawat				Yes
4	THIKARIYA CHANDRAWAT	Karagcheeya				Yes
5	GOLIYA WARA	Jharkhaniya				Yes
6	SENAWASA	Udpura				Yes
7	SENAWASA	Garnawat				Yes
8	BADLIYA	Timba Gamri	Elementary school functional	AWW not present	Residence separated by social groups. Lack of social cohesion	No
9	BADLIYA	Tatiya	Elementary school functional	AWW present but not much contact with School	community Economically better	No
10	MORDINICHALI	Morinichali	Majority of the students from that village went to private school. School was used by other adjoining village.	AWW not present	Lack of social cohesion	No



S. No.	Gram Panchyat	Name of Potential Village	Functionality of the School (Y/N)	Functionality of AWC and linkages with Schools.	Interaction between different social groups.	Selection (Y/N)
<b>KUSHALGARH</b>						
11	DOONGRI PARA	Doongri Para	The primary section was very small	AWW centre not linked to the school		No
12	DOONGRI PARA	Devda Saath				Yes
13	DOONGRI PARA	Nani Ka Sath	School was 1-5th with no links with AWW	AWW and School are not linked with each other	There is lack of social cohesion among the different social groups	No
14	DOONGRI PARA	Palakpara				Yes
15	KANANWANI	Kakanwani				Yes
16	KANANWANI	Bansri				Yes
17	BAGAYCHA	Bagaycha	Single teacher school with recent appointment	AWW did not seem functional, the ASHA was not present		No
18	BAGAYCHA	Khankhariya	1 teacher present who is a recent appointee	AWW did not seem functional	Lack of social cohesion	No

## Consort Diagram for selection of Study Villages



## Limitations and Challenges

### The selection process had the following challenges

- 1. Language** – The interaction with the community as well the service providers was done in Hindi. While the functionaries were able to understand and respond in Hindi, the community could understand the questions but they replied in their own language. Sometimes the community was also unable to understand the question. In such cases the team had to rely on the ANM, AWW and ASHA to translate the question as well as the answers. As a result, the information could be influenced by their translators' views. To overcome this limitation, we purposively recruited field

investigators from Banswara, with familiarity to participating villages and had local knowledge and the ability to speak local dialects.

2. Absence of functionaries – During the first day of the field visit due to some official reasons the schools were shut and in some cases we could not meet the Anganwadi Workers. In other days, when the schools were open all the teachers were not available. Hence, the views of all the stakeholders was not available. Also meeting with other key stakeholders like the elected representatives, School Management Committee members or other community leaders of the village was not possible.
3. Limited time - All the data collected was based on the observation and interactions held in a limited time of two hours per village. As a result it was difficult to capture the actual practices and issues.

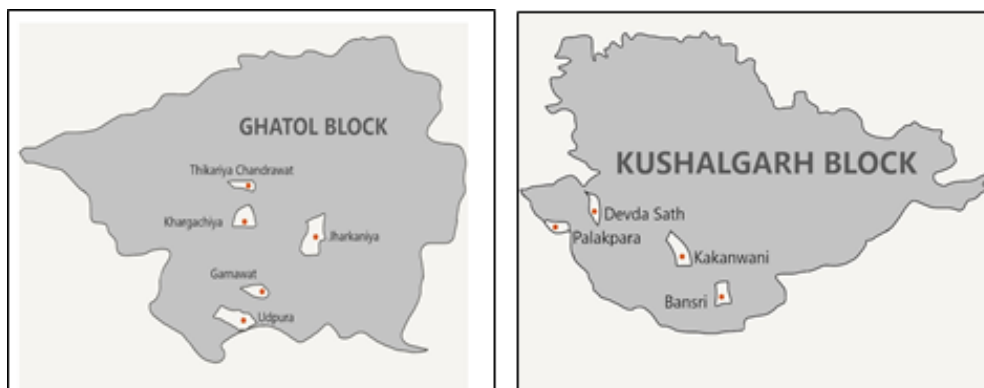


Figure 4 - Maps of the two study Block with selected villages

## Role of Community Researchers in Formative Research

### Purpose

The purpose of the participatory approach used in this study, was to ground intervention design in a rigorous, in-depth understanding of the socio-economic context of the community. This was derived from an iterative in-depth mixed-methods research that encompassed – the formative phase where qualitative and quantitative data was collected intensively from the community with the help of Community Researchers.

### Process

The 'Community Wing' had a crucial role to play during each stage of the study. The role of Community Researchers during the formative phase has been described below:

#### Community Profiling and Social Mapping<sup>9</sup> :

The process of Community Profiling and Social Mapping was conducted in each of the nine villages with the help of Community Researchers. The Community Researchers also helped in conducting the economic profiling of the community through the household survey using the Kuppusswamy Scale<sup>10</sup>. The purpose of this process was capturing basic information on the profile of population, nature of services and also environmental condition of the village. Besides, it also helped in building a rapport between the Save the Children India field team and the community, as well as with the key stakeholders. This laid the foundation for the Focus Group Discussion and Key Informant Interviews to be conducted later. The household survey was administered during January-March 2018, by separate teams in Ghatol and Kushalgarh blocks. Time-use survey data was collected during February-March 2018.

9. Refer Methodology Section in Report on Formative Research

10. Kuppusswamy scale is the most commonly used scale for determining the socio-economic status of any family. It takes into account, three parameters into account, namely, education, occupation, and income of the family.

### **Transect Walk, Broad Narrative Discussion and Seasonal Calendar<sup>9</sup>:**

The purpose of the transect walk exercise was to walk through the nine villages systematically to cover different sections of the village and capture key physical features, environmental resources and gaps in environmental resourcing. Using a combination of observation and photographic evidence, key environmental features and challenges were captured. During the transect walk, informal discussions with residents were also carried out using a semi-structured broad narrative sheet. The discussions enabled the team to have in-depth discussions about environmental challenges and draw out issues which may impact feeding practices for caregivers. Shocks and stresses to local communities also have a detrimental impact on the ability to harness environmental resources and contribute to improved feeding practices. In addition to the broad narrative discussions, the team recorded seasonal variations to income, expenditure and flood risk to note periods of high and low stress. Members of IIT Delhi and Save the Children jointly carried out the transect walks with the help of Community Researchers. The information collated through transect walks and broad narrative was documented with notes, photographs and audio recordings of the broad narrative available. Key environmental features and barriers have been identified through this exercise. The information fed into subsequent data triangulation process and analysis. The transect walk revealed a gap in policy and aspirations and actual implementation on the ground. For example, a large proportion of households did not have toilets and practiced open defecation despite the study villages being covered under the Swachh Bharat Abhiyan\*. A seasonal calendar for each of the nine villages was developed in PowerPoint format highlighting periods of water scarcity and high/low rainfall.

### **Qualitative data collection<sup>9</sup>:**

Qualitative data was collected using two methods—Key Informant Interviews (KIs) and Focus Group Discussions (FGDs). The focus was on collecting data on the infant and young child feeding practices in the village along with identifying the challenges of proper IYCF. The pretested FGD guide and KI tool was transacted by the Community Researchers, because they had command over the local dialect. As per the protocol, two FGDs had to be conducted in each village, one with mothers of children below two years and second with grandmothers. Total of 18 FGDs (nine villages; two FGDs per village) were expected. However, in one village the two groups were merged due to unavailability of respondents (e.g. 17 FGDs were facilitated by Community Researchers). Thus, the Community Researchers played a crucial role in obtaining information from FGDs with 67 mothers, 58 paternal grandmothers and 49 key respondents across nine villages from the two selected blocks of Ghatol and Kushalgarh of Banswara between January and April 2018.

## **Respondent Validation**

Respondent validation, an important element of mixed-methods research, involved Community Champions responding to initial data that was collected by Community Researchers. They helped to check the accuracy of the initial data gathered and were asked to comment on whether the emerging results can be recognized as a fair and reasonable reflection of the situation as they understand it. This was done during a workshop with Community Champions facilitated by Community Researchers under the guidance of Save the Children staff in the month of September 2018.

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\*Swachh Bharat Abhiyan (SBA) or Swachh Bharat Mission (SBM) is a nation-wide campaign in India for the period 2014 to 2019 that aims to clean up the streets, roads and infrastructure of India's cities, towns, and rural areas. The campaign's official name is in Hindi and translates to "Clean India Mission" in English. The objectives of Swachh Bharat include eliminating open defecation through the construction of household-owned and community-owned toilets and establishing an accountable mechanism of monitoring toilet use.

# Chapter 3 Methodology



The protocol to meet the study objectives described in Chapter 1 included two phases of data collection. Study Phase 1 consisted of social mapping, and community profiling, a transect walk and broad narrative discussions to strengthen the understanding of the local communities and their relationships with factors which may impact childhood malnutrition. Study Phase 2 built upon the findings from Phase 1 with a quantitative household survey, a time use survey, KIIs and FGDs. Descriptions of each method are described below under four sections – purpose, process, output and challenges.

## Study Phase 1

Phase 1 of the study was devoted to developing an overall overview of the study villages. The following steps were adopted for this process:

- Social mapping and community profiling;
- Transect walk, broad narrative discussion and seasonal income calendar.

### Social Mapping and Community Profiling

#### Purpose

Phase 1 of the study commenced following the systematic selection of the nine study villages from Ghatol (n=5) and Kushalgarh (n=4), the two blocks within Banswara. Following this, community profiling and social mapping were conducted in each of the nine villages. The time constraints and drawbacks associated with collecting economic information at the community level led to the decision to conduct economic profiling through the household survey using the Kuppuswamy Scale<sup>11</sup>. The purpose of Phase 1 was to capture basic information on the village populations to develop village profiles and improve understanding of the nature of services and the environmental conditions in the villages. In addition, it also helped to build a rapport between the SCI field team, the community and other key stakeholders.

Developing these connections was deemed necessary as they formed the foundation for conducting household survey, FGDs and KIIs to be conducted later



11. The Kuppuswamy Scale estimates socioeconomic status through indicators such as educational status, occupational status and overall aggregate income.

## Process

The process of community profiling included the SCI field team conducting several informal interactions with important stakeholders like AWW, ASHA, School Teacher and PRI-members, as well as vital community members, using a semi-structured tool (see details of tool in Annexure 1). A participatory approach was adopted for preparing a social map of the villages. First, the SCI field team met some village representatives who were important members of each village community, such as the elected village representative, school teachers and other local leaders who were considered to be well connected and could help in organising the meetings. These village representatives were requested to identify residents of the village who could be participants in the social mapping exercise. Between 10 and 15 adult participants from each village, mostly men who were willing to take part in the process, assembled in a central location of the village, such as in a school or temple. Next, the purpose and process of creating a social map was explained by Field Investigators from SCI who were conversant in the local language. In order to facilitate the mapping process, Field Investigators explained the purpose of drawing a village map and worked with the participants to draw a map representing their village. The process started with drawing the concrete or pucca roads in the village followed by the foot-roads or kuccha roads. Next the important institutions (e.g. AWC, government schools, temples, community centres as well as the houses, water sources (e.g. hand pumps, water bodies, canal and streamlets, and forest areas of the villages) were marked. Over the course of the process, the participants interacted with each other, discussed and debated to reach a consensus for the final map. The first map was prepared by the participants mostly on chart paper with pens; wherever the meeting was held at a school, the participants drew the map on the schools' black boards.

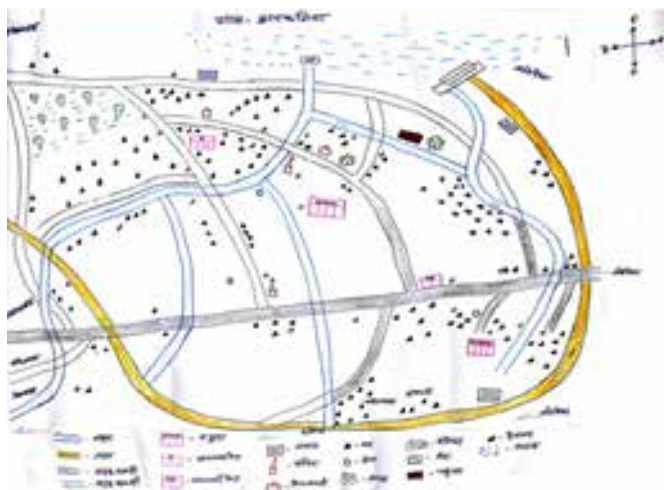


Figure 5 - Social mapping process at Jharkaniya



Figure 6 - Digitised Social map of Jharkaniya

Once the participants completed preparation of the social maps, the SCI field team copied them onto paper and asked the village representatives to validate the maps. These maps were then processed by the national SCI team using computer software to improve the photo quality. This process was conducted for each of the nine study villages.

In addition to social mapping, the SCI field team and national team conducted walk throughs of each village to observe the community and conduct further validation of the maps drawn by the participants. This exercise also helped the field team

members to familiarize themselves further with the villages. The entire process took three to four days per village (n=9) depending on the availability of the participants and the stakeholders.



## Output

Based on the community profiling and social mapping exercise, a note on each of the nine villages was prepared. The following details were collected for each village:

- Habitation and demographic characteristics - Number of households and social groups residing in the village;
- Government Institutions – Number of AWCs and school, including their location and nature of infrastructure;
- Source of water – Source of drinking water as well as water for household chores and irrigation;
- Shops – Number of shops and the products that are sold in these shops;
- Solar Panel – Number of solar panels, their location and their usage;
- Electricity – Number of households who have access to electricity and the pattern of electricity use;
- Toilets – Number of households toilets and public toilets (if any);
- Transportation – Location of bus stand, availability of buses and other modes of public transport.

## Challenges and Limitations

The conduct of the social mapping exercises and village walk throughs were met with a number of challenges and limitations, including:

1. It was very difficult to encourage women to participate in the social mapping exercise, which reduced the proportion of females involved in the exercise.
2. Participants were not familiar with mapping, so initially nobody was prepared to start the exercise and the facilitator had to encourage participants. The participation was limited to the most influential members like school teachers, elected representatives and educated males.
3. It was observed that villagers were focusing more on their own perceived challenges rather than informing about available resources in the village.
4. Due to the mapping exercise taking place during the peak of the agricultural season, most village members were occupied in the field, contributing to lower participation.

### **Transect Walk, Broad Narrative Discussion and Seasonal Income Calendar**

#### Purpose

The purpose of the transect walk exercise was to walk around the nine villages and systematically cover different sections of each village to capture key physical features, environmental resources and gaps in environmental resources. Members of IIT Delhi and SCI jointly carried out the transect walks.

Using a combination of observational and photographic evidence, key environmental features and challenges were captured during transect walks. During each walk, informal discussions with residents were also carried out using a semi-structured broad narrative sheet. The discussions allowed the team to discuss environmental challenges in-depth and draw out issues which may impact feeding practices for caregivers. In addition to the broad narrative discussions,



Figure 7 - Transect walk at Jharkaniya village, Ghatol Block

the also team recorded community members' reported seasonal variations to income, expenditure and flood risk to note periods of high and low stress.

## Process

The transect walks, broad narrative group discussions and the seasonal calendar exercise were carried out jointly for each village. The nine villages were covered in three different phases of the study in January (Gharnavat, Udhapura, Jharakania ), February (Kharghachia and Thikaria Chandravat), and April (Bansari ,Kakanwani, Palakpar, Devdasath village).

In each village, the IIT Delhi and SCI team members used the maps generated from the social mapping exercise to subdivide the village into roughly three or four locations, depending on physical layout and features. This ensured that the team would cover various sections of the village and also include remote hamlets that may otherwise have been overlooked. The team would then walk through the three or four sub-divided sections of the village.

Observational and visual evidence during the transect walk was documented using a combination of notes and photographs. The team discussed and noted environmental features (e.g. canals, wells, drains, toilets, water supply, electricity poles, crops, land use type, construction activity if any, location of key buildings, soil characteristics, energy sources for cooking, flooding, road conditions and solid waste management) and challenges associated with environmental resources and services.

During the transect walks, the team would informally sit down with between four and six residents who were willing to share their observations and findings with the team. A semi-structured broad narrative discussion guide (Annexure 2 was used as a prompt to ensure the broader implications of environmental resources and potential impact on feeding practise were covered. Typically, in each village two to three such discussions took place based on willingness of residents to participate. In the same groups, discussions regarding months of high and low incomes, expenditure and flooding were conducted which enabled the team to complete a seasonal calendar (Annexure 3).

## Outputs

**From the above activities the team developed the following outputs:**

- The information collated through transect walks and broad narrative discussions was documented with notes, photographs and audio recordings. Key environmental features and barriers were identified through this exercise. The information feeds into subsequent data triangulation and linked thematically for key findings.
- The transect walk revealed a gap between policy and aspirations and actual on the ground implementation. For example, a large proportion of households did not have toilets and practised open defecation even though the study villages were covered under the Swachh Bharat Abhiyan.
- Seasonal income calendars for each of the nine villages have been developed in power point format.

## Challenges and Limitations

The conduct of the transect walks, broad narrative discussions and seasonal income calendars were met with a number of challenges and limitations, including:

- The data collection process took longer than anticipated.
- Even though the team tried to engage with both male and female participants, the participants of the broad narrative discussion were predominantly male. Women either did not feel empowered to contribute or were busy with household chores.
- Only one team member was familiar with the local dialect, Wagdi, which has resulted in challenges for translation and transcription of data from the discussions.



## Study Phase 2

Phase 2 of the study was primarily devoted to the collection of primary data to identify the local challenges, drivers, resources, opportunities and needs during a child's first 6 to 24 months of life. The data collect focused on identifying factors at individual, household, community and environmental level. Secondly, this study phase endeavored to map out the established linkages between identified opportunities and challenges in order to determine how needs can be addressed. Data was collected systematically through a household survey, followed by KIIs and FDGs with mothers and grandmothers of children under 2 years of age. Broad narrative discussions with male community members and transect walks were also conducted in each village. A mixed methods approach was adopted to ensure completeness of the information.

### Quantitative Data Collection: Household Survey and Time Use Survey

The quantitative component of study phase 2 the data collection consisted of :

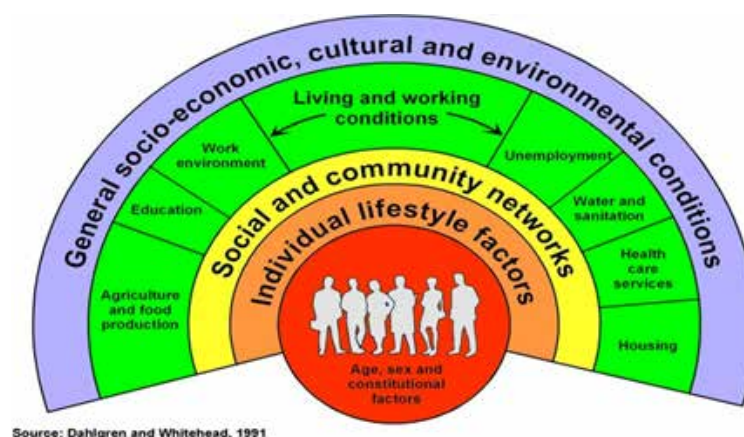
1. Household survey: Survey of households with a child aged 0 to 24 months on the day of the survey;
2. Time use survey: How mothers spent their 24 hours of the previous day between 18 different types of activities.

### Purpose

As part of the **'quantitative'** component of the study, a household survey was conducted to collect quantitative data on household demographics and household access of the households to four inter-disciplinary HEEE topics and associations to IYCF practices. Demographic and HEEE data was obtained by interviews with each head of the household while IYCF information was retrieved by interviewing mothers of the children under two years of age on the day of the survey in each program block (Ghatol & Kushalgarh). The **'time use survey'** was conducted in order to understand use of time for mothers of children under two year of age, including time spent on child care. Respondents to the time use survey were a sub-sample from the households covered under the main 'household survey' (around 20% of mothers from the household survey participated). The mothers who participated in the time use survey were asked about their time use patterns on 18 types of primary or secondary activities and estimated time spent on respective activities over a 24 hours period.

### Processes

The present study was driven by a socio-ecological model addressing IYCF at the individual, family, community and policy levels (Figure 8), allowing for the collection of diverse data on IYCF knowledge and practices while assessing their linkages to the HEEE domains.



Source: Dahlgren and Whitehead, 1991

Figure 8 – Socio-ecological Model

The household survey was proposed in the nine study villages, by covering 50 households per village. The use of 450 households as the sample size in this study was informed by several considerations, the primary consideration being the need to generate indicators on IYCF practices at block level. The objective of conducting household survey was to generate indicators for HEEE practices and socio-demographic characteristics with a sound precision. In view of the study's data needs, the obvious choice of respondents to gather IYCF information was 'care taker of the child (e.g. the mother of the child)'. The head of the household was the key informant for HEEE domains and socio-demographic details of household members. Thus, data collection needs for the household survey were met by interviewing the following two respondents:

- Head of the household for HEEE related knowledge & practices;
- Mother of under two year old child for IYCF related knowledge and practices.

Although the protocol initially proposed to cover 50 households per village, taking into account total population of nine study villages (11,124 as per 2011 census) and the Crude Birth Rate (CBR) of the district (30.0 per 1000 population in 2012-2013). Under this sampling strategy, around 600 children under two years of age were expected to be included across the nine villages. As the population size of these nine program villages ranged between 1,059 and 1,731, the child population also expected to vary according to the population size of village. Following a meeting in January 2018 in Banswara, the study group decided to complete an enumeration of all the households with children 0 to 24 months of age in each of the nine program villages. This decision was based on the non-responses rate, migration patterns and the population size.

During this January 2018 meeting in Banswara, the study group also decided to cover a sub-sample of around 20% of the households (n=90) as part of the time use survey. The 20% sub sample for the time use survey was selected randomly, from each of the nine program villages. The mothers who provided consent to take part in the time use survey were questioned about their participation in 18 different activities over the 24 hours preceding the survey. A separate data collection tool was developed for collecting time use data and household survey data.

The household survey involved questions that were tried and tested by other cross-sectional surveys in India whenever possible. The structured household survey was translated from English to Hindi in order to be easily delivered to the village communities. The translated survey was pre-tested in non-study villages from Ghatol and Kushalgarh blocks in October 2017. Based on the findings of the pre-testing in real field conditions, some questions were revised in consultation with thematic investigators, and the household survey tool was finalised for data collection by December 2017. The head of household was respondent for four modules of the household survey tool, while mother of the child under two years of age was respondent for two sections of the same tool which related directly to the care of the child. Consent for interview was initially obtained from the head of the household, followed by a separate consent obtained from mothers of children under two years of age. Only after obtaining informed consent from both respondents was the household survey tool administered in Wagdi language by field researchers familiar with both Wagdi and Hindi. Household survey data was collected using pen and paper.

The following information was obtained from the head of the household through the household survey (Annexure 4):

- Basic demographic information for each member of the household, including:
  - sex;
  - age;
  - relationship to the head of the household;

- marital status;
- main occupation;
- migration for work in last one year (if aged >18 years);
- ownership of Aadhar card;
- details of the children under two years of age;
- details of primary care giver of each child.
- Socio-economic status of the household using the modified Kuppuswamy's socio-economic scale, 2016<sup>12</sup>,
- For all the members of the household aged five years or above, literacy profile in terms of literate or not; ever attended school; highest standard completed; and details of school drop-out;
- Type of school/college; location of the school/college; and distance of the school from the house only for members of the household aged 5 to 18 years;
- The household questionnaire also collected other socio-economic characteristics of the household including:
  - religion;
  - caste;
  - land availability;
  - live stock;
  - milk production & sale;
  - health care seeking practices;
  - details of kitchen-garden;
  - source of drinking and regular consumption water;
  - toilet use details;
  - type of fuel used for cooking and lighting;
  - type of floor & roof & walls of house;
  - flooding of house;
  - solid waste management.

The following information was obtained from the mother with a child aged less than two years of age:

- Confirmation of age of the child;
- child ever breastfed or not;
- exclusive breast feeding (if child aged more than 6 months);
- breastfed yesterday or not;
- whether baby fed with other fluids (not breastmilk) or not;
- details of different type of liquids consumed by child yesterday & number of times consumed ;

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12. Mahesh R et al. (2017). Kuppuswamy's Socio-Economic Status Scale: A Revision of Occupational and Income Criteria for 2016. Indian J Pediatr (Jan 2017). 84(1).

- Types of solid/semi-solid food consumed by child in last 24 hours;
- accessibility of child to AWC;
- Most recent recorded weight of child;  
Immunization details (if child is aged 12 to 23 months).;
- clinical symptoms of diarrhoea and pneumonia during the past two weeks & care seeking if signs are present.

The following information was obtained from the mother with a child aged less than two years by using the 'Time Use' survey tool (Annexure 5):

- The Time Use survey is based on the Women's Empowerment in Agriculture Index (WEAI) time diary and was used to simultaneously collect information on time for both primary and secondary activities across the following 18 types of activities
  - **Personal activities:** sleeping and resting, eating and drinking, personal care, school (including homework);
  - **Market work:** work as employed, own business work, farming/livestock;
  - **Unpaid (household) work:** shopping/getting service, weaving/sewing/textile care, cooking, domestic work (including finding wood and water), care for children/adults/elderly, traveling/commuting;
  - **Leisure:** watching TV/listening to radio/reading, exercising, social activities and hobbies, religious activities.

The time use survey collected information on the above activities over the day before the time use survey was delivered. If the day before survey was not an 'average' day, in the case of an unusual family event, for example, then another recent day was considered.

**Ethical approval:** The PANChSHEEL Project protocol, including qualitative and quantitative data collection methods and relevant tools were shared with the UCL ethics committee in the United Kingdom and with Sigma-IRB in India. Both ethics committees provided ethical clearance for collecting the data using the mixed method study design.

**Recruitment and Training of survey team:** In light of gender sensitivity of respondents for the household survey and the main language of communication in nine study villages being Wagdi, we recruited two male and two female investigators, who are conversant in both Hindi and Wagdi and had previous household survey experience in Banswara district. The four investigators engaged for the study were trained through class-room teaching for two days on how to administer the household survey tool. The training was provided in Banswara by one of the co-investigators on December 2017. This training was followed by a two-day field practice in a village which was not part of the program. The field practice was followed by a de-briefing in the field, at the end of each day. Aside from explaining how to administer every question of the survey, the investigators were introduced to the procedures for taking verbal consent from both the head of the household as well as the eligible mother. Interviewers explained the procedures and purpose of the study and confidentiality of the data to eligible respondents. Interviews were conducted only when both the head of the household and eligible mother provided verbal consent for the interview. Male investigators delivered in the HEEE sections of the household survey tool to heads of household, while female investigators administered IYCF sections of the tool to mothers.

**Survey Implementation:** The nine program villages were selected purposively. The process of listing the mothers of children under two years of age in each of these villages was a huge exercise in itself which requires considerable human effort and time resources. It was decided by the study team not to conduct house listing and mapping to identify eligible households/mothers with a child

under the age of two years. The group decided to rely on the list of lactating mothers and the list of children, maintained by Anganwadi workers (AWWs) in the nine program villages to identify eligible households. However, in two of the nine program villages, there were more than one AWW. In these two villages all the AWWs were contacted for a list of mothers who have a child under the age of two years. By collating information, a comprehensive list of eligible households/mothers was prepared in these two villages.

In each of the nine program villages, the list of households with eligible mothers provided by AWWs was validated using the list of deliveries from the past two years, maintained by ASHA of the respective village. In villages with fewer than 40 or more than 60 eligible households/mothers, the list was further verified using a snow-ball technique, which involved asking each identified eligible women to provide details of other eligible women she is aware of in her vicinity. Once the final list of eligible households/mothers from each village was prepared, each of the households listed was contacted to inquire about their willingness to participate in the household survey. Each listed house was contacted a maximum of three times about participation in the household survey.

Data for the household survey was collected between January and March 2018 by separate teams in Ghatol and Kushalgarh blocks. Each team consisted of one female interviewer and one male interviewer. Only female investigators and the district program in-charge were trained on how to administer the time use survey tool, using a sub-sample of mothers recruited for the household survey. Female investigators were assigned the task of administering this tool, while district program in-charge recorded the information in the prescribed tool, using pen and paper. The district in-charge also supervised the data collection activities in terms of ensuring time-lines, providing logistical support to the survey teams and ensuring the data collected from the field was of high quality. The district program in-charge was oriented on how to monitor data quality to ensure consistency and completeness. As part of the quality assurance mechanism, the district program in-charge was in the field during entire period of the data collection, in either of the two blocks. Co-investigators visited the field sites thrice during the three months of data collection between February and March 2018 to monitor the progress of the household survey and to guide the team on how to ensure sufficient data quality.



Figure 9 - Household survey with mother with mother

**Data entry processes:** Completed household survey tools were received on a weekly basis by the district program in-charge, who stored the completed tools in a locked cup-board. A weekly meeting of all the investigators under the leadership of the district program in-charge was held at the district head-quarter to review the quality, completeness and consistency of the completed tools. The software used for the data-entry of household and time use survey tools was outsourced to Microware Computing & Consulting Pvt. Ltd. The finalized data-entry program was shared with the district program in-charge, for the data entry to be performed in Banswara. Two data entry operators were trained on how to enter the data and the district program in-charge monitored the data entry operations on a daily basis. Digitally entered data was stored in a password protected computer by the district program in-charge. Only co-investigators had access to soft data of the household survey, after removing identification details. Using the data entry software developed by Microware, the data entry operators entered household survey data in MS-Access. The time use survey data was entered in Ms-Excel and this data was then matched with household data.

**Analysis:** Entered household survey data was converted into two different MS-Excel files with a unique identification code:

1. population related information of 2,626 individuals;
2. household and IYCF information from 445 households. Cleaned datasets of household and time use surveys were analysed using SPSS-Version 20.

## Outputs

Soft data on knowledge and practices across HEEE domains and IYCF practices of the 445 surveyed households with under two year old children was spread across nine villages of two blocks. The demographic details of 2,626 individuals from these 445 households (Table 8), is the direct outcome from the household survey. Soft data on time use from a sub-set of 85 mothers with at least one child under the age of two years is the direct outcome of the time use survey (Table 8).

**Table 8**

**Number of households and population covered by household and time use surveys**

	Household survey		Mothers covered as part of Time use survey
	Eligible mothers/HHs	Total Population	
<b>Ghatol Block</b>	217	1177	48
<b>GARNAWAT</b>	45	262	10
<b>JHARKANIYA</b>	50	291	7
<b>UDPURA</b>	38	203	11
<b>KARAGCHEEYA</b>	49	236	10
<b>THIKARIYA CHANDRAWAT</b>	35	185	10
<b>Kushalgarh block</b>	228	1411	37
<b>DEVDA SATH</b>	62	360	9
<b>PALAKPARA</b>	68	417	10
<b>KAKANWANI</b>	49	319	12
<b>BANSRI</b>	49	315	6
<b>Total (from two blocks)</b>	445	2626	85

The indirect outcome of the household survey is a list of thematic areas on which there is concurrence and contradiction between the findings of the qualitative and quantitative surveys. The themes on which there was concurrence between the two surveys directly fed into the intervention design model, while the themes which featured contradictions required further probing in order to enhance the richness of the entire dataset.

## Main finding included:

1. How mothers of 0 to 24 month old child spend their 24-hour time on 18 activities including time spent on caring of child is the other outcome.
2. The majority of participants in the time use study were aged 20 to 29 years. In the majority of the sample the primary caregivers had no education in Kushalgarh, compared to a more even



distribution shown in the household survey sample. This is the most likely explanation for the difference observed between time use and household survey methodologies.

## Challenges and Limitations

The primary data collection phase of the study was met with several challenges and limitations, including:

- Finding investigators, particularly female investigators with survey experience and knowledge of Hindi and Wagdi was the initial challenge faced by the study team.
- As per the study protocol, 50 households with eligible mothers were required from each of the nine study villages. However, with respect to varying village population sizes and the decision to include mothers who have children at the age of less than two years as eligible household/mother, the study team had to complete the enumeration of all the households/mothers with children under the age of two. As a result of this eligibility criterion, the study found a varied number of eligible households/mothers in the nine program villages, ranging from as low as 35 households in a village to as high as 68 households in other villages. Thus, this compromised the initial plan to cover 50 households per village.
- For identifying households with eligible mothers, listing and mapping of villages could have been an ideal procedure. However, in view of time and human resource constraints for identifying eligible households/mothers with under two old children, the study relied on the lists prepared by AWWs and/or ASHAs. Thus, the eligible households covered by this survey were dependent upon the coverage and completeness of the list of lactating mothers, child population and past two year deliveries prepared by AWW/ASHA.
- As the respondents for the household survey and the respondents of the qualitative survey were different, there could be no concurrence between the findings of the two surveys on some common themes. The domains where there is no concurrence between the two methods of data collection may require further exploration for clarification.
- As the household survey was conducted between January and March, 2018 (period of lean agricultural activity) the IYCF practices of this study could have been influenced by the seasonality of the survey.
- In Ghatol block, almost all of the household heads were males, while in the Kushalgarh block, around one-third head of the household heads were female, as these women migrated for work. This variation may reflect differences in migration patterns between the two blocks.
- Data collection for household and time use surveys has started at two different time points. Due to this limitation, the timing of data collection for the time use survey and household survey are different for some households.
- We could not retrieve exact dates of birth for a small percentage of children (1-2%), forcing us to calculate the child's age based on estimated information on their month and year of birth.
- The household survey schedule was printed in Hindi, while administration of the tool was done in Wagdi. Furthermore, open ended responses for some questions were recorded in Hindi, although responses were provided in Wagdi. During the initial phase of data collection, switching between the languages led to delays in administering the tool, and took longer than one hour as specified in the consent form.
- The time use survey is not representative of the household survey since the sample was much smaller and consisted of only 85 female participants. The time use survey included women between 18 and 49 years of age. Furthermore, female literacy rates show different patterns to male rates and literacy levels were slightly higher in Kushalgarh (50%) as compared to Ghatol (47%).

- The data from the time use survey can easily be skewed due to the small sample size. Importantly, the most educated age group of 10 to 19 year olds are largely omitted from the time use study, with the exception of four 18 to 19 year olds.

## Qualitative Data: Key Informant Interview and Focus Group Discussion

### Purpose

For the purpose of this study, qualitative data was collected using two methods: KIIs and FGDs. First, a matrix of the respondent category and the number of respondents in each category was prepared and this directed the qualitative data collection process (Table 9).

**Table 9 - List of Qualitative Respondents**

Respondent Category	Location	Tool No	Type of Interaction	Remarks
1 ANM	Village/ SC	1	KII	If the village has more than one ANM then the most senior shall be interviewed.
2 ASHA	Village	1	KII	If the village has more than one ASHA or
3.AWW	Village	1	KII	AWW, both shall be interviewed, as they will represent different geographic and social strata of the villages. Villages of this size are generally unlikely to have more than one ASHA/AWW; but given that these are tribal areas that have different population norms we may expect to find more than one.
4. School Teacher	Village	2	KII	All villages have one school each – either primary (till 8th) or elementary (till 5th). In Udpura there are two schools; the primary school is chosen for data collection. The Principal or the most senior teacher shall be interviewed.
5. Sarpanch/ Ward Panch	Village/ Panchayat office	3	KII	In all villages the ward/local panch shall be interviewed [Tool 3A]. If any village has a Sarpanch as its local member, then s/he shall be interviewed.
6. Mothers and Grand mothers	Village	4	FGD	As per the protocol there are two FGDs in each village; However, it has been decided to do only one FGD per village.

### Processes

**Training of Research Team:** The two-day training from the research team was conducted on the 21st and 22nd February 2018 by a co-Investigator in Waghdhara, Banswara. The topics covered in the training were principles of qualitative research, methods of qualitative research with a special focus on interview and group discussions and introduction to data analysis. The research team included three members from the Banswara field team and two members from the SCI national team. This team was supported by the Principle Investigator and the Co-Principle Investigator of the study.



Figure 10 - FGD in Garnawat, Ghatol



After selection of the candidates for transcription and translation, a one day training was organised at Waghdhara to orient the candidates about the transcription process and build their skills as required for the task.

**Data Collection:** The first round of data collection started between January 7th and 9th when the UCL team, JNU and IIT took part in the data collection along with the SCI team, including the field team and the team from **NSO**. Over the course of the three days of data collection, 52 KIIs and 17 FGDs were organised across three villages of Ghatol. This exercise helped to develop a better idea around the tools and the processes that need to be followed to ensure sufficient data quality. Based on this exercise, it was decided that three days of field work would be required in each village. The next phase of data collection continued for 19 days across four months.

**Focus Group Discussions:** Conduct of the FGDs was a team effort in which the SCI field team, especially the field investigators from Ghatol and Kushalgarh informed the AWW and ASHA about the process and, with their help, organised the FGDs. A multi-pronged approach was adopted for the selection of participants. The AWW, ASHA or other community-based worker was entrusted to identify mothers and grandmothers with children between 0 and 24 months of age who were literate and conversational and invited them to the meeting. The field investigators were also engaged in the selection of mothers and grandmothers whom they identified during the course of the household survey or the time use survey. The date, time and place of the meetings were decided in consultation with the frontline health workers.

The pretested FGD guide (Annexure 6) was transacted by SCI field investigators, because they had command of the local dialect. At the FGD onset, participants were informed about the project and the purpose of data collection. The consent form was explained to them and verbal consent was taken. Written consent was difficult to record as many of the participants, especially the grandmothers, were not able to write their names. The members of the research team were involved in drawing a socio-gram and making sure that all members are participating equally, noting the opening lines of the responses and making logistic arrangements for refreshments to be provided after the FGDs. The notes of the FGDs were directly translated from Wagdi to Hindi or English.

**Sample:** As per the protocol, two FGDs had to be conducted in each village, one with mothers of children below two years and second with grandmothers. A total of 18 FGDs (nine villages with two FGDs per village) were expected. However, in one village the two groups were merged due to unavailability of respondents. Thus, 17 FGDs were conducted in total. While the protocol suggested 10 to 12 members in each group, in practice only a few FGDs were conducted with as many people. Most groups were comprised of 6 to 7 members. The researchers reported difficulty in managing the FGDs with 10 to 12 members both from the point of administering the tool as well as documenting the responses. Arranging for 10 to 12. FGD members was also a time consuming process. Based on this when the group size was reduced, it was seen that the researchers were able to conduct the FGD better and elicit detailed responses with participation of all participants. This was also evident from the socio-gram drawn during the process of FGDs. All participants in the mothers groups had children below the age of two years, some of them also had an elder school-going child. Similarly all grandmothers had a grandchild under two years of age. The recruitment of the participants was done based on the availability and willingness to participate. A total of 67 mothers and 58 grandmothers took part in the FGD (Table 10).

**Table 10 - Village wise number of participants of FGDs**

Name of the village	Number of Participants		
	Mothers	Grandmothers	Total
<b>Ghatol</b>			
Garnawat (Joint Group)	5	4	9
Udpura/ Shankarpura	9	6	15
Jharkaniya	7	6	13
Khargachiya	7	7	14
Thikariya Chandrawat	8	7	15
<b>Kushalgarh</b>			
Devdasath	8	6	14
Palakpara	7	8	15
Kakanwani	8	8	16
Bansri	8	6	14
Total	67	58	125

**Key informant interviews (KIIs):**

Most of the KIIs were done by a team from the SCI national office with support of the field team using the pretested interview guides for respective categories (Annexure 7-9). Each interview was conducted by a team of two researchers, one who translated the tool while the other took notes of the conversation. The SCI field team had already established rapport with the key informants in all the nine villages during the community profiling exercise. They had also informed them about the interview and prior appointment was taken. This facilitated a smooth completion of the interview process.



Figure 11 - KII with AWW, Palakpara, Kaushalgarh

**Sample:** The KIIs were conducted with ANM, ASHA, AWW, School Teachers and Ward Panchs. The total number of respondents in the KIIs, as per protocol, was 45 (nine villages and five KIIs per village). However, the actual number of KIIs conducted was 52. The difference in numbers of KIIs is because the number of Key Informants in each village varied (e.g. two villages in each block had two AWC, hence two ASHA and AWW were interviewed). Out of 52 KIIs, only 49 could be conducted because some of the respondents were unavailable even after repeated visits. The details of the respondents for KII are reported in Table 11.

**Table 11 - Respondent category wise Key Informants**

Key Informant Category	Ghatol –		Kushalgarh –		Remarks
	5 villages		4 villages		
	Actual	Completed	Actual	Completed	
ANM	4	4	4	3	Two villages- Garnawat and Udpura in Ghatol have same ANM. ANM of Bansri did not give time even after repeated contacts.
AWW	7	7	6	6	Two villages in Ghatol and Kushalgarh have two AWC, hence two AWW and ASHA.
ASHA	7	7	6	6	Same as above
School Teacher	5	5	4	4	Principal/ Senior teacher in all schools where the AWC is co-located or the teachers are given the responsibility of monitoring were interviewed, except Thikariya Chandrawat. No order for co-location of AWC has been issued.
Ward Panch	5	4	4	3	The WP of Thikariya Chandrawat in Ghatol and Devdasath, Kushalgarh was not available
Total	28	27	24	22	

Written consent was taken from the key informants, as they were mostly literate. The interview process started after the consent was obtained from the respondent. While all the respondents were comfortable with the use of voice recorders in course of the interview, few of them did not agree to photography or videography.

Beside the above mentioned respondents, three other respondents were also interviewed:

- Child Development Project Officer, Ghatol who is responsible for functioning of the AWC, AWW and ASHA;
- Principal Education Officer, Goliawara who is responsible for the executing the co-location order of AWC;
- Senior Correspondent of a State level Newspaper stationed in Banswara.

**Data Analysis:** The data collected each day was transferred from the recording device to the encrypted laptop of the SCI Nodal Person. The research team also met at the end of each day to share key observations and reflections about the data based on notes taken during the KIIs and FGDs. This helped the team to arrive at some common themes. The transcription and translation

of the quotes were also completed and assigned based on emerging themes. The qualitative data analysis software, IQDAS was also used for the data analysis process.

## Outputs

First the key themes were extracted from all the interviews and FGDs separately for the two blocks, Ghatol and Kushalgarh, and then reanalysed to assess the similarities and differences in perception across respondent categories. The data triangulation was done at two levels, across respondent categories and methods for both blocks separately. The study started with a conceptual framework generated from the literature review on under nutrition among children and IYCF practices. This framework covered diverse themes including gender, poverty, access to health and nutritional care services. The data from the study were coded on the basis of broad themes as well as emerging themes.

## Challenges and Limitations

**The study has the following challenges:**

1. Respondents, especially the community members, were not always giving the complete and correct information. Hence the same data had to be collected from multiple sources;
2. The availability of the Key informants was found to be an issue. Similarly the availability of mothers for the FGDs was also limited due to agricultural activities and other household chores. To address this, multiple attempts were made to organise the KIs and FGDs;
3. Only two members in the team were well versed with the Wagdi language, so the FGDs were mostly conducted by them. However, in course of the field work the other members also developed a working knowledge of the language which helped in further probing during the interview or FGD.
4. Since only two team members knew the local dialect, there were issues in capturing feedback from participants when the FGD was conducted with more than 12 participants and the participants lost interest in the activity. To resolve this, the size of the group was reduced to eight participants;
5. The distance of Kushalgarh from Banswara is 80 kilometres which takes almost two hours but the villages were further. To minimise the effort and time spent in travel, the team stayed in a modest accommodation Kushalgarh while the data collection in the block was on going;
6. Selection bias of participants of FGDs due to:
  - Active role of AWW and ASHA in the selection, so only those with whom they have a good rapport could be identified;
  - FGDs mostly held in the AWC, so only those residents who are residing closer to the AWC took part. Those families staying far away from the AWC were excluded.
  - The AWW and ASHA could have tutored the participants about the process and hence it influenced the information given by them.

# Chapter 4 Village Profile



The nine study villages were spread across two blocks of Banswara district of Rajasthan, Ghatol and Kushalgarh. The villages were selected based on selection criterion. The demographic profile of each of these villages, the agriculture pattern and living conditions are discussed in detail in this section.

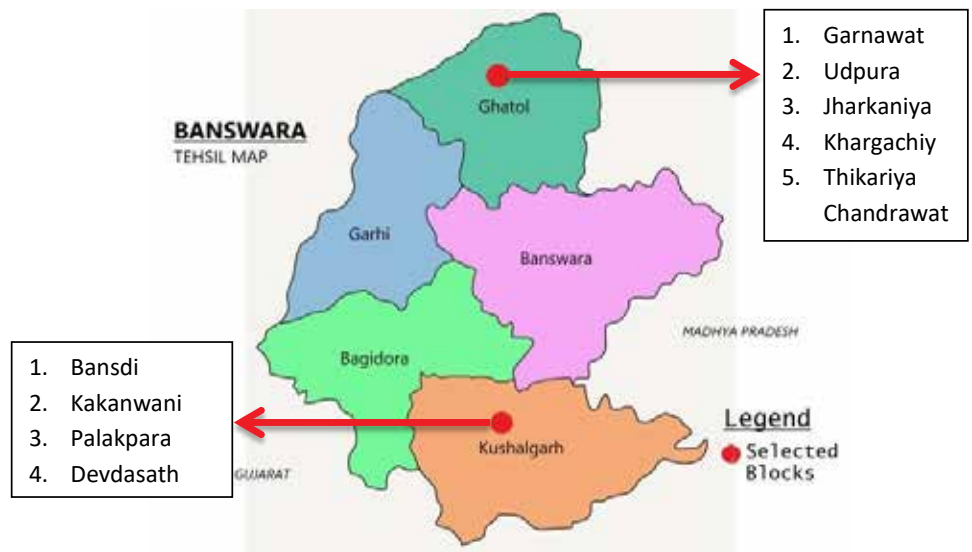


Figure 12 - Banswara map of study villages

## VILLAGE 1: GARNAWAT, GRAM PANCHAYAT SENAWASA, GHATOL BLOCK

**Population (as per Census 2011):** 1,094

**Number of Household (as per Census 2011):** 241

**Social Groups:** Only ST – Ninama, VADERI, DAMOR, CHAREL

**Number of Hamlets:** Two (Dungaripada and Uplapada)

**Government Institutions:** Two Anganwadi Centre; two schools (one primary and one elementary)

**Water source:** 15 wells, 9 tube well and 35 hand pump available for drinking water. For other use there is a canal, pond and streamlet.

**Shops:** Three small shops available within the village.

**Solar Panel:** One solar panel and 40 solar lights are available at household level in the village.

**Electricity:** Around 130 household have facility of electricity.

**Toilets:** There are not public toilets in the village.

**Bus stand:** There is no bus stand available within the village to avail bus services people go to NH113 main road which is two km away from the village.

## Childcare and Nutrition

Formative research in the village revealed that the mother takes care of the children and when she is out the father, grandfather or grandmother will look after the children. The villagers have mixed feelings about their interactions with the Anganwadi Worker and the ASHA. Some women respondents believe that their interactions with the workers are not good, ANM do not visit the village houses. Families have good interaction with the ASHA.

Health problems reportedly occur mainly in August, September and October. High rates of illness also coincide with the Chumasa<sup>13</sup>, namely due to cough, fever and pneumonia. Women in the village were aware of malnutrition since Anganwadi workers inform the women of each family.

## School

An upper primary school is located north of the village and an operational Anganwadi Centre is west of the village. Interactions between the Anganwadi and school are good. Anganwadi workers go to schools and meetings are held continuously on the school premises.

There is a field located inside the school, therefore children can play sports. No playground area is available to the 1st to 5th grade classes, but all other facilities are available. In winter, classes are conducted outside of the schools. The school is closed for summer holidays between May and June.

There is no fee for the primary and higher secondary education in Indian governmental schools. Tables and chairs are not available in the schools, instead tatpatti<sup>14</sup> is used. Interaction is good between the villagers and school teachers. Parent-teacher interaction is also good within the schools. Water is available throughout the year in the school.

The condition of the school building is generally good, but if problems occur which make the buildings unusable the teachers teach the class in open ground. Meetings are held once in a month between villagers and school teachers. They discuss student performance and ensure students are not absent for long stretches of time. When students are absent, teachers made home visits to find out the reason for non-attendance.

## Water

In the village of Gharnavat, all areas are connected not only to the road but also to an irrigation system. Water from the Mahi River and some local ponds are used for irrigation throughout the season. There is no shortage of drinking water, even in the summer seasons. There is water shortage in May, June and July for irrigation water.

Many functional hand-pumps are provided to the villagers by government officials. Hand-pumps are sufficient to meet the needs of the villagers. Maximum consumption of water occurs in May, June and July. Flooding occurs in August and July from water overflow into the canal from the Mahi dam. There is no bore well, so water in the village is supplied through tube wells, piped water or tap.

## Mid-day Meal

Government schools have multiple facilities for cooking mid-day meals. The mid-day meal is judged to be of good quality.

## Migration and Livelihood

Local migration from Ghatol, Banswara to the Mayuri Mill (a factory near the village) occurs. Some

13. Rainy season.

14. Mats used for sitting on the floor.

family members also migrate to foreign countries such as Kuwait, and other states of India such as Gujarat and Madhya Pradesh for jobs and employment. However, entire families do not migrate. Generally male members of the family are the ones to migrate for work. Only few households migrated with all family members. Migrated people return back to their village during the farming season, between two and sometimes five times each year. In the absence of their husbands, women complete field work.

## Agriculture

Water from the Mahi dam canal is used as a main source of irrigation water. In very few cases, water pumps are used for irrigation. No machinery is used for irrigation. There is no government programme for irrigation activities. The main crops grown locally are corn/maize, soybean, wheat and even rice in some areas. Ladyfingers and potatoes are also grown; however, corn, wheat, maize and barley are the main food sources.

Modern agricultural facilities and practices are available. Tractors are used in addition to manual ploughing by bulls and other animals. Villagers harvest their crop yields in March and October. Villagers go in to the field most often in the evening time. Landholding capacity is two to five Bighas per family. Villagers' incomes are at their maximum in March and April, while minimum incomes occur in July and August due to cycles of crop yields.

## Cooking Fuel

Very few people have LPG connection via the Ujjawala scheme. Due to its high cost, many villagers cannot afford the LPG connection. In some places they use Kerosene. Wood is also used for cooking purposes. In Chumasa, upla<sup>15</sup> is used for cooking. Villagers do not sell wheat or corn and only use it for food purposes.

## Power Supply

Villagers have access to electricity for approximately ten hours each day. The highest electricity consumption occurs in April, May and June. In some places, villagers do not use electricity.

## Livestock

The livestock in the village are buffalos, cows and goats for milking purpose. Buffalos are the main source of milk. Few villagers sell the milk they collected, and it is mainly consumed by the villagers.

## Local resources

The village is well connected by roads. In most places, the road condition is good. Canals are made of bricks and cement. However, in some locations, villagers have made temporary solutions for the drainage pattern in the village. Flooding occurs in August and July.

## Spending behaviour

Maximum expenditure occurs in March and April and during marriage seasons. February and January are the months with least expenditure. The most crowded months for the market are March, August, September and October.

## Sanitation and Handwashing

Toilet facilities are present; however, villagers often use toilet structures as their store houses for

15. Flammable cakes made with cow dung.



cooking fuel and fire wood. All toilet facilities are government funded and some villagers build toilets in order to receive governmental funding. Very few are using toilets for their intended purpose and most people prefer to practice open defecation in the fields.

Villagers use soil and ash for handwashing. The use of soap for handwashing and bathing is rare.

## Information and Media

The village perception is that the government officials and panchayat are helpful in providing information. Depending on their economic condition, some villagers have television sets. Only four to five televisions are available in the village; mainly villagers use radios for information.

## Housing

Houses are mainly kutchha<sup>16</sup> with few pucca<sup>17</sup> houses. Many houses are constructed with the soil and

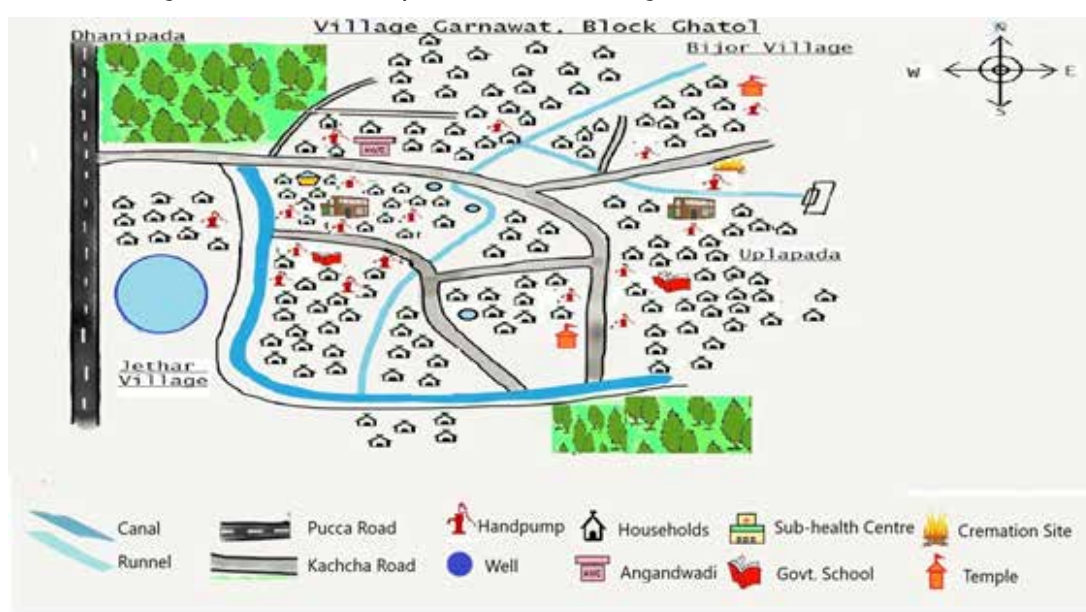


Figure 13 - Village Garnawat (Ghatol Block)

the base of house is made up of rocky material. Housing conditions are not good; houses are made up of soil and not constructed with bricks.

## Village 2: Jharkaniya, Gram Panchayat: Goliyawada, Ghatol Block

**Population (as per Census 2011):** 1,518

**Number of Household (as per Census 2011):** 326

**Social Groups:** Only ST – Bargot, Ninama, Katara, Damor

**Number of Hamlets:** N/A

**Government Institutions:** One Anganwadi Centre; two schools (one primary and one elementary)

**Water source:** Three wells, three tube well and 17 hand pumps available for drinking water for other use there is a canal and streamlet.

**Shops:** Three small shops available within the village.

16. Houses made from mud, thatch, or other low-quality materials are called kutchha houses.

17. Houses made with high quality materials throughout, including the floor, roof, and exterior walls, are called pucca houses.



**Solar Panel:** No solar panels, but three to four solar lights are available in the village

**Electricity:** Around 50 households have electricity.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is no bus stand available in the village to avail bus services people go to Ghatol main road which is four kilometres km away from the village.

## Childcare and Nutrition

Usually, when the mother is out of the house, the grandmother takes care of the children. Both the mothers and grandmothers take care of the children but sometimes the father or another family member takes care of the children.

The interaction between ASHA workers and villagers, as well as with Anganwadi workers is good. Discussions between ASHA and villagers includes the topics of vaccination and feeding practices, specially relating to child nutrition. The Anganwadi Center is open and operational during the Chumasa. Children are able to use the facilities to study. Anganwadi workers visit the villagers four to five times a month.

In Chumasa, illnesses such as cold and cough are common. Vaccinations are routinely given to the children to prevent illnesses. There are a number of cases related to malnutrition and the resultant complications are evident, with children sometimes feeling weak because they are not receiving proper nutrition. Diseases are caused mainly in August and September, with villagers facing health problems in September, October and December.

## School

The school's toilets are in poor condition. The hand pump in the school has a filter and serves as a source of drinking water. In addition to this, fluoride may also be a potential problem. Villagers have good relationships with teachers and the government schools have multiple facilities. Tables and chairs are only available in some classrooms. Playgrounds are available in schools.

Only a few children opt for private schools rather than free public schooling as they have high fees and only some villagers can afford them.

Teacher-parent interaction is very good in the village. Interaction between teachers and parents occurs in Hindi and in the local language, Wagdi. For private schools, villagers are required to pay fees in July. Time is occasionally a barrier for parents interacting with teachers.

## Water

Canal water from the Mahi river is used for irrigation and some ponds are also available for sanitation and drinking purposes. A small canal is available, although this is not sufficient to meet the demand of villagers. The canal is made up of bricks and cemented material, but in some places, villagers have created drainage patterns themselves for irrigation. Two to three times each year, water is not available for the irrigation purposes.

Many hand pumps are available in the village and are sufficient to meet the needs of the villagers. The pond is used as a water facility and source of drinking water. However, the pond is not sufficient to meet the demands of villagers for irrigation and drinking water. No bore wells are present in the village and there is no piped water supply offered by the government.

Occasionally flooding occurs between August and September. Water shortages occur in the summers. Water is consumed the most in June; in some areas of the village, water shortage is also faced in June. No tube well is present for sanitation purposes.

## Lunch at government school

Government schools provide high quality mid-day meals.

## Migration and Livelihood

Migration occurs frequently in the village. Some family members migrate but entire families rarely migrate. Through the MNAREGA scheme villagers receive employment and all families have job cards. People migrate to the other side of the state; local migration occurs throughout the year due to unfavorable economic conditions. Few villagers also migrate to outside the country to Kuwait. In the absence of their male family members, women take up work in the field.

## Agriculture

Villagers use maize as a main food source. Main crops are maize, wheat, corn and soybean. The landholding pattern in the village is between two to five bighas per family. Villagers harvest crops in March, April and October. The crops grown annually meet the demands of villagers only and are not sold. Villagers receive 200 Rupees as a daily wage.

Villagers receive highest incomes in March, April, October and November and lowest income in January, June and July. Agriculture is dependent on bulls for ploughing their fields.

## Cooking Fuel

Wood is used as fuel for cooking purposes and few villagers have LPG connection got through the Ujjawala scheme. Family with LPG connections are not allowed to take kerosene, which creates a challenging dynamic as they are cut off of subsidized kerosene. This in turn reduces the uptake of gas connections under the Ujjawala scheme. This is expensive to connect to and villagers need to pay lump sum fees. Hence, most households still use wood for cooking.

Villagers go in to the field most often in the evening time. A daily food item eaten in the village is chapatti with dal and some vegetables. Villagers receive kerosene facilitates and kerosene is supplied by the gram panchayat. The village now has 20 to 25 gas connections. In making Makka roti (corn chapatti), gas is used. Around 20% of families in the village report eating fish.

## Lighting and Electricity

Electricity is available two to three hours per day. Electricity is provided but in Chumasa electricity access is only available for two hours.

## Livestock

Villagers use cows, buffaloes and goats for their milk purposes. Mainly cows are used, but some villagers have goats.

## Local resources

In the village of Jharkania, road and transport conditions are good, and all the parts of the village are well connected to the road. Some areas are waterlogged and are therefore breeding grounds for mosquitoes. Due to high water levels, there is potential for ground water contamination. During the formative data collection, the playground was water logged due to poor drainage and possible leakages.

Solar energy also exists in the village. There is a Memoranda of Understanding (MOU) between solar panel company and Government for this scheme. No flooding occurs during Chumasa. No local market is available so villagers must go to the market at Ghatol block headquarters. The local pond does not receive proper maintenance. Markets experience large numbers of shoppers and become extremely busy in February, July and October.

## Sanitation and Handwashing

All villagers have toilet facilities; however, they are used as store houses for wood. Pits available in the village are used as toilets. Soil is used for hand washing purposes and soap is used for bathing purposes.

## Information and Media

News and entertainment are available through television sets available in few households and mostly via radio.

## Housing

Houses are mainly built with bricks and an electricity pole is located near the pucca house in the village. Rooftop conditions are not good, as they are not constructed with bricks. Many houses are constructed through financing from Pradhan Mantri Aawas Yojna scheme which costs Rs 145,000 per house. Some houses were also built through the Indira Awas Yojna scheme.

## Village 3: Khargachiya, Gram Panchayat: Thikariya



Figure 14 - Village Jharkhaniya (Ghatol Block)

## Chandrawat, Ghatol Block

**Population (as per Census 2011): 1,731**

**Number of Household (as per Census 2011): 370**

**Social Groups:** ST, SC, OBC and General community residing in the village

**Number of Hamlets:** N/A

**Government Institutions:** One Anganwadi Centre; four schools (one primary, one secondary Sanskrit, and two private)

**Water source:** 13 wells, 30 Tube well and 25 to 30 hand pumps available for drinking water. For other use there is a canal and Nala which connected to entire village.

**Shops:** Three small shops available within the village.

**Solar Panel:** solar lights are available in the village.

**Electricity:** Around 280 households have electricity.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is no bus stand available within the village to avail bus services people go to NH113 main road which is 0.5 km away from the village.

## Childcare and Nutrition

In the majority of cases, mothers had the responsibility of taking care of the children. When she is not at home, the father, grandfather or grandmother look after the children. Families had good relationships with the Aaganwadi and ASHA workers. The ANM visits the houses in the village on Saturdays and frequently discusses the health of children and new born infants with mothers. Other health related discussions, particularly those regarding child nutrition and feeding, with the ASHA workers are good. The Anganwadi Centre is operational during the Chumasa.

Health problems mainly occur in August, September, October and December, with skin diseases occurring during the Chumasa. The underlining reason for these health problems could be due to the use of contaminated water, which increases the risk of developing skin diseases. Children aged two to three years face health problems related to malnutrition.

## School

As observed during the transect walk, an upper primary school is located north of the village and an operational Aaganwadi Center is located west of the village. The government school does not have adequate facilities, lacking functional tables, chairs and toilets. There is no playground inside the school premises. However, the parent-teacher interaction is optimal.

Schools are closed for vacation in May and July. Private school fees are paid in July each year.

## Water

The Mahi river is used for irrigation via a canal system. The villagers are dependent upon the Mahi river for irrigation and drinking water is supplied through hand-pumps. There is one pond which is used for irrigation in the village, but it is not maintained properly. There is no access to water or the Mahi canal for residents near Kuldhari.

Hand pumps, which were built through government schemes, sufficiently meet drinking water demands of the villagers. There is no bore well or government supply of water or tap water. Flooding occurs during August due to the Mahi dam overflowing into the canals. Maximum water is consumed during April, May and June. There are no water shortages except during May, June and July when there is scarcity of irrigation water in the canal. Water shortages are experienced mostly in the summer. All villagers have hand pump facilities in to their houses.

## Mid-day meal services

The government schools provide a good quality mid-day meal.

## Migration and Livelihood

Local migration occurs as people move to the other side of the state. Some family members also move to foreign countries such as Kuwait as well as other Indian states. However, not all family members migrate. Local migration occurs within the state and other states of India, such as Gujarat and Madhya Pradesh. In the absence of their husbands, some women take up field work. Families have their job card; they are employed as part of the MNAREGA scheme.

## Agriculture

The villagers have poor economic standing. Maize and barley are the main food sources. The main crops are wheat, soybean and corn. Crops are harvested in March, April and October. Wheat and corn are not sold by the villagers and are only used for food purposes. However, corn is most commonly consumed by villagers. Lady fingers and potato are also consumed daily. The landholding capacity is two to eight Bigha per family. Agriculture is dependent on bulls and tractors, which are used for ploughing fields. New techniques are being used for irrigation.

Villagers' maximum income is earned in April and May, while the lowest income periods are the months of January and June. Despite the average high income in May, there is variation in income between households and for some it is the lowest income month. Most expenditures occur during March and April, which coincides with village weddings. The least expenditures are in February and January.

## Cooking Fuel

Some people have access to LPG through the Ujjwala scheme, yet wood is used mainly for cooking purposes. Some families have an LPG card for the assessment of gas connection. LPG connections are present, but not in all households. Kerosene is supplied sufficiently by the gram panchayat.

## Lighting and Electricity

Energy and electricity are consumed more in May and June. Electricity is only available for between five and six hours daily.

## Livestock

Villagers use cows and goats for milking purposes.

## Local resources

The village is well connected by the road. Ponds are visible and dense forest area is found east of the village. Soil colour differs from brown to black depending on the place due to the topography of Rajasthan. Particularly in Banswara, this can be seen due to the rain and water holding capacity of the city. Canals are made of bricks and cemented material, however in some places, the villagers constructed temporary solutions for the drainage pattern of the village.

## Sanitation and Handwashing

The toilets are often repurposed as store houses. In addition to this, some villagers have toilet bowls which they received in the government schemes, but they are not used as toilet facilities. All villagers have access to toilet facilities, but they are not functional. No tube well is available for sanitation purposes.

Soil and ash is used for hand washing purposes, whereas soap is used for bathing. Generally housing conditions are good. In some places, only ash is used for cleaning purposes. In other places, soap is also used for handwashing purposes.

## Information and Media

For entertainment, 10 to 13 televisions are available in the villages and radios are found in all houses.

## Housing

In the village of Kharghachia, all houses are made of soil and bricks. Most places consist of Kutcha Makan<sup>18</sup>. Houses are mainly built with brick and soil. Housing conditions are average. Many houses are constructed with soil and the base of the houses is made of rock material.



Figure 15 - Village Dungripada, Ghatol Block

## Village 4: Thikariya Chandrawat, Gram Panchayat Thikariya Chandrawat, (Ghatol Block)

**Population (as per Census 2011):** 1,059

**Number of Household (as per Census 2011):** 233

**Social Groups:** ST, SC, OBC and General community residing in the village.

**Number of Hamlets:** N/A

**Government Institutions:** One Anganwadi Centre; one secondary school<sup>19</sup>

**Water source:** five wells, nine tube wells and 24 hand pumps available for drinking water for other use there is a canal and streamlet.

**Shops:** Three small shops available within the village.

18. Flammable cakes made with cow dung.

19. The education system in India categorized into three levels; elementary/primary, secondary and tertiary levels. The elementary school which is also sometimes refers as primary school starts with grade 1 to grade 8. The secondary school refers to grade 9 to 12 and tertiary starts after 12th class.



**Solar Panel:** No solar panels.

**Electricity:** Around 140 household have facility of electricity.

**Toilets:** There are not public toilets in the village.

**Bus stand:** There is no bus stand available within the village to avail bus services people go to Ghatol main road which is 3 km away from the village.

## Childcare and Nutrition

In the mother's absence, fathers, grandmothers and grandfathers take care of the children. Nutritious food is available and distributed for the women in Aanganwadi. Housewives have good interactions with the ASHA workers and ANM visit the village houses frequently. While ASHA workers do frequently visit the villagers, there is not good interaction with the ST community.

Health problems occur in August, September and October. Mosquitoes are present in the Chumasa and coincide with higher rates of disease, such as diarrhea and fever. The Aanganwadi Centre is open and operational during the Chumasa. Children go there to study. There are no malnourished children in this village.

## School

A secondary school is located south of the village, and Aanganwadi Centres are located near all schools. Playgrounds are available in the schools and students use the sports facilities. Government schools have many facilities and the quality of the mid-day meal is good. Parent-teacher interactions are also found to be good. When children are unable to attend classes school, the teachers conduct home visits in the village. There are school holidays during May and June, during which time the school is closed. Whilst most of the students attend government schools, as most cannot afford private school fees, some children do attend private schools. Private school fees are paid in July.

Government schools have many facilities; including playground, equipment, toilet facilities, good sanitation facilities. Tables and chairs are not available in the schools; Tatpattis are used for children to sit on. Schools are in good working condition; villagers are satisfied with the teachers. Private and government schools are both available in the village. Around 75% of children go to the government schools and 25% of children go to private schools.

## Water

The Mahi canal is used for irrigation purposes. Only a pond and, in some areas, the Mahi canal are available for water. Villagers depended on hand pumps for drinking water. There are no water shortages and hand pumps are sufficient to meet the water needs of villagers. There is no bore well located and no government supply of water or tap water in the village. Maximum water consumption occurs in June.

Flooding occurs during Chumasa between August and September, as the water of the Mahi dam canal overflows. Irrigation is completed by a bore well and 50% of households have their own hand pumps. Waste water is available for irrigation. Dug ponds are not maintained properly. Canals are made up of bricks and cemented material. In some places villagers have made alternative drainage patterns for irrigation.

The soil colour is brown and the water holding capacity of the soil is good. Some parts of the village ground face water logging. Mosquitoes are found in waterlogged areas, increasing the risk of malaria. Some villagers claim they have developed skin diseases due to water contamination and high fluoride found in the water.

## Mid-day Meal

Government schools have many facilities including lunch. The quality of the lunch is good.

## Migration and Livelihood

Villagers migrate to other states such as Gujarat and Madhya Pradesh. Members in the few households migrate to foreign countries such as Kuwait. Women work in the fields in the absence of other family members. Male members migrate to the synthetic textile factories for their jobs and employment within Rajasthan.

## Agriculture

Villagers use corn as their main food source. The main crops consist of corn, wheat, soya and in some places sugarcane. However, corn is abundantly available and used in every household. Mixed cropping patterns are used. Villagers do not sell wheat or corn; they only use them for personal consumption.

Maximum income for the villagers occurs in March and least income occurs in January; this is due to the availability and selling of soya or sugarcane. Crops are harvested in April and October. Maximum salary is Rs. 20,000 and minimum Rs. 15,000.

Landholding capacity is minimum five bighas and maximum ten bighas. Villagers employ a mix of traditional farming practices and advanced agricultural practices, including the use of chemical fertilisers. Agriculture is dependent on bulls for ploughing fields. Women contribute the most in the agricultural work.

## Cooking Fuel

Some villagers have LPG connection via the Ujjawala scheme. Very few are able to use LPG as most villagers cannot afford this facility. Wood is used for cooking purposes. Daily food consists of chapatti with dal and some vegetables. Around 80% of people have LPG connection, but all villagers use wood for cooking purposes.

## Lighting and Electricity

Some houses have electricity access up to 24 hours a day. The electricity consumption is at its peak during the summer season in the months of April, May, June and July. Lighting facilities are provided by ward panchayat. Villagers mostly use diesel oil instead of kerosene for lighting purposes.

## Livestock

Villagers use cows, buffalo and goats for milk. There are more cows in the village in comparison to other animals.

## Local resources

In the village of Thikaria Chadravat, roads and transport conditions are good and all areas of the village are well connected. Canals are made up of bricks and cemented material. In some places, villagers have constructed temporary solutions for the drainage pattern of the village.

The most crowded periods for the market are April, July and October. Maximum expenses occur in March, April and during marriage seasons. Least expenditure occurs in February and January. Villagers earn their highest income in March and April.

## Sanitation and Handwashing

Some ponds are also used by the villagers for sanitation practices. All villagers have toilet facilities in their homes, but they use them as store houses instead (for cooking fuel and wood). Some villagers



built toilet structures in their homes to receive funding from the government, but do not maintain them as toilets. The economic condition is not good in the ST communities.

Soil is used for hand washing purposes; soap is also used frequently but only for bathing. Very few villagers are using a mixture of surf and Mati for washing purposes.

## Information and Media

Four to five televisions are available in the village for entertainment and information purposes, they mostly listen to radio only. Most villagers have radios.

## Housing

Houses are mainly built with bricks in the style of pukka ghar, some houses are constructed with soil and the base of the house is made up of rocky material.

In some places housing conditions are not good; houses are made up of soil and not constructed with bricks. Rooftop conditions are not good and are not constructed with bricks.

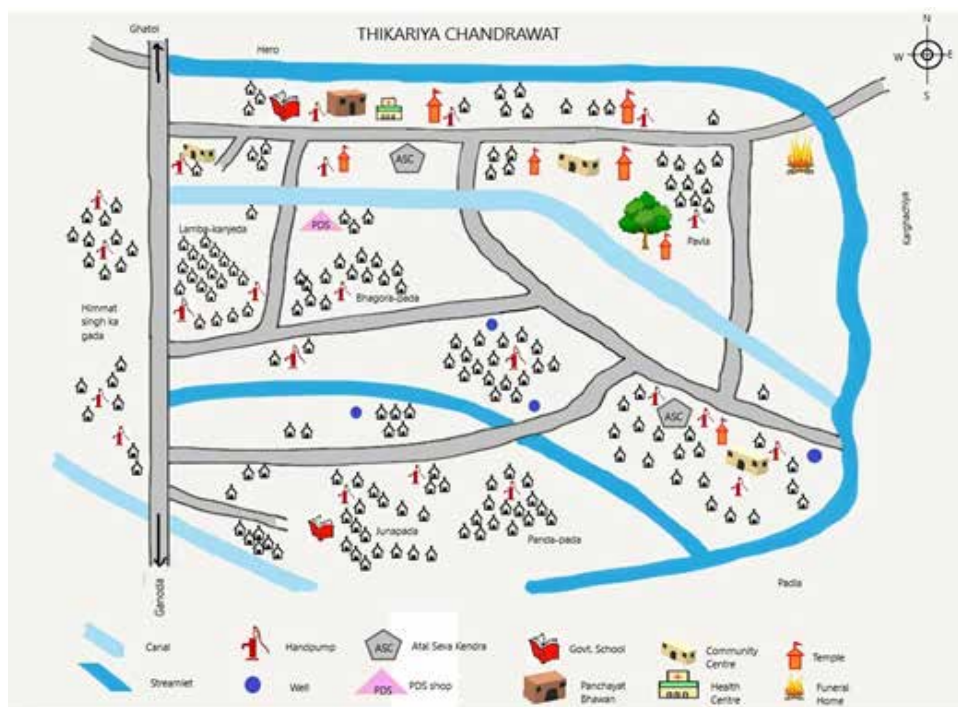


Figure 16 - Thikariya Chandrawat (Ghatol Block)

## Village 5: Udpura, Gram Panchayat: Senawasa, (Ghatol Block)

**Population (as per Census 2011): 1,199**

**Number of Household (as per Census 2011): 254**

**Social Groups:** ST – Bamaniya, Maida, Dindor and OBC – Patedar

**Number of Hamlets:** 2 (Udpura and Shankarpura)

**Government Institutions:** Two Anganwadi Centres; one in Udpura and one in Shankarpura; two schools (one primary and one elementary)

**Water source:** six wells, nine tube wells and 16 hand pumps available for drinking water. For other use there is a canal and streamlet.

**Shops:** Three small shops available within the village.

**Solar Panel:** Not available.

**Electricity:** 90% of households have electricity.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is no bus stand available within the village; for bus services people go to the NH113 main road which is near the village.

## Childcare and Nutrition

When mothers are not at home or working in the field, fathers, grandmothers and other elderly family members take care of the children.

The quality of interaction between Anganwadi workers and the community is generally good. Anganwadi workers usually visit four to five times a month. The Anganwadi centre is always open and operational, even during the Chumasa. Many children use the facilities to study. Community members report that their interactions with ASHA workers is sometimes good. ASHA workers visit the community frequently, but they do not have good conversations with the ST community villages.

High rates of disease occur in the Chumasa and in the summers. Mosquitoes are present during the Chumasa. Villagers face health problems mostly in August, September and October but illness such as diarrhoea and fever are prevalent throughout the year. Children are sensitive to the development of diseases and there are some cases of malnutrition reported in the village. After learning that a child is malnourished, they are taken to the hospital to be measured and weighed. Depending on the child's symptoms, action is taken as required with the available resources.

## School

An upper primary school is located south of the village and the Anganwadi centre is in close proximity to the schools. Road conditions are good near the school. A big playground is present, but it is only operational during the summer because the grounds become water logged. During the Chumasa, some areas of the village become flooded. Water logged areas have been reported to have a high burden of mosquitoes.

Drinking water is available in the school and no water shortages occur during the summer months. Hand pump structures are not in working condition. Schools are closed for the holidays between May and June. Schools have good infrastructure and villagers report satisfaction with the functioning of the schools. However, the condition of toilets in the school is not good despite money being granted to construct toiletry facilities. Most of the students' families prefer to pay fees of 10 thousand to 15 thousand rupees per annum for private school rather than have children attend free government school.

## Water

Drinking water is available in school and no water shortages occur even during the summer months. Many hand pumps are present, however not all hand pumps are functional. Villagers also note that there are high levels of fluoride in sources of drinking water and associate this with an increase in health issues.

Water from the Mahi river is used for irrigation and some ponds are also available for drinking and sanitation practices. The village is well connected by the canal system. Villagers receive water from the canals during all seasons, however there is some shortage in June and July. The National

Rural Drinking Water Programme (NRDWP) is working to minimize this water shortage problem, including the construction of big water storage tanks.

Irrigation is completed by use of bore wells (50% of households claim that they have an own borewell). Waste water is also utilized for irrigation. Canals are made up of bricks and cemented material, but in some locations, villagers have constructed a drainage pattern for irrigation themselves.

## Lunch

There are many facilities available for the students in the government school, including free mid-day meal for all students, and there are no barriers for children from any community to attend. Students and parents are happy with the mid-day meal offered and believe this scheme is very helpful.

## Migration and Livelihood

The villages experienced little migration to other parts of the state, outside the state and outside India. It is generally the male villagers who migrate to the synthetic textile factories for employment, which are situated in other places within Rajasthan. Salaries ranged from Rs. 20,000 to Rs. 15,000. Women are more active in agriculture than men, in addition to performing house work.

## Agriculture

The main crops grown are maize, wheat and even rice and sugarcane in some areas. Corn and wheat are main agriculture produce and their staple food is chapatti with dal and some vegetables. Tractors are used for agricultural practices in addition to manual ploughing by bullocks and animals.

Villagers receive the highest income in March and April, and lowest income in August and September. This variation in income is due to villagers harvesting their crop yields in March, September and October. The minimum landholding capacity is five bighas and the maximum landholding capacity is ten bighas per family. But in the SC/ST community it is around two to four bighas.

## Cooking Fuel

The main cooking fuel used in the village is wood sourced from the local trees and field residues. In 80% of the households there is LPG connection but all of the villagers use wood for cooking their food as it is too expensive to pay for the gas cylinders in lump sum. It is also common practice to use dung cakes as fuel in the Chumasa. In the SC and ST community, all households also have gas connection through the Ujjawala Scheme. Men collect cooking fuel (e.g. wood) from the forest area by tractor as women don't go in this area.

## Lighting and Electricity

Electricity is available; however, villagers only receive about ten hours of electricity per day. A lightning facility is provided by ward panchayat. Electricity consumption is higher in summer, with maximum consumption in May, June and July.

Kerosene is supplied only to households without a gas connection, meaning those with gas connection do not use Kerosene oil and instead use diesel oil for lightning purposes. Villagers receive six to ten hours of electricity in the Pattidar community and two to three hours a day in SC/ST community.

## Livestock

Villagers use cows and buffalos for milk production and consume any milk yielded within their family rather than selling it. In Goushala, the urine and dung of cows is also utilised.

## Local resources

The main road in Udhapura village is a Khadanza<sup>20</sup> road and transport conditions are good. Soil colour differentiates from place to place within the village. Roads are generally well-constructed with the condition lacking in some places. Water logging occurs in the streets of the village. Flood occurs occasionally but does not usually cause problems.

## Sanitation and Handwashing

All villagers have toilet facilities, but they are used as store houses rather than for their intended purpose. Some villagers constructed their own toilets in order to earn government funding, but they are not maintained as toilets and therefore have poor condition.

Villagers use soil to wash their hands and soap is only used for bathing. However, ANM and Anganwadi workers reported introducing sanitation and other hand washing practices. Open defecation is commonly practiced.

## Information and Media

Villagers receive their information regarding rules, regulations, funding and policy from government officials. Some residents, depending on their economic conditions, own a television set. In most households, radios are used for information and entertainment.

## Housing

Houses are mainly built with brick as pukka houses with some households using mud as Kutch houses. The boundary walls of the houses and rooftops are cracked due to seeping water and leaks. No houses are built by Indira Awas Yojana.

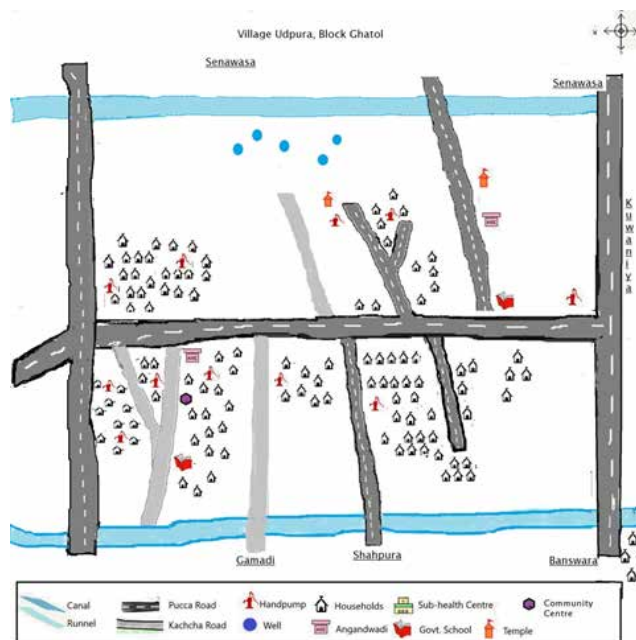


Figure 17 - Udpura Village (Ghatol Block)

## Village 6: Bansri, Kakanwani (Kushalgarh Block)

**Population (as per Census 2011): 1,680**

**Number of Household (as per Census 2011): 710**

20. Road made of compacted soil.

**Social Groups:** Only ST - Damor, Maida, Vasuniya, Bhuriya, Parmar, Rawat, Katara, Dama, Muniya, Charel, Charpota, Ninama and Aad

**Number of Hamlets:** 5 (Jaguda, Chakli, Holi, Muniya and Vagadiya)

**Government Institutions:** One Anganwadi Centre, one Ma-badi, one Primary School, one Upper Primary School

**Water source:** 18 wells, 2 tube wells and 16 hand pumps available for drinking water. Canal available for other use which connects entire village.

**Shops:** Three small shops available within the village.

**Solar Panel:** Not available.

**Electricity:** Around 40% of households have electricity facilities.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is one private bus stand available within the village on Kushalgarh road.

**Forest:** The forest area is available in the village. Villagers collect firewood and fodder from the forest.

## Childcare and Nutrition

Mothers take charge of childcare. In her absence, those who are present in home, such as the grandmother or father, look after and provide food for the children. Most households have good relationships with the ASHA workers, the ANM and Sahayika, who frequently conduct household visits.

Diseases are more prevalent during the Chumasa. The local population believe that the illness is due to contaminated water in the Chumasa. The Anganwadi Centre in the village is operational during the Chumasa too. There are few cases of malnourished children in the village. Problems with malnutrition occur when children's height and weight decreases.

## School

Although there is a primary school in the village, there is often a lack of teachers. The Anganwadi Centre is located near the school. Playgrounds are available; however, they are not in good condition. Tables and chairs are not available in the schools and children sit on tatpatti instead. Hand pumps are also provided in the schools, but the students report that they have not been operational for two to four months during the summers. In the schools there are no sports facilities.

According to the villagers, parent-teacher interactions are not good. Schools are closed during December and January, and the schools' vacation-period is between May and June. Government primary and secondary education is free. Two government schools are present, and they have many facilities; a mid-day meal is provided, and general conditions are good. Tables and chairs are available in some classrooms of the school. All villagers are satisfied with the mode of teaching.

## Water

There is no government piped water supply provided to the village. Water from a single pond is used for irrigation purposes in addition to drinking and sanitation practices. The pond does not have proper maintenance. Many hand pumps are present in the village, but they are not sufficient to meet

the villagers needs due to the depth of the water level. Although the hand pumps are not sufficient to meet the water needs of the villagers, there is no water shortage for drinking purposes. Furthermore, there is no bore well present.

The maximum consumption of water occurs in June and July. There is no access to water from canals and the Mahi Dam. Flooding occurs in August. Water shortages occur in the summers. Due to water pollution, there are significant problems with water which cannot be adjusted for. This low water quality leads to higher rates infection.

## Lunch

Two schools are present, and they have many facilities; a mid-day meal is provided, and general conditions are good.

## Migration and Livelihood

Villagers migrate with their families to other areas of the state and abroad to Kuwait for job opportunities. However, the entire family does not migrate. In the absence of their male members, women do farming activities. Families with job cards are employed in the MNAREGA.

## Agriculture

Main crops consist of corn, wheat and soybean. However, corn is mostly used by the villagers. Crops are harvested in March and October. The landholding capacity is one to four bigha per family.

High income is seen March and low income is in December and January. In March and April, the maximum expenditure occurs due to weddings in the village. Wheat and corn are not sold by the villagers and are only used for food purposes, corn being the main food source. Agriculture is dependent on bulls and tractors for ploughing fields.

## Cooking Fuel

Some villagers have LPG connection for cooking fuel provided through the government sponsored Ujjawala scheme. However, very few use it due to excess cost, as they are unable to afford the LPG. Wood is mostly used for cooking purposes. Kerosene is supplied sufficiently by the gram panchayat.

## Lighting and Electricity

Electricity is available in very few households and only for one to three hours per day. Few households use solar panels for lighting purposes. Power consumption is highest during summers, mostly in June and July. Villagers report an inability to afford electricity due to high costs.

## Livestock

Villagers use cows and goats for their milk purposes. Villagers use forest vegetables to supplement their food sources. In the summers, cows do not produce milk due to lack of feed.

## Local resources

In the village of Bansari, road and transport conditions are not good. However, all parts of the village are connected by road. In all areas of the village, black-brown soil is found. Flooding occurs in August, and the greatest water consumption occurs in summer over the months of June and July. There is a perception that high fluoride levels in the water causes skin disease.

March, July, September and October are the busiest times in the market. Maximum expenditure is in March and April, during marriage seasons. Expenses are comparatively lower in February and January. Canals are



made of bricks and cemented material, however in some places the villagers developed temporary solutions for the drainage pattern of the village. Villagers purchase vegetables and spices from the local market.

## Sanitation and Handwashing

Toilet facilities are present but are not used properly. For example, a toilet bowl may be used to store cooking fuel and wood. No tube well is present for sanitation purposes.

Soil and ash are used for hand washing. Soap are rarely used for handwashing.

## Information and Media

No televisions are present for information and entertainment. Only radios are available. But there is no tower for these, hence the villagers experience connectivity problems. Villagers receive information from the schools and villagers who purchase daily newspapers.

## Housing

Many houses are constructed using mud (Kutchha house).

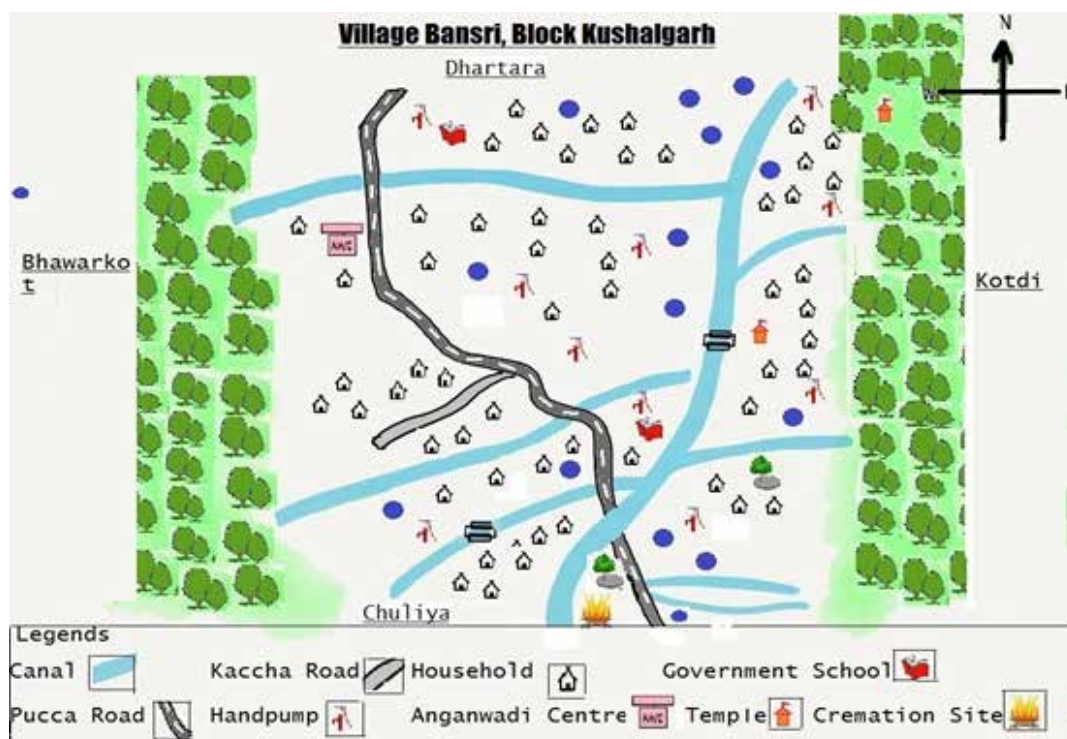


Figure 18 - Bansri Village (Kushalgarh Block)

## Village 7: Kakanwani, Gram Panchayat, Kakanwani (Kushalgarh Block)

**Population (as per Census 2011):** 1,701

**Number of Household (as per Census 2011):** 267

**Social Groups:** Only ST (Muniya, Maida, Garasiya, Damor, BhuriyaBariya)

**Number of Hamlets:** NA

**Government Institutions:** One Anganwadi Centre. Three schools (two Primary and one senior secondary)

**Water source:** 16 wells, one tube well and 22 hand pumps are available for drinking water. For other use there is one canal, one streamlet and two ponds.

**Shops:** Two small shops are available within the village.

**Solar Panel:** Not available.

**Electricity:** Around 50% of households have electricity facilities.

**Toilets:** There are no public toilet in the village.

**Bus stand:** There is one bus stand available within the village on Kushalgarh road.

## Childcare and Nutrition

Grandmothers, fathers or any family members who are at home in absence of the mother, take care of the children when she is unavailable. The villagers have good interactions with the ASHA workers. ASHA workers and ANM frequently make home visits.

Vaccinations (e.g. polio) are given by ASHA workers and ANM during home visits. The Aaganwadi Center is open and operational during chumasa. Children go there to study. Health problems occur during chaumasa, especially in June, July, August and September. Fluoride contamination in the water is thought to be responsible for skin diseases in the area. In the chaumasa, mosquitoes create problems for human health. There are no reported cases of childhood malnutrition in this village.

## School

Schools facilities are available in the village. The school's big playground is operational only in the summer as mosquitoes were too populous outdoors in the water. The school conditions are not good, and schools are closed during May and June for summer vacation. There are no private schools present in the village. Tables and chairs are available in some classrooms of the school.

Teacher-parent interaction is very good in the village. The government schools have various facilities and provide a good quality mid-day meal. A Hand pump facility is available in the school, but high fluoride content is found in the water. Villagers are satisfied with the quality of teaching.

## Water

Many hand pumps are available in the village, but they are not sufficient to meet the needs of villagers. There are several informal sources of water for irrigation, including one pond and wells. Wells are also the main source for drinking water and other purposes like cooking, toilets and washing. There is no bore well in the village and no government piped water supply.

There is no shortage of drinking water. Water shortage for purposes other than drinking occurs in the summers June and July. The pond does not have proper maintenance. Flooding occurs in August. During summer, supply of drinking water is delivered to the village by tanker, facilitated by Panchayat.

## Lunch

The government schools provide good quality mid-day meals facilities.

## Migration

Villagers are migrating to the other states of India and abroad to Kuwait for jobs and employment. However, the entire family does not migrate. Families with job cards are employed in to the



MNAREGA. In the absence of male family members, other family members including women do the farming activities. Around 70% of families report some kind of migration for work.

## Agriculture

Corn, wheat and soybean are the main source of food and major crops in the area. In some areas, rice is also grown. Daily food is chapatti with dal and some vegetables.

Landholding pattern varies from two to five bighas per family. Major crops are harvested in March, April and October. From the harvest, 20% of the crops grown are sent to be consumed in the village. High income is experienced in March, April and May and low income in June and July.

There is no tractor in the village. Farming activities are dependent on bulls for ploughing fields. People have land divided into multiple parts for family members. Maximum expenditure occurs in June and July and in marriage season.

## Cooking Fuel

Wood is used for cooking purposes. Some families have an LPG connection, provided through the Ujjwala scheme. Some families have LPG assessment cards. Kerosene is supplied sufficiently by the gram panchayat.

## Lighting/Electricity

Villagers have electricity access, but throughout the year they only have access for two hours a day. Electricity access is poor during the Chumasa. Maximum energy and electricity consumption occur in April, May and June.

## Livestock

Villagers have cows, buffalos and goats for their milk production sources. During the summer, cows are not able to produce sufficient milk due to poor availability of feed. Fodder for the cows needs to be purchased. Villagers also use forest vegetables for their food sources.

## Local resources

The Kakanwani village road and transport conditions are observed not to be good. In some places, road structures are made up of soil bricks. Despite this, all the places in the village are well connected by the road. Flooding occurs in August. The markets are most crowded during April and May. There is a small local market, but villagers usually go to the Kushalgarh market.

## Sanitation and Hand washing

All villagers have toilet facilities in the houses, but they use them as store houses rather than for their intended purpose. Oftentimes, toilet facilities are present but are not functional.

Soil is used for hand washing purposes and soap is used for bathing.

## Information and Media

There is no television or radio available in the village. The alternative media sources used in the village are newspapers. School officials also play critical role in providing important information to villagers.

## Housing

Houses are mainly built with brick and soil mud in the style of Kaccha Ghar. These are not in good conditions. Rooftop conditions are not good and are not constructed with bricks.

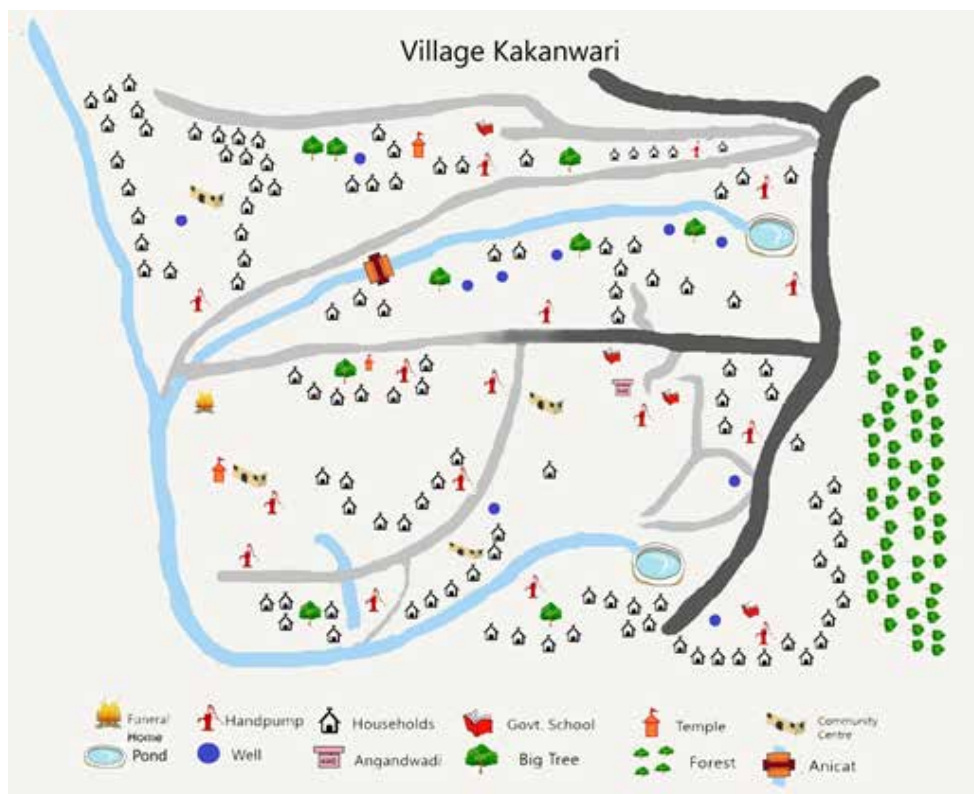


Figure 19 - Kakanwari Village (Kushalgarh Block)

### Village 8: Devdasath, Gram Panchayat: Doongripadai (Kushalgarh Block)

**Population (as per Census 2011): 1,617**

**Number of Household (as per Census 2011): 228**

**Social Groups:** Only ST (Devda, Damor, Maida)

**Number of Hamlets:** 2 (Devdasath and Vadla)

**Government Institutions:** Two Anganwadi Centres are located in the school. There are three schools (two Primary Schools (Devdasath & Vadla) and one Upper Primary School (Devdasath)).

**Water source:** 17 wells, one tube well and 29 hand pumps available for drinking water. Two canals are available for other use.

**Shops:** Three small shops are available within the village.

**Solar Panel:** Two solar panels available for reverse osmosis (RO) plants constructed under the Sor Urja Svachalit Panghat Yojna.

**Electricity:** Around 60 household have facility of electricity.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is one bus stand which is located outside of the boundary of the village and is easily accessible by the village people.

## Childcare and Nutrition

Grandmothers and the village elderly often take care of the children when the mother is out of the house, although mothers, grandmothers and fathers are all reported to have involvement in childcare. Interactions between the villagers and the ASHA workers are not always good. ANM does not make home visits frequently to educate mothers about child nutrition and best feeding practices.

Health problems occur in June, July, August and September. The most common diseases are chicken pox, fever and diarrhea. Mosquitoes and polluted water are the main factors thought to contribute to these diseases. As a result, most waterborne diseases occur in Chaumasa. In the village there is only one reported case of malnourishment, occurring in a six-year-old child. Vaccinations are thought to be completed on time.

## School

The school is located in the village and it is not in good condition. The parent-teacher interaction is also poor. In some cases, there is also poor interaction between teacher and students. Playground and sports facilities are lacking. The school is closed over summer vacation during May and June.

During the winter, classes take place outside of the school. If a child does not go to school, teachers make home visits in the village to assess their reason for absence. Tatpatti is used for children to sit on. Tables and chairs are available in some classrooms of the school. Villagers are satisfied with the mode of teaching.

## Water

There is one pond for irrigation activities, bathing and sanitation purposes but it does not have proper maintenance. There is no access to water from the Mahi canal. Many hand pumps are present, but villagers still face water shortages in summer because the hand pumps are not sufficient to meet the drinking and sanitation water demands.

There is perception that high fluoride levels in water causes skin disease. However, this needs to be verified with further testing. Maximum consumption of water occurs during summer in April, May and June. There is no bore well, government supply of water or tap water. However, hand pumps can be found. There is also access to 60 wells which require motors to be pumped.

## Lunch

Despite the government schools having many facilities, the mid-day meal services are not good.

## Migration

Local migration occurs as villagers and their family members move to the other side of the state. Though, in some cases only a few members from the family migrate. Most households possess a job card and get employment through the MNAREGA work. In the absence of male members, women work in the fields. Villagers are also migrating to the other states in India and abroad such as Kuwait in search of jobs and employment.

## Agriculture

The main crops are wheat, corn and soybean. Villagers use corn as their main food source for cooking. Crops are harvested in October. Villagers require four times more water during cropping season. Landholding capacity is two to five bighas per family.

Maximum income is observed in May and minimum income is observed in June and July. Villagers do not sell wheat or corn; they just use them for their own for daily meal. Agriculture is dependent on bulls and tractors for ploughing fields.

## Cooking Fuel

Wood is mainly used for cooking purposes. Only a few households also have an LPG connection through the Ujjawala scheme, as it is costly, and many are unable to pay for this facility. Any villagers who do have access to LPG through the Ujjawala scheme are not eligible to obtain kerosene oil as an alternative, as kerosene is reserved for those without LPG access. Kerosene is supplied sufficiently to those eligible to receive it by the gram panchayat. Around 100 families have LPG connections in the village.

## Lighting/Electricity

The highest energy consumption occurs during summer months in April, May and June. The villagers have access to electricity, but during the Chumasa this is reduced to only five- or six-hours per. Approximately 50% of households have lighting facilities.

## Livestock

Villagers use cows and goats for their milk purposes. In summer, cows do not produce milk due to poor availability of feed for them. Villagers use forest and local vegetables for food sources and have sufficient livestock to overcome the shortages in milk production.

## Local resources

In the Palakpara village, the road and transport conditions were not in good condition; in some places no roads were built. Flooding occurs in Chumasa during August and April.

The highest expenditure for the villagers is seen in March and April, when marriages happen within the village. In February and January, villagers have lower expenses. The market is most crowded during April, July and August. Local markets, where villagers purchase vegetables and spices, are also available. Canals are constructed of bricks and cement. However, in some places, villagers made temporary solutions for the drainage system.

## Sanitation and Hand washing

Villagers have toilet facilities, but they are not being used properly. Instead, the toilet bowl is used for storing cooking fuel and wood. Functional toilets are available in most of the households and they were properly utilized with some exceptions where toilet facilities were used as a storage facility. Some villagers have the capability of fundraising for the toilet facilities but did not construct any toilet.

Soil is used for hand washing and soaps are only use for bathing purposes.

## Information and Media

There are no televisions in the village for information or entertainment. Only radios are available. Villagers go to government schools to read newspapers and convene at the Panchayat meeting for information.

## Housing

Houses are built mainly with bricks and soil-mud in the Kutcha housing style. Houses are not in good conditions as their outer walls and rooftops are cracked in some places. Housing is not maintained due to lack of funds. Many houses are constructed with soil and the base of the house are made of rocky material.

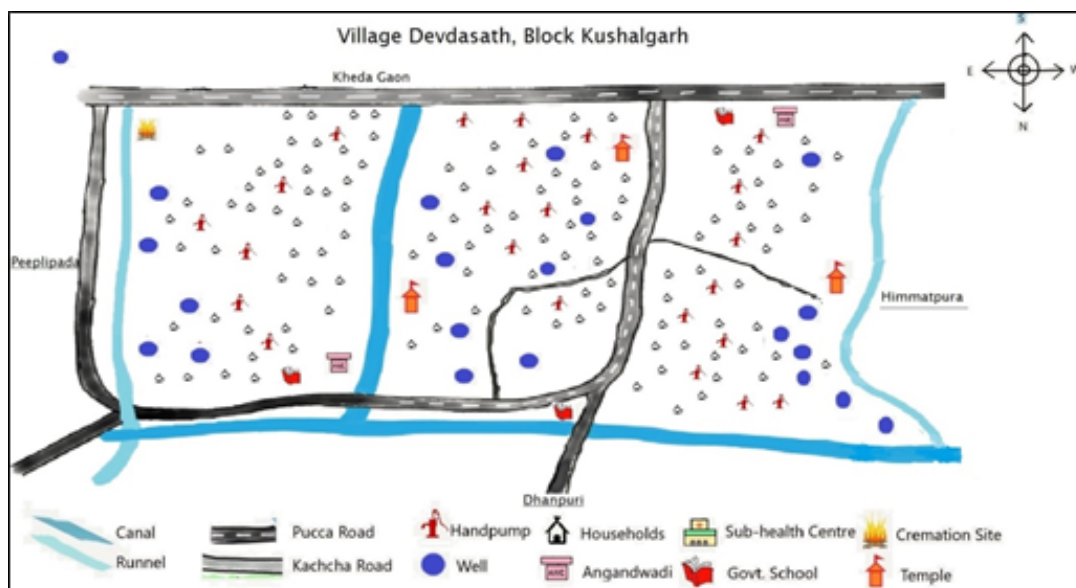


Figure 20 – Devdasath Village (Kushalgarh Block)

## Village 9: Palakpara, Gram Panchayat: Doongripada (Kushalgarh Block)

**Population (as per Census 2011):** 1,767

**Number of Household (as per Census 2011):** 256

**Social Groups:** Only ST (Damor, Maida, Bhabhor, Bijor, Rawat, Nianama, Katara, Dodiya).

**Number of Hamlets:** NA

**Government Institutions:** Two Anganwadi Centres (both located within the schools) and two schools (one Primary and one upper primary).

**Water source:** 12 wells, two tube wells and 24 hand pumps available for drinking water. For other use there is a canal and one nala which is connected to the entire village.

**Shops:** Two small shops available within the village.

**Solar Panel:** Not available.

**Electricity:** Around 40% of households have facility of electricity.

**Toilets:** There are no public toilets in the village.

**Bus stand:** There is no bus stand available within the village.

### Childcare and Nutrition

The mothers, grandmothers, fathers and all other family members who are present in the house take part in childcare. In the absence of the mother or the grandmother, the father looks after the children. The villagers have good interactions with the ASHA workers, with most conversations related to child nutrition and feeding practices. ASHA workers frequently visit the villagers, but do not have good interactions with the ST community.

Health problems, including diarrhea and fever, arise mostly in the months of May, June, July, September and October due to the presence of mosquitoes and contaminated water during the Chumasa. Illnesses during the summer and Chumasa also lead to poor economic conditions. There is one reported case of malnutrition in the village.

## School

The Anganwadi Centre is open and operational even during the Chumasa and children go there to study. Schools are in good working condition and villagers are satisfied with the teachers.

Interactions between parents and teachers are very good. Tables and chairs are found in some classrooms of the school. The school holidays are in May and June.

## Water

While looking at the topography and structure of the village, it is obvious that water is not sufficient to meet the villagers' needs. Irrigation water is only available from one pond which is connected to all areas of the village and not properly-maintained. Villagers only receive water for seven to eight months of the year and they do not have other sources of irrigation. Hand pumps are provided by the government, but these are not sufficient in meeting the demands of villagers as the water table is deep in the summer. Two structures have been built for water purification to overcome the high fluoride levels in the water. Waste water is supplied for irrigation. Wells are present, and pumps are used to fetch water to irrigate the fields.

Water shortages occur during summer, mainly in April, May, June and July. There is no access to the Mahi canal. There is no bore well in the village. Villagers face problems with access to drinking water in summer and in the Chumasa.

## Lunch

The quality of the mid-day meal in government schools is good.

## Migration

Villagers often migrate to other districts in Rajasthan and other states in India looking for jobs and employment, such as Gujarat and Madhya Pradesh. The entire family does not migrate. Only male family members migrate for work in textile factories within Rajasthan. Families with job cards are employed under the MNAREGA scheme. In the absence of their male family members, women work in the fields.

## Agriculture

The main crops are corn, wheat and soya. Corn is widely used in daily food. In some areas of the village, sugarcane is also a major crop. Crops are harvested in March and October. Bulls are used in the fields for ploughing and other purposes. Irrigation is dependent on ponds and rain water. Landholding capacity ranges from two bighas to ten bighas. The high income is earned during the months of March, April and October and the lowest income is observed in January, July, and August.

## Cooking Fuel

Only a few families have an LPG connection. Some families have an LPG card for the assessment of gas connection. Villagers only use wood for cooking. Kerosene is supplied through the gram panchayat. Wheat and rice are the villagers' main food source. Daily food consists of chapatti with dal and some vegetables. Due to poor economic conditions, the villagers are not able to access 'healthy' foods. Very few households in the village are non-vegetarian.

## Lighting and Electricity

Access to electricity is limited to few households. Lighting facilities are provided by the ward panchayat. During the summer season, electricity consumption is at its peak. Some villagers use diesel oil instead of kerosene for lighting purposes. Electricity is only available for five to six hours during the Chumasa.



## Livestock

A few villagers have livestock used for milk purposes.

## Local Resources

In Palakpara village, all areas are well connected by roads developed by government officials. However, the road infrastructure is not good, and the roads are poorly developed in some areas.

The soil is sandy loam and water easily permeates the soil. Forests are visible in the south of the village. Only one pond is available to meet the water requirements of the villagers. This pond does not receive proper maintenance. Flooding occurs in the Chumasa during the months of August and September. The busiest times at the market are March and October. Markets are most crowded in Deepawali, with maximum expenditure also occurring during Deepawali.

## Sanitation and Handwashing

Toilet facilities are available only in a few households. Toilets were constructed in a few of the wealthier households within the village, but they are also using the toilet facilities for storage purposes. Economic conditions are poor and do not allow the villagers to buy soap on a regular basis. Most of the villagers use soil and ash for hand washing and sanitation purposes. Soap is used for bathing purposes during the day.

## Information and Media

Televisions are not available for information and entertainment. Only radios are available, but the connectivity is very poor.

## Housing

Rooftop conditions are not good as roofs are not constructed with bricks.

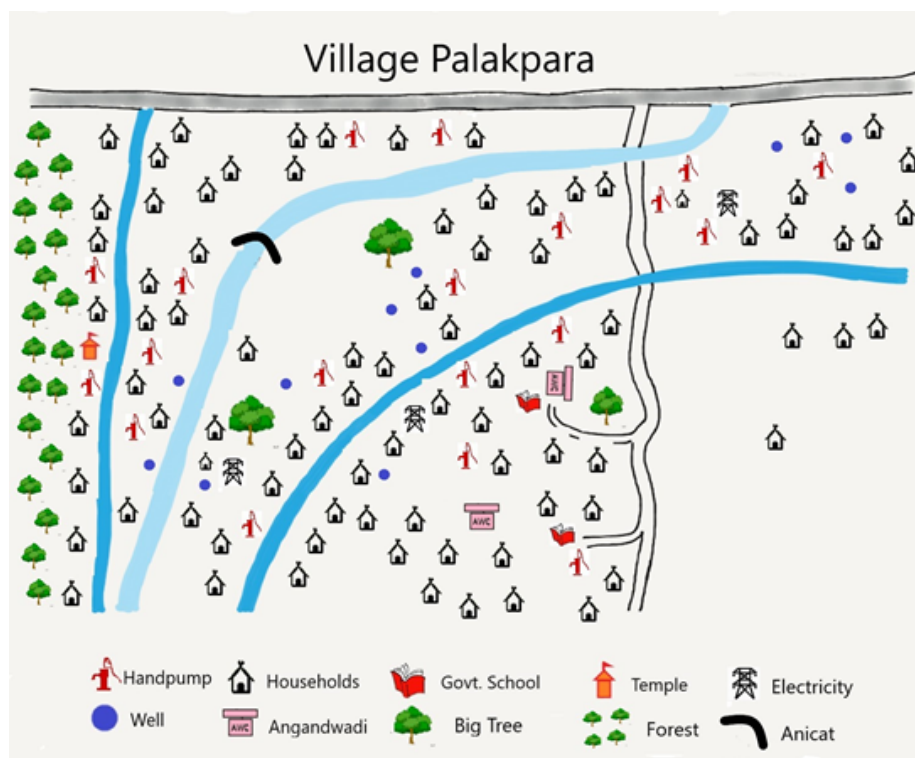


Figure 21 - Palakpara Village (Kushalgarh Block)



## In Summary

### Ghatol Block

In Ghatol block, there are no water shortages and few flooding issues within the houses, with the exception of a few instances of flooding in low-lying areas. Canals are made of bricks and cemented material. However, villagers have also created temporary solutions for the drainage pattern in the villages. The Mahi Canal is used for irrigation throughout the year. No tube wells are found in the villages. Diseases are mostly observed during the Chumasa. Although toilet facilities are present, they are often used to store wood and grains and not utilised as toilets. Due to this misuse of toilets, open defecation still occurs in the fields. Residents use soil and ash for hand washing purposes, with few villagers using soap for bathing purposes.

Wood is used as fuel for cooking purposes, as very few villagers have LPG connections. Solar panels are available but rarely used. Cow and goat milk often consumed in the household. Major crops in the area are maize, wheat and even rice in some places. The agricultural facilities are superior than those in Kushalgarh block, as tractors are used in addition to manual ploughing. Markets are available nearby the village.

Roads are constructed and all parts of the village are connected. Residences are mainly pucca houses. Electricity is available; however, villagers only receive around ten hours each day. Few villagers have Television sets, but it is highly dependent on their caste and economic conditions.

### Kushalgarh Block

There is a perception in the village that government officials and panchayat are not helpful in providing information. The population living in the village migrate to other states of India in search of jobs and employment and their families often migrate together.

There are water shortages in the summer and few flooding issues within the houses, with flooding only occurring in low-lying areas. Only one pond is present to meet the water needs of the villagers and it does not receive proper maintenance. The pond is used for irrigation purposes only and is totally dependent upon rain water. Two villages within this block are located near the canal but can only access water during Chumasa and winter. In one village, residents have constructed temporary solutions for drainage system, but it is not functional. There are no tube wells found in the villages. Seasonal illnesses are experienced during summer and in the Chumasa. Although toilet facilities are present, they are not functional, instead they have been converted into storage facilities. Open defecation is common and usually carried out in the fields. Residents generally use soil and ash for handwashing and soap is rarely used. The drinking water facilities have poor infrastructure which is also dependent on the government. Hand pumps are available in the village, however they do not work well during summer season when the water levels are low.

Wood is often used as fuel for cooking purposes, as very few villagers have LPG connections. Kerosene is supplied by the gram Public Distribution System (PDS). Solar panels were provided by the government in a few houses. Villagers use cow and goat milk in their households and the main crops for household consumption are maize and wheat. Agriculture is dependent on bullocks and manual ploughing fields. Markets are available but not near the villages.

Road infrastructure is poor, but all parts of the village are connected. The majority of the houses in the village are Kuccha. Electricity is available, however villagers only receive around two hours in a day. Very few villagers have television sets, which are used for entertainment and accessing media. The Aaganwadi Centre is open and operational even during Chumasa. Only few classrooms in the school have tables and chairs for the students.

## Commonalities between blocks

In the Kushalgarh block and Ghatol block, the family dynamics rely on the mother to take care of the children. In her absence, the grandmothers and father look after the children.

Overall it can be seen that the two blocks have many similarities. However, irrigation and water supply is the major difference between the two, as only Ghatol has access to water from the canals of the Mahi dam throughout the year. Both blocks do not use their toilet facilities properly, are affected by diseases in similar periods and use soap infrequently. They continue to use wood for cooking purposes and their main food source is maize and wheat. There is a large disparity in access to electricity, with ten hours of daily access in Ghatol and a mere two hours in Kushalgarh.

## Sanitation

During the transect walk the team observed that only very few households have toilets. This implies there is inadequate sanitation for children and for mothers and carers who play a critical role in care for infants. For example, residents built toilets but most of the households only utilise the structures to store grains or wood. In one instance, pits had been excavated for use as toilets but the pits became waterlogged and were a breeding place for mosquitoes. In some households, the sharing of toilets with elders was seen as a barrier and in others the tradition of going to the field for open defecation seemed to perpetuate.

Hygiene was not directly discussed during the transect walk and hand washing was discussed more broadly in the discussion. Most respondents use ash and soil to wash their hands and soaps are only used for bathing purposes. The practice of handwashing is also dependent on access to water, which is reduced in summers. A key challenge in tackling open defecation is therefore the lack of access to water and lack of associated hand washing.

Due to migration, mothers are engaged in agricultural activities in addition to their time spent on walking to fields for open defecation. These responsibilities and practices reduce the time mothers can dedicate to childcare.

There was a gap in understanding around the characteristics of a safe toilet. For example, a respondent felt that having a pit latrine is safe, but in reality the pits are not lined and there is always the potential for ground water contamination.

There is uneven coverage of sanitation, as some households were not clear on how to access resources. Households with access to financial resources did not feel that the toilets were of good standard in terms of ventilation and physical appearance. The lack of access to water was also noted as a challenge for the utilisation of toilets. Overall, very few houses have functional toilets.

Most of the toilets visited in schools were in poor condition with broken doors, in waterlogged fields and in a generally non-functional state. There was no discussion on managing faeces for infants and the safe disposal of infant faeces, but the fact that it did not come up may indicate a lack of knowledge on the link between the improper disposal of faeces and infection.

## Water Resource Management

Overall, poor water management in the villages had a knock-on impact in terms of flood risk and water logging. These events result in the breeding of mosquitoes and pose a health risk while also limiting access to water for food production.

Residents have typically highlighted flooding and water logging outside houses during the Chumasa. In addition, during the transect walk the team observed an Aaganwadi Centre located in a water logged area and noted the surrounding areas are also waterlogged.

Unlined pit latrines pose a high risk of contamination. The community claims that the water table is deep and low, but it appears that the water table was shallow and this implies a higher risk of contamination of ground water in Ghatol. The discussions also brought out the potential risk of fluoride and its association with skin diseases.

In Ghatol, water availability was not seen to be a barrier, but in Kushalgarh the summer months are challenging for water access. The seasonal calendar in the section below highlights the months of water shortages in the study area. It has been observed that water scarcity in the area has a direct relationship with hand washing practices, hygiene, the feasibility of using toilets and the safe preparation of food. Furthermore, if women have to spend excessive time collecting water, the time they have available for childcare and infant feeding is also reduced.

Overall access to water seemed higher in Ghatol due to its proximity to the canal area. However, some households in Ghatol highlighted that access to water for irrigation purposes is not standard throughout the block. Kushalgarh relied heavily on ponds and supplementary water sources for both drinking and irrigation.

## Energy Access

Wood is the predominant source for cooking fuel, which has an impact of methods of cooking food for infant, time taken to cook food and potential health impacts in terms of air pollution. The high upfront costs of LPG cylinders were noted to be a barrier for the use of clean energy sources for cooking.

During the transect walks, it was noted that most households collected wood and stored it on the roof during dry season and in the house or in toilet structures in wet weather. There is a time on women in Kushalgarh and a mixture of men and women in Ghatol for collecting and storing wood, which reduces the time available for feeding infants.

Solar technology has not penetrated the villages, and whilst a few houses had solar panels the numbers are low. Electricity supply is erratic and limited to a few hours a day in both blocks.

## Seasonal Calendar Summary

Flooding, high income, low income, water shortages, health problems, school holidays, school fee payments, markets, energy use and crop yields were documented for each village. This information is useful to assess the timing for interventions in schools and understand the points in the year which are challenging times for households to be involved. For example, the Chumasa brings in the challenge of flooding (from May to June) which is linked to a higher rate of health related challenges. Water scarcity was noted during the summer months which has direct and indirect effects on the health of caregivers and children, food preparation and pathways for infections.

# Chapter 5 Results



## Household Survey

**Age & Sex Distribution:** Age and sex are the basic demographic characteristics with an association to vital outcomes of the PANChSHEEL project. Table 12 provides the age and sex distribution of the population covered by the household survey. Our survey has covered slightly higher numbers of females than males in both the blocks, with minor variations in the age distribution by sex.

**Table 12**

Age distribution of population covered by household survey by sex and block

Age		Ghatol		Kushalgarh		Total	
		Male	Female	Male	Female	Male	Female
0-1	Count	123	91	113	120	236	211
	%	21.7%	15.2%	16.9%	15.4%	19.1%	15.3%
2-4	Count	52	60	65	81	117	141
	%	9.2%	10.0%	9.7%	10.4%	9.5%	10.2%
5-9	Count	50	65	52	95	102	160
	%	8.8%	10.8%	7.8%	12.2%	8.2%	11.6%
10-18	Count	54	60	81	126	135	186
	%	9.5%	10.0%	12.1%	16.2%	10.9%	13.5%
19-29	Count	144	195	185	198	329	393
	%	25.4%	32.5%	27.6%	25.4%	26.6%	28.5%
30-49	Count	103	86	113	106	216	192
	%	18.1%	14.3%	16.9%	13.6%	17.4%	13.9%
50 above	Count	42	43	61	54	103	97
	%	7.4%	7.2%	9.1%	6.9%	8.3%	7.0%
Total	Count	568	600	670	780	1238	1380
	%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Mean age (SD)		19.5	19.9	21.1	18.7	20.3	19.2
		(17.1)	(17.1)	(17.7)	(16.5)	(17.4)	(16.7)

**Main Occupation:** Information on individual's main occupation and their seasonal migration for work during the past year was obtained for household members aged more than 18 years. Figure 22 provides information on the occupation of adults by sex according to the blocks. All females in both the blocks, and all the males in Kushalgarh block were involved in the agriculture industry for their main occupation. For a few males in Ghatol block, the main occupation was 'businesses' and 'job in formal sector'.

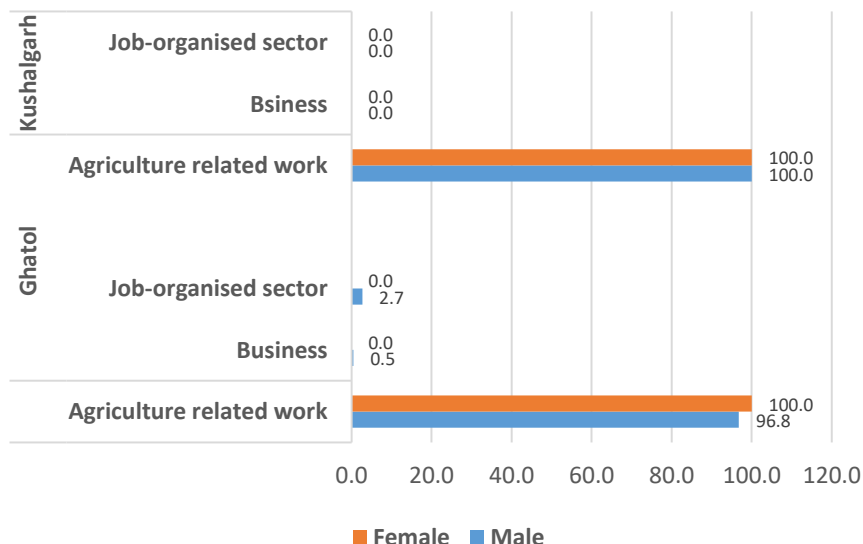


Figure 22 - Occupation of adults by sex and according to block

**Migration for work:** Figure 20 provides the village-wise proportion of adults (aged 18+ years) who migrated for work during the past year according to sex. It is very clear that out migration (intra and inter-state) for livelihood was substantially higher for both males and females in the Kushalgarh block as compared to the Ghatol block. In four villages of the Kushalgarh block, 29 to 44% females and 44 to 60% males have migrated in search of employment in the past one year. A negligible proportion of females in Ghatol block have migrated to other places inside or outside the state in search of employment. At the block level, 5.4% of males and 0.4% of females of the Ghatol block have migrated, while in the Kushalgarh block, 52% of males and 37% of females migrated during the past year.

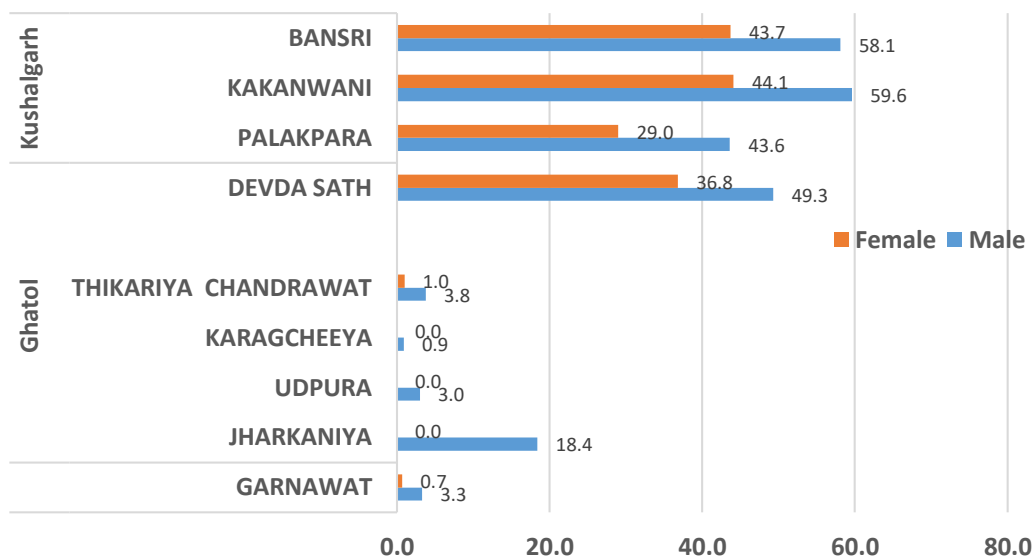


Figure 23 - Adults (18+ years) who migrated for work

A total of 217 heads of household in Ghatol and 228 households heads in Kushalgarh were asked 'whether any member(s) of your household migrated for work in last one year'. In response, 20% households in Ghatol and 74% households in Kushalgarh experienced migration of members.

In Ghatol, 75% of migrations included only the head of household, 18% included the mother, 4.5% of migrations occurred without the other, and 2.3% included children. In Kushalgarh, 17% of migrations included only the head of the household, 11% included the mother, 68% occurred without the mother, and 4% occurred with children.

**Possession of Aadhar card:** Figure 24 provides the village-wise proportions of household populations who possess an Aadhar card, according to sex. At the time of the survey, 70% or more of the surveyed population had an Aadhar card with them.,

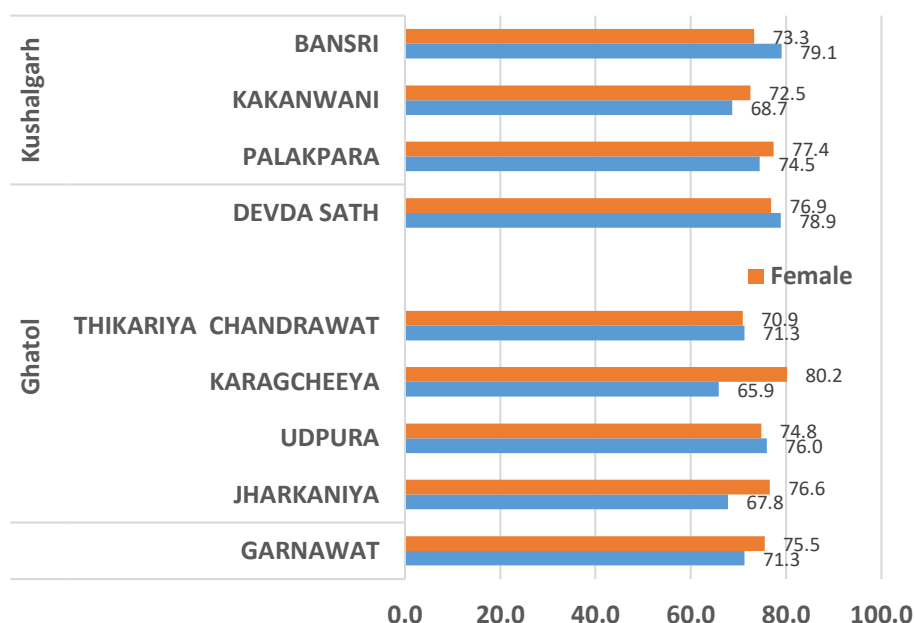


Figure 24 - Household members by sex with Aadhar card

**Marital status by age and sex:** Marital status of the population covered by the household survey by age and sex according to blocks is reflected in Table 13. Marriage patters were observed to be different in the two blocks, with a small proportion in the age group of 10 to 18 years who are married in Kushalgarh block, while more than one-fourth of the males and 14% of the females in the same age group were married in Ghatol. Similarly, the married population in the age group of 19 to 29 years is slightly higher in Ghatol, compared to Kushalgarh. This implies that the age at marriage of both males and females is higher in Kushalgarh compared to Ghatol.

**Table 13**

Marital status of the population by age, sex and block

	Age		Ghatol		Kushalgarh	
			Single	Married	Single	Married
<b>Male</b>	0-1	Count	100	0	113	0
		%	100.0%	0.0%	100.0%	0.0%
	2-4	Count	38	1	65	0
		%	97.4%	2.6%	100.0%	0.0%
	5-9	Count	42	0	52	0
		%	100.0%	0.0%	100.0%	0.0%
	10-18	Count	31	11	80	1
		%	73.8%	26.2%	98.8%	1.2%
	19-29	Count	7	106	33	152
		%	6.2%	93.8%	17.8%	82.2%
	30-49	Count	1	78	1	112
		%	1.3%	98.7%	.9%	99.1%

	Age	Ghatol			Kushalgarh	
			Single	Married	Single	Married
	50 above	Count	0	31	0	61
		%	0.0%	100.0%	0.0%	100.0%
	<b>Kushalgarh</b>	<b>Count</b>	<b>219</b>	<b>227</b>	<b>344</b>	<b>326</b>
		%	49.1%	50.9%	51.3%	48.7%
	Age	Kushalgarh		Kushalgarh		
			Single	Married	Single	Married
<b>Female</b>	0-1	Count	69	0	120	0
		%	100.0%	0.0%	100.0%	0.0%
	2-4	Count	47	0	81	0
		%	100.0%	0.0%	100.0%	0.0%
	5-9	Count	53	1	94	1
		%	98.1%	1.9%	98.9%	1.1%
	10-18	Count	38	6	124	2
		%	86.4%	13.6%	98.4%	1.6%
	19-29	Count	10	140	31	167
		%	6.7%	93.3%	15.7%	84.3%
	30-49	Count	0	64	0	106
		%	0.0%	100.0%	0.0%	100.0%
	50 above	Count	0	33	0	54
		%	0.0%	100.0%	0.0%	100.0%
	<b>Total</b>	<b>Count</b>	<b>217</b>	<b>244</b>	<b>450</b>	<b>330</b>
		%	47.1%	52.9%	57.7%	42.3%

**Literacy profile of household members:** Table 14 provides details of educational attainment for all household members aged above six years by village and sex. Overall, 78% of males and 49% of females in the nine surveyed villages are literate and have attended formal school. Literacy levels among both males and females are slightly better in Kushalgarh as compared to Ghatol block. There were huge differences among the nine villages in terms of years of schooling. In nine villages among males: 39% completed 1 to 5 years of schooling; 8% completed 6 to 7 years; 38% completed 8 to 10 years; and 15% completed 10+ years of schooling. However, variation in years of schooling were minimal among females. The median number of years of schooling completed by both males and females in nine surveyed villages ranged between five and ten years.

**Table 14**  
Literacy in individuals > 6 years of age

Village/Block	Popul	Pop > 6 yrs	Males															Females																						
			Literate		Ever attended school		Years of schooling					Dropped-out of school			Literate		Ever attended school		Years of schooling					Dropped-out of school																
			No.	%	No.	%	0-5	6-7	8-10	10+	11-12	13+	14+	15+	No.	%	No.	%	0-5	6-7	8-10	10+	11-12	13+	14+	15+	No.	%	%											
<b>Ghatol Block</b>	100	71	71.0%	54	54.0%	15	21.1%	4	7.4%	23	41.1%	0	0.0%	8	14.9%	44	82.5%	0	0.0%	220	77	40.0%	119	43.9%	119	25.3%	4	2.0%	15	3.7%	5	3.5%	8	5.0%	8	5.0%	10	7.0%	10	7.0%
<b>Kushalgarh</b>	143	88	61.5%	88	61.5%	15	17.0%	6	6.9%	38	43.1%	11	12.5%	0	0.0%	42	47.7%	0	0.0%	449	205	45.6%	194	43.2%	194	43.2%	20	4.5%	20	4.5%	10	2.2%	10	2.2%	10	2.2%	10	2.2%		
<b>Block Total</b>	243	159	65.4%	142	58.4%	30	12.3%	10	4.1%	61	25.2%	11	4.5%	8	3.3%	86	35.2%	0	0.0%	669	282	41.9%	313	46.9%	313	46.9%	34	5.1%	35	5.1%	18	2.7%	18	2.7%	18	2.7%	18	2.7%		
<b>Kushalgarh Block</b>	139	106	76.3%	74	53.2%	15	10.8%	6	4.3%	38	27.3%	11	7.9%	0	0.0%	42	30.2%	0	0.0%	449	205	45.6%	194	43.2%	194	43.2%	20	4.5%	20	4.5%	10	2.2%	10	2.2%	10	2.2%	10	2.2%		
<b>Ghatol Block</b>	100	71	71.0%	54	54.0%	15	21.1%	4	7.4%	23	41.1%	0	0.0%	8	14.9%	44	82.5%	0	0.0%	220	77	40.0%	119	43.9%	119	25.3%	4	2.0%	15	3.7%	5	3.5%	8	5.0%	8	5.0%	10	7.0%	10	7.0%



Among the school/college going population aged 5 to 18 years, information was collected on the type (Public/Private) of school attended. In both the blocks, more than 95% of the population attended Government/Public school/college for their education (Figure 25).

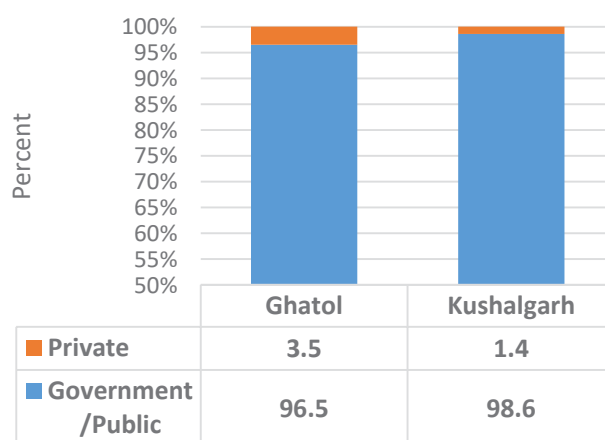


Figure 25 - Type of school/college attended by 5-18-year-olds

On the other hand, around three-fifth of Ghatol's population belongs to the school/college going age group between 5 and 18 years, while in Kushalgarh block more than 78% of the population have to travel outside the village for attending school/college (Figure 26). Thus, in the Ghatol block, 40 children/adolescents study outside the village and to cover a median distance of 1.5 kilometers, while this figure for 263 children/adults of Kushalgarh was 300 kilometers (this is true for children who did not migrate outside of the village in the school year).

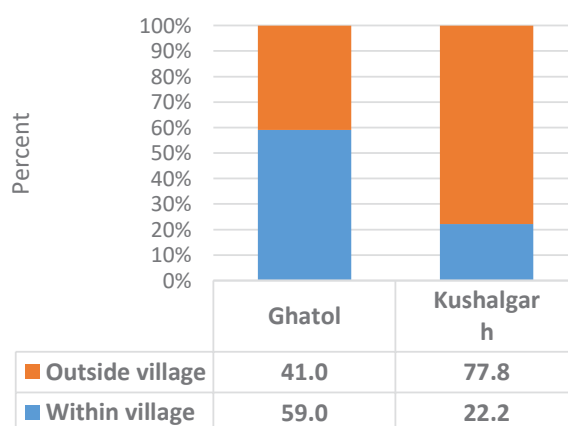


Figure 26 - Location of school/college attended by 5-18 year old

Dropout from school/college: Among those who have ever attended school, slightly less than half of males and one-third among females in the Ghatol block have dropped out or stopped their studies. Dropout rates were slightly lower in Kushalgarh block, with a dropout rate of 17% for males and 11% for females. The median grades at which males have stopped studies was 9th grade in Ghatol and 8th grade in Kushalgarh. Median standard at which females have stopped studies was 8th grade in Ghatol and 6th grade in Kushalgarh. In Ghatol, family members discontinued their studies in 111 households, and some of the main reason behind this is due to lost interest in study (30%), being busy in in agriculture work (22%) and participation household work (19%). Household work (53%) and failure in a particular class

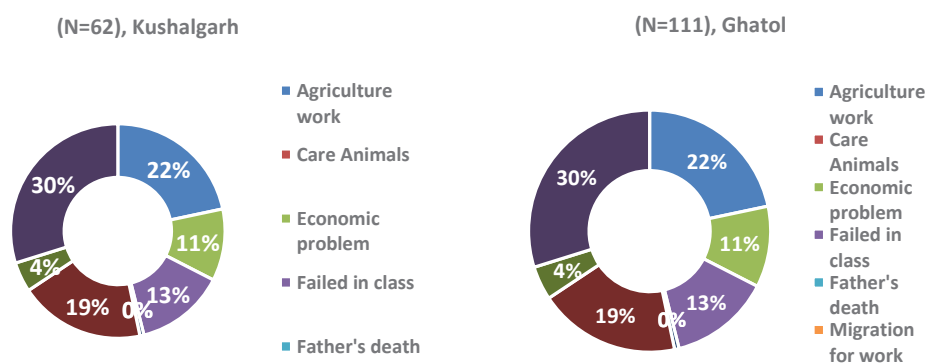


Figure 27 - Main reason for stopping studies

(13%) were the main reasons for discontinuing studies, as cited by 62 households of Kushalgarh block (Figure 27).

Caring of school/college going children by household members: If any member of the household aged five years or more at the time of the survey was attending school, information about child care was enquired from the head of the household. Within 122 households in Ghatol and 145 households in Kushalgarh there were school/college going children.

Table 15 provides detailed information about the household member who was mainly involved in managing households chores, communicating with school and attending parent-teacher meetings. In both blocks, in more than 70% of the households the fathers generally guided their children in educational and school activities. Only in 9% and 6% of households in Ghatol and Kushalgarh blocks, respectively, did mothers led involvement in the child's education. However, in 14% and 8% of households of Ghatol and Kushalgarh blocks, respectively, no one in the family looked into education of the child. Only 89 parents in Ghatol and 127 parents in Kushalgarh were told that 'parent-teacher meeting' occur in the schools/colleges. In Ghatol, 83% of these meetings were attended by the father, while this figure was only 57% in Kushalgarh, perhaps due to migration of fathers in these families. In Ghatol, 8% of these meetings were attended by mother and this figure was only 12% in Kushalgarh.

Table 15

Who in the family looks into education of child

Who in Family		Who looks into education		Who in family attend meetings	
		Ghatol	Kushalgarh	Ghatol	Kushalgarh
Child's mother	Count	11	8	7	15
	%	9.0%	5.5%	7.9%	11.8%
Child's father	Count	86	120	74	72
	%	70.5%	82.8%	83.1%	56.7%
Child's grandparents	Count	2	2	4	8
	%	1.6%	1.4%	4.5%	6.3%
Brother/sister	Count	5	4	3	31
	%	4.1%	2.8%	3.4%	24.4%
Other family members/ relatives	Count	1	0	0	1
	%	1.6%	0%	0%	0.8%

Who in Family		Who looks into education		Who in family attend meetings	
		Ghatol	Kushalgarh	Ghatol	Kushalgarh
	%	.8%	0.0%	0.0%	.8%
No one looks	Count	17	11	1	0
	%	13.9%	7.6%	1.1%	0.0%
Total	Count	122	145	89	127
	%	100.0%	100.0%	100.0%	100.0%

In those households where there was a school/college going child, half of the elder children in Kushalgarh and two-thirds in Ghatol supported the family in household employment or agriculture (Table 16). In more than 83% of households in both blocks, elder siblings took care of smaller siblings. In 50% and 88% of Ghatol and Kushalgarh households, respectively, the primary care giver supervises children's homework and in 68% and 89% of Ghatol and Kushalgarh households, respectively, family members of the child attended the parent-teacher day. On the other hand, in 78% of the households in Ghatol and in 94% households in Kushalgarh, parents and other close relatives rarely or never visited school/college and kept relationship with teachers. On similar lines, in 48% of the households in Ghatol and in 12% of households in Kushalgarh, parents or caregivers did not regularly enquire about the education or performance of their child. In contrast, in more than 97% of households of both the blocks 'Wagdi' was the language of communication at home, while majority of caretakers of children in Ghatol (94%) and in Kushalgarh (84%) said that 'Hindi' was the medium of communication between teachers and parents. This reflects a potential language barrier between parents and teachers.

**Table 16**

Caring practices followed by primary care taker of the school/college going child

Practice	Response		Ghatol	Kushalgarh
<b>Do elder children support family in household employment or agriculture?</b>	Yes	Count	83	75
		%	67.5%	51.7%
<b>Do elder children take care of smaller siblings?</b>	Yes	Count	88	129
		%	83.8%	90.8%
<b>How often do parents and other close relatives like grandparents/elder siblings of school going child visit school/ college and keep relationship with teacher(s)?</b>	Once a week	Count	2	5
		%	1.6%	3.4%
	Once in a month	Count	26	4
		%	21.1%	2.8%
	Rarely	Count	83	125
		%	67.5%	86.2%
	Never	Count	12	11
		%	9.8%	7.6%

Practice	Response		Ghatol	Kushalgarh
Do primary care giver supervise child's homework?	Yes	Count	59	126
		%	50.0%	88.1%
Do parents and other close relatives like grandparents/elder siblings of school going child attend school on parent teacher day?	Yes	Count	77	124
		%	67.5%	86.7%
What language is spoken by teachers while communicating with parents?	Hindi	Count	115	121
		%	93.5%	84.0%
	Wagdi	Count	8	23
		%	6.5%	16.0%
What language is used for communication in the house?	Hindi	Count	4	6
		%	1.9%	2.6%
	Wagdi	Count	212	222
		%	98.1%	97.4%
Do parent's teacher's meeting happen in the school/ college attended by your child?	Yes	Count	87	127
		%	71.3%	88.2%
	No	Count	27	12
		%	21.1%	8.3%
	Not aware of such meetings	Count	8	5
		%	6.6%	3.5%
Does parent or caregiver of child regularly enquires about the education/ performance of child with teachers?	Yes	Count	64	127
		%	52.0%	88.2%
	No	Count	34	14
		%	27.6%	9.7%
	No	Count	25	3
		%	20.3%	2.1%
<b>Total</b>		Count	123	145
		%	100.0%	100.0%

**Socio-economic characteristics of households:** Socio-economic information was obtained from 217 and 228 households in Ghatol and Kushalgarh block, respectively. The 445 surveyed households in both the blocks follow 'Hindu' religion. Around 60% of surveyed households in Ghatol and 90% in Kushalgarh were in 'scheduled tribes' and 34% and 10% respectively were 'scheduled castes' (Figure 29).

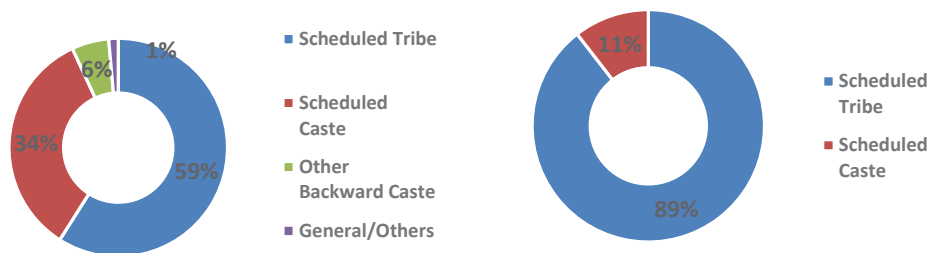


Figure 29 - Breakdown of castes in Ghatol and Kushalgarh

Socio-economic status (SES) determines the affordability and utilization of health services. Composite scales are generally used to measure SES, using a combination of social and economic variables. In the present study, a revised version of Kuppaswamy's scale was used to estimate the SES of the household. Table 17 provides the SES of surveyed households according to block. Literacy levels of the head of the households of the blocks were similar, with more than half of the head of the households being illiterate or having only completed primary school. In terms of occupation, there were also major differences between the blocks, with 7% of the heads of households being agricultural laborers without any landholding, while this figure is 11% in Kushalgarh. Income patterns were different (Table 18), with only 10% of households from Ghatol and 64% from Kushalgarh earning a monthly income below Rs. 2,020. Using these three variables and the respective weights provided in Table 18, the SES of each household was estimated. Around 34% of Ghatol and 59% of Kushalgarh households fell into the lower/upper and lower SES categories. The remaining 66% in Ghatol and 41% in Kushalgarh were classified in the lower/upper and middle SES categories.

Table 17

Socio-Economic Status using revised Kuppaswamy's Scale

Response		Weighing of score	Block		
			Ghatol	Kushalgarh	
Education of the Head of household	Illiterate	1	Count	75	61
			%	34.6%	26.8%
	Primary school certificate	2	Count	39	94
			%	18.0%	41.2%
	Middle school certificate	3	Count	37	29
			%	17.1%	12.7%
	High school certificate	4	Count	52	33
			%	24.0%	14.5%
	Intermediate or diploma	5	Count	3	0
			%	1.4%	0.0%
	Graduation	6	Count	7	6
			%	3.2%	2.6%
	Above graduation	7	Count	4	5
			%	1.8%	2.2%

Response		Weighing of score	Block		
			Ghatol	Kushalgarh	
Occupation of the Head of household	Unskilled or Agriculture labourer	2	Count	15	26
			%	6.9%	11.4%
	Agriculture land owner	5	Count	196	193
			%	90.3%	84.6%
	Skilled worker in factory or business	6	Count	1	9
			%	.5%	3.9%
	Technicians and associate	8	Count	1	0
			%	.5%	0.0%
	Professionals	9	Count	4	0
			%	1.8%	0.0%

**Table 18**

Monthly income for head of household and weighted Kuppuswamy's scale

Monthly income of Head of household ≤ 2020	1	Count	22	146	
		%	10.1%	64.0%	
2021 - 6059	2	Count	129	80	
		%	59.4%	35.1%	
6060 - 10109	3	Count	57	1	
		%	26.3%	.4%	
10110 - 15159	4	Count	2	0	
		%	.9%	0.0%	
15160 - 20209	6	Count	3	0	
		%	1.4%	0.0%	
20210 - 40429	10	Count	4	1	
		%	1.8%	.4%	
<b>Weighted Kuppuswamy's scale of household</b>	Lower or upper lower	1-8	Count	73	135
			%	33.6%	59.2%
	Lower middle or upper middle	9-26	Count	144	93
			%	66.4%	40.8%
<b>Total</b>		Count	217	228	
		%	100.0%	100.0%	
<b>Mean (SD) score</b>			9.8	8.5	
			(2.7)	(1.8)	

**Land holding:** Figure 30 presents the mean and median land holdings by block. In Ghatol, all of the land possessed by households was irrigated agricultural land, and each of the surveyed households had an average of 4.3 bighas of irrigated land, median irrigated land holding size was only 2.0 bighas. In Kushalgarh, although each household had a mean of 3.4 bighas, only 1.8 bighas of the land was irrigated.

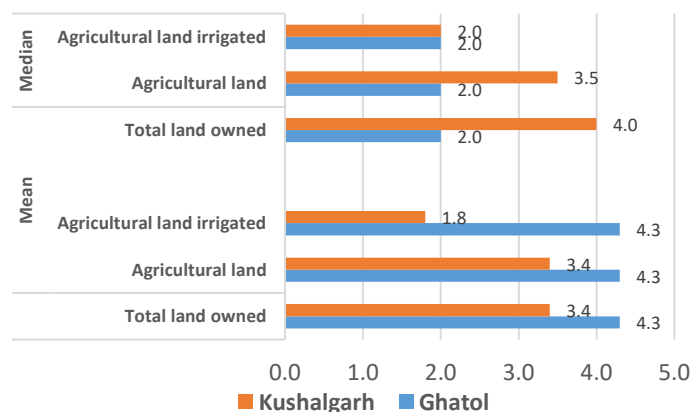


Figure 30 - Mean & Median land holding (in Bigas) by blocks

**Livestock & Milk production:** Table 19 presents the availability of livestock and the consumption of produce from the livestock according to blocks. Livestock (cows, buffaloes, goats/sheep, chicken/duck) was more available in Kushalgarh block as compared to Ghatol. Around 73% households in Ghatol and 90% of households in Kushalgarh had some kind livestock (cows/bulls/buffaloes) in their house. Mostly they were used for milk and in agricultural field work. Very few households sold their milk outside and the collected data reflects in-house consumption of milk and milk products. Availability of goats/sheep was slightly less with only 43% households in Ghatol and 74% in Kushalgarh keeping them, and in more than 82% of the houses the milk/curd from goat milk was 'consumed at home'. Very few households of Ghatol and slightly more than half of households of Kushalgarh reared chicken/ducks. Households who nurture chicken/ducks were asked what they do with chicken/duck nurtured at the house, around half of them in Kushalgarh told that 'they would only consume these in the house', while the remaining residents also sell the surplus. In more than 70% of the houses in both the blocks, animals stay under the same roof and family members.

Table 19

Livestock availability at home and use of produce from live stock by households

Characteristic	Response	% Ghatol	% Kushalgarh
Households with Cows, bulls, or buffaloes	Yes	73.3	89.9
What is done with above animal milk, butter, curd?	Only consumed in house	89.3	96.6
	Only sold outside house	2.5	0.0
	Both consumed in house and sold outside	8.2	3.4
Households with goats and/or sheep	Yes	43.3	74.1
What is done with above animal milk, butter, curd?	Only consumed in house	81.9	98.2
	Only sold outside house	2.1	0.0



Characteristic	Response	% Ghatol	% Kushalgarh
	Both consumed in house and sold outside	16.0	1.8
Households with Chickens or ducks	Yes	1.4	53.9
What is done with chickens/ducks nurtured in the house?	Only consumed in house	0.0	50.4
	Only sold outside house	0.0	0.8
	Both consumed in house and sold outside	100.0	48.8
Do these animals stay in the same dwelling unit?	Yes	70.4	79.8
Total		217	228
		100.0%	100.0%

**Health care seeking practices:** The household heads were asked, 'where would they generally go first for treatment' if any household member gets sick and when a child below three years of age got sick. Figure 31 provides information on care seeking practices of the 445 households. If any household member got sick, 21% in Ghatol and as high as 74% in Kushalgarh would go to the community health centre (CHC). Only 7% of respondents in Kushalgarh saw a private doctor, while 38% do in Ghatol. When household heads were asked for reasons for not going to public health facilities, reasons were 'poor quality of care' (47% in Ghatol; 51% in Kushalgarh) and 'facility opening times not convenient' (38% of Kushalgarh). On the other hand, when a child under three years of age got sick half of the Kushalgarh parents would first seek care from CHC when this figure in Ghatol was only 22%. In Ghatol around 37% would seek care from a private doctor; 28% at the PHC; and only 9% from village from the Rural Medical Practitioners (RMP)<sup>21</sup> /quack<sup>22</sup>. However, in Kushalgarh, only 11% would seek care from a private doctor; 3% at the CHC; and as high as 33% from village RMP/quack. It was reported in 74% of households in Ghatol and 64% in Kushalgarh that 'any community health worker (ASHA/ANM/AWW) visited their house to advice on child play/development' in the past month. When asked who visited in Ghatol, responses were ASHA (48%); ANM (22%); and AWW (30%) and in Kushalgarh, ASHA (69%); ANM (16%); and AWW (15%).

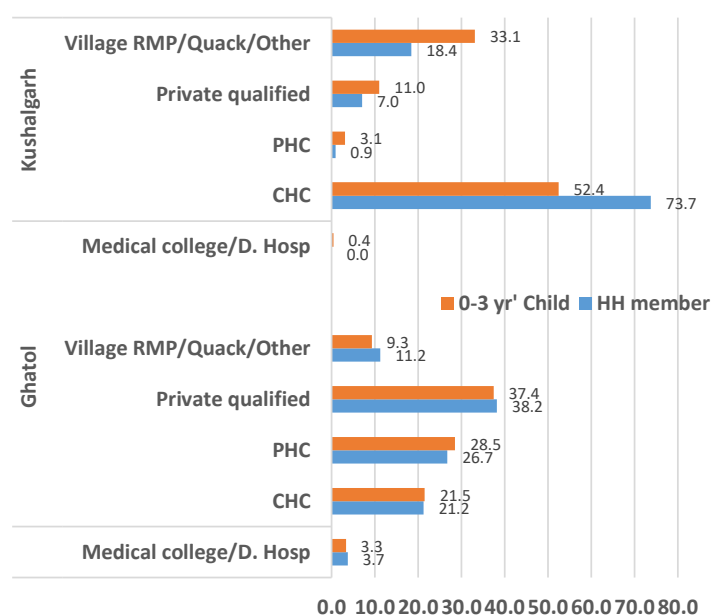


Figure 31 - First place of visit if household member and child is sick

21. The Rural Medical Practitioners have no degree, unqualified healthcare practitioner practicing allopathic medicine without any formal or institutional registration.

22. NEED DEFINITION

**Table 20**

Other housing characteristics by blocks

Characteristics	Response		Ghatol	Kushalgarh
<b>Does any usual member of this household have a bank account or a post office account?</b>	Yes	Count	202	212
		%	93.1%	93.0%
<b>Is any usual member of this household covered by a health insurance?</b>	Yes	Count	2	1
		%	0.9%	0.4%
<b>Does your family have a Ration card?</b>	Yes	Count	213	227
		%	98.2%	99.6%
<b>Does your household get any ration/ food using that Ration card from Public Distribution System (PDS)?</b>	Yes	Count	197	208
		%	93.4%	91.6%
<b>Got kerosene from PDS out of all HH</b>		Count	176	168
		%	81.1%	73.7%
<b>Got wheat from PDS out of all HH</b>			193	207
		%	88.9%	90.7%
<b>Does this household has a BPL card?</b>	Yes	Count	32	55
		%	14.8%	24.1%
<b>Do you cultivate a 'kitchen garden' in your house?</b>	Yes		14	4
			6.5%	1.8%
<b>Did any member of this household worked under MNREGA?</b>	Yes	Count	50	39
		%	23.0%	17.1%
<b>Total Households</b>		Count	217	228
		%	100.0%	100.0%

**Other characteristics of households:** In each of the two blocks, 93% of the surveyed households had a bank account (Table 15). However, a negligible number of households had health insurance coverage (0.9% in Ghatol & 0.4% in Kushalgarh). Around 98% of the households in both the blocks have a 'ration card or public distribution system card', and more than 90% of households in both the blocks receive rations and food using that card. An average of 4.0 (1.6) family members in Ghatol and 4.7 (1.7) family members in Kushalgarh were assigned to a card. The color and level of the of the card in Ghatol varied from Antoday/yellow (8%); Above Poverty Line (APL)/Blue (71%); Below Poverty Line (BPL)/Green (13%); and BPL/red (7%) and in Kushalgarh, Antoday/yellow (6%); APL/Blue (58%); BPL/Green (13%); and BPL/red (23%). When enquired about how frequently they get rations from PDS, 77% in Ghatol and 99% in Kushalgarh said that they get it 'monthly'. When using the ration/ PDS card, 89% of Ghatol and 81% of Kushalgarh households received kerosene and around 90% of these households received two litres. Similarly, using the ration/PDS card, almost all the households received wheat of different quantities, ranging from 10 to 45 kilograms with an average of 20.9 (8.5) kilograms in Ghatol and 23.9 (8.5) kilograms in Kushalgarh. Only 15% of households in Ghatol and

24% in Kushalgarh said that they have BPL card, even though 23% and 17% households of respective blocks said that at least one member of their house worked under the MNREGA scheme. In Ghatol, an average of 3.0 (4.8) family members per household worked under the MNREGA scheme and only 1.4 (0.5) family members in worked under MNREGA in Kushalgarh. Only 7% of households in Ghatol and 2% of households in Kushalgarh cultivated a 'kitchen garden' in their house.

**Household amenities:** Figure 32 provides household amenities according to block. There was no specific pattern in terms of availability of amenities between the blocks. Irrespective of the block, availability of amenities other than mobile phones were generally poor.

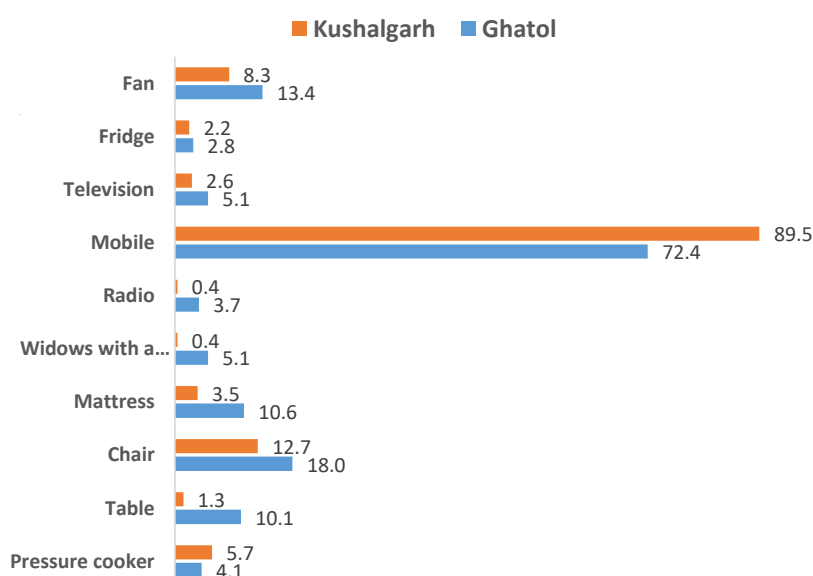


Figure 32 - Household amenities by block

**Drinking water:** Table 21 provides information about the availability, consumption and use of water in households. In both blocks, around half of the households relied on their own 'hand pump/tube well/borewell' as the main source for drinking water, while 43% in Ghatol households and 33% of Kushalgarh households relied on public hand pump/bore wells. The hand pump was located in the participant's 'own dwelling' in 35% of the households in Ghatol and 2% in Kushalgarh. In both the blocks, it took on an average of six minutes to fill a standard 20 litre bucket with drinking water from the available source. Drinking water was available throughout the year, and in nearly all cases it is the responsibility of women over the age of 15 to collect water. Drinking water was stored in pots in all households. Only 59% of households in Ghatol and 2% of households in Kushalgarh used strain cloth/chalani to treat their drinking water.

Table 21

Availability and consumption of water for household use by blocks

Water Availability	Response		Ghatol	Kushalgarh
Main source of drinking water for members of the house	Hand Pump into Dwelling/Yard/Plot	Count	119	102
		%	55.9%	44.7%
	Public Hand Pump/ Tube well/Borehole	Count	92	75
		%	43.2%	32.9%

Water Availability	Response		Ghatol	Kushalgarh
	Uncovered Dug Well	Count	1	51
		%	.5%	22.4%
	Surface water (river/dam/lake/pond/stream)	Count	1	0
		%	.5%	0.0%
<b>Water source located in own dwelling unit</b>	Yes	Count	75	4
		%	35.2%	1.8%
<b>Mean (SD) time that takes to fill a standard bucket of 20 liters</b>	In minutes	Mean (SD)	6.2 (7.6)	6.2 (4.2)
<b>Is water available from the source throughout the year?</b>	Yes	Count	197	225
		%	99.0%	99.1%
<b>Who usually goes to collect water for bathing and cleaning utensils in your household?</b>	Adult woman $\geq 15$ years	Count	212	227
		%	99.5%	99.6%
	Adult man $\geq 15$ years	Count	1	1
		%	.5%	.4%
<b>Mean (SD) time does it take to collect water for bathing and cleaning utensils for the household in a day?</b>	In minutes	Mean	117 (56)	55 (15)
<b>Mean (SD) number of times in a day do you collect water for bathing and cleaning dishes.</b>	In minutes	Mean	3.4 (1.4)	2.7 (1.3)
<b>Where do you generally store drinking water?</b>	In Pots	Count	213	226
		%	100.0%	99.6%
<b>Mean (SD) amount of water used for drinking in summer</b>	In bucket of 20 liters	Mean	68 (43) & 60	55 (27) & 60
<b>Mean (SD) amount of water do you use for cooking, washing, bathing?</b>	In bucket of 20 liters	Mean	217 (100)	107 (61)

Water Availability	Response		Ghatol	Kushalgarh
<b>Mean (SD) amount of you spend on total water use in house in a year?</b>	In Rupees	Mean	254 (522)	3.4 (45)
<b>Does this household do anything to the water to make it safer to drink?</b>	Yes	Count	125	4
		%	58.7%	1.8%
<b>What does this household usually do to make the water safer to drink?</b>	Boil	Count	3	0
		%	2.5%	0.0%
	Strain through a cloth	Count	77	1
		%	64.2%	33.3%
	Add bleach/ chlorine tablets	Count	7	1
		%	5.8%	33.3%
	Sand/composite	Count	3	1
		%	2.5%	33.3%
	Chalni (filter through cloth)	Count	30	0
		%	25.0%	0.0%
<b>What do you do with water from cooking, bathing, washing?</b>	Throw in yard	Count	1	1
		%	.5%	.4%
	Re-use for growing vegetables	Count	5	1
		%	2.4%	.4%
	Leave it to dry by itself	Count	205	224
		%	96.7%	98.2%
	Throw in gutter	Count	1	2
		%	.5%	.9%
<b>Where do households wash their hand?</b>	Some specific place	Count	51	58
		%	23.9%	25.4%
	No specific place	Count	162	170
		%	76.1%	74.6%
<b>Observe Presence of water at the place of hand washing.</b>	Water is available	Count	74	27

Water Availability	Response		Ghatol	Kushalgarh
		%	52.9%	12.9%
	Not available	Count	66	183
		%	47.1%	87.1%
<b>Observe Presence of Soap, ash, detergent</b>	Soap or Detergent	Count	22	14
		%	10.5%	6.3%
	Mud or Ash or Sand	Count	174	53
		%	83.3%	24.0%
	None	Count	13	154
		%	6.2%	69.7%
<b>Total Households</b>		Count	217	228
		%	100.0%	100.0%

**Non-drinking water:** According to the heads of households, a total mean time of around two hours was required to collect water for bathing & cleaning in Ghatol and one hour in Kushalgarh. Water collection was required around three times a day in both the blocks (Table 21). The volume of drinking and non-drinking water consumption higher in Ghatol as compared to Kushalgarh. In more than 96% of the households in both blocks, water from washing and clothing was 'left to dry by itself', and in around one-fourth of the households of both the blocks cases 'there was a specific place for hand washing'. In 53% of the houses in Ghatol and 13% of the houses in Kushalgarh, investigators observed water at the hand wash locations and only in 11% and 6% of the households in respective blocks 'soap/detergent' was noted at the location of hand wash.

**Sanitation/Toilet:** In around 58% of Kushalgarh households and in 37% of the Ghatol households there was no toilet. Despite availability of toilets in the majority of households, people do not make use of them. Thus only 36% of households in Ghatol and 7% in Kushalgarh were really utilising their toilets (Figure 33). Among the households utilising their toilet in both blocks, more than 90% used flush to pit latrine, and less than 10% of utilised toilets have a light inside the toilet for night use.

Of the 99 households of Ghatol and 188 households of Kushalgarh without toilets:

- 59% in Ghatol and 89% in Kushalgarh would openly defecate in the field;
- 39% in Ghatol and 10% in Kushalgarh would open defecate in lake/river/stream;
- In both the blocks no costs was involved for sanitation purposes.

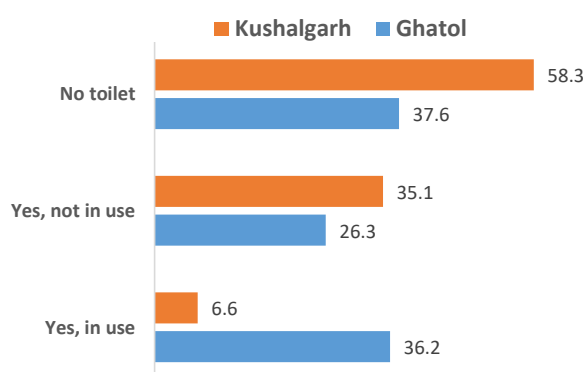


Figure 33 - Household Toilet use by blocks

Table 22 provides information about the association between toilet use and literacy/illiteracy status of the head of the household and socio-economic status of the household classified as ‘very poor’ and ‘poor middle’ SES. From the table, it is evident that in both the blocks, there was no clear-cut association between toilet use and literacy level, although toilet use was marginally greater in households with literate heads of household as compared to illiterate heads of household. Similarly, there was no association between toilet use and SES of the family, particularly in Kushalgarh block.

**Table 22**

Association of toilet use with literacy and socio-economic status

Block	Toilet facility availability		Literacy of head of house		Total
			Literate	Illiterate	
Ghatol	Yes, in use	Count	53	24	77
		%	38.1%	32.4%	36.2%
	Yes, not in use	Count	39	17	56
		%	28.1%	23.0%	26.3%
	No toilet	Count	47	33	80
		%	33.8%	44.6%	37.6%
<b>Block total</b>		<b>Count</b>	<b>139</b>	<b>74</b>	<b>213</b>
		<b>%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Kushalgarh	Yes, in use	Count	13	2	15
		%	7.8%	3.3%	6.6%
	Yes, not in use	Count	57	23	80
		%	34.1%	37.7%	35.1%
	No toilet	Count	97	36	133
		%	58.1%	59.0%	58.3%
<b>Block total</b>		<b>Count</b>	<b>167</b>	<b>61</b>	<b>228</b>
		<b>%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Block	Toilet facility availability		Socio-economic status		Total
			Very poor	Poor middle	
Ghatol	Yes, in use	Count	28	49	77
		%	38.9%	34.8%	36.2%
	Yes, not in use	Count	17	39	56
		%	23.6%	27.7%	26.3%
	No toilet	Count	27	53	80
		%	37.5%	37.6%	37.6%
<b>Block total</b>		<b>Count</b>	<b>72</b>	<b>141</b>	<b>213</b>
		<b>%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
Kushalgarh	Yes, in use	Count	4	11	15
		%	3.0%	11.8%	6.6%
	Yes, not in use	Count	48	32	80
		%	35.6%	34.4%	35.1%
	No toilet	Count	83	50	133
		%	61.5%	53.8%	58.3%
<b>Block total</b>		<b>Count</b>	<b>135</b>	<b>93</b>	<b>228</b>
		<b>%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>



**Energy & Housing material:** Table 23 provides information about energy use by households of the two blocks. More than 60% of the households in both blocks relied on 'fire wood' and more than 25% relied mainly on 'dung cakes' for cooking, with an average monthly cost of Rs. 129 in Ghatol and Rs. 45 in Kushalgarh. Less than 15% of homes in both blocks have a separate room which is used as a 'kitchen'. In both blocks, around 30% of homes used electricity for lighting purposes and the remaining households relied on kerosene lamps. Among households with electricity access, average monthly costs ranged from Rs. 707 in Ghatol to Rs. 149 in Kushalgarh. More than 80% of households with electricity in both blocks said they had 'power-cuts', with an average of two hours of availability per day. In more than 75% of the houses in both blocks, the floor, roof and walls were made of 'kutcha' material (Figure 34). Only in 10-12% of the houses in both blocks, these structures were made of 'pucca or concrete' material.

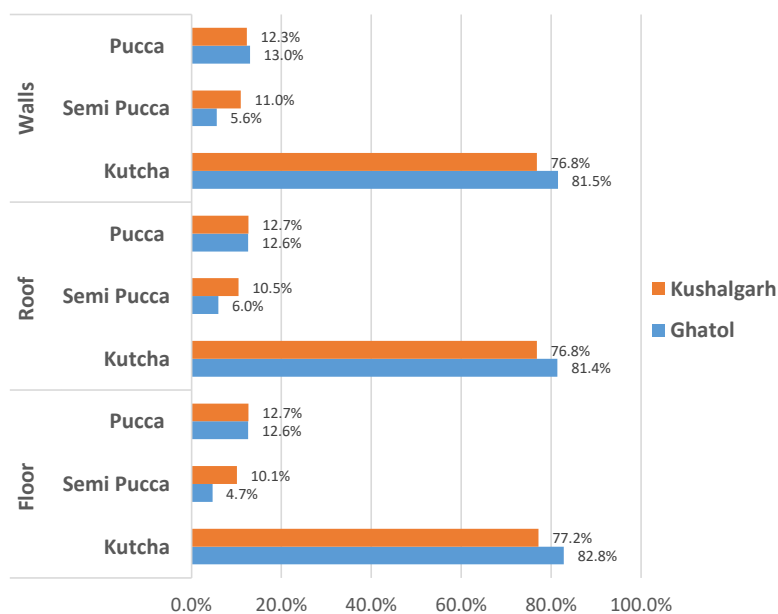


Figure 34 - Housing material according to blocks

Table 23

Energy availability and consumption by blocks

Energy availability and consumption	Response		Ghatol	Kushalgarh
Type of fuel mainly used for cooking food	Electricity	Count	2	0
		%	1.0%	0.0%
	LPG/Natural gas	Count	13	1
		%	6.2%	.4%
	Biogas	Count	3	3
		%	1.4%	1.3%
	Wood	Count	136	136
		%	65.1%	60.2%
	Agriculture waste	Count	1	0
		%	.5%	0.0%
	Dung cakes	Count	54	86

Energy availability and consumption	Response		Ghatol	Kushalgarh
		%	25.8%	38.1%
Mean (SD) cost incurred on cooking fuel for one month	In rupees	Mean	129 (363)	45 (165)
Do you have a separate room which is used as a kitchen?	Yes	Count	28	32
		%	13.0%	14.0%
What type of fuel does your household mainly use for lighting?	Electricity	Count	64	69
		%	30.0%	30.4%
	Kerosene lamp	Count	149	158
		%	70.0%	69.6%
Mean (SD) cost incurred on electricity per month	In rupees	Mean	707 (786)	149 (331)
Do you have power cuts?		Count	64	54
		%	100.0%	78.3%
Total Households		Count	217	228
		%	100.0%	100.0%

**Flooding & Solid waste management:** Only three heads of household in Ghatol (1.4%) and one head of household in Kushalgarh (0.4%) said that 'their house got flooded during the floods of August 2017'. Similarly, ten heads of household in Ghatol (4.6%) and one member of the Kushalgarh community (0.4%) said that the 'main road got flooded during the floods of August 2017'. However, 39 houses of Ghatol (18%) and one house of Kushalgarh (0.4%) were damaged due to the natural hazard. Table 24 provides information regarding practices followed by households in terms of solid waste management. More than 95% of households in both blocks mix solid waste with cow-dung and use the resulting mix as a fertilizer. However, only four of the Ghatol households (1.4%) and one of the Kushalgarh households (0.4%) compost agricultural waste. More than 52% of households of the Kushalgarh community and 68% of the households of the Ghatol community had heard about/read about/seen the 'Swatchha Bahrat' campaign, informing about how to keep surroundings clean.

**Table 24**

Solid waste management by blocks

Solid waste Management	Response		Ghatol	Kushalgarh
<b>Where do the household throw kitchen waste?</b>	Main road	Count	1	1
		%	0.5%	0.4%
	Open plot outside home	Count	1	0
		%	0.5%	0.0%
	Use it as a gober	Count	4	1
		%	1.9%	0.4%
	Mix with gober	Count	207	223
		%	97.2%	98.7%

Solid waste Management	Response		Ghatol	Kushalgarh
	Other place	Count	0	1
		%	0.0%	0.4%
<b>Do you practice composting agriculture waste?</b>	Yes	Count	4	1
		%	1.9%	0.4%
<b>Have you heard/read/seen about “Swatchha Bharat” campaign, informing you about how to keep your surroundings clean?</b>	Yes	Count	147	118
		%	68.1%	52.0%
<b>Total Households</b>		<b>Count</b>	<b>217</b>	<b>228</b>
		%	100.0%	100.0%

### Infant and Young Child Feeding Practices (IYCF):

As part of the household survey, mothers of children aged below two years were interviewed to collect required data on ‘Infant and Young Child Feeding (IYCF)’ practices in the Banswara district, as these practices directly affect the nutritional status of children, and ultimately, impact child survival. Information was also collected about the immunizations received by children aged 12 to 23 months. As part of understanding the IYCF practices, nine key indicators were estimated (Box 3).

Keeping in view sample size of the study and different sub-groups - above listed nine key IYCF indicators were cross-tabulated according to the following seven socio-economic, demographic and geographic variables:

1. Block of village
2. Age of the mother
3. Literacy of the mother
4. Literacy of the Head of the Household (HH)
5. Economic Condition using Modified Kuppaswamy Scale
6. Migration Status of the family
7. Sex of the Index child

Significance of variations in each of the nine IYCF indicators according to the listed socio-economic, demographic and geographic variables was measured by using the Pearson Chi-square test.

**Early initiation of breast feeding in 0 to 23 month old children:** Table 25 presents the first IYCF indicator, early initiation of breastfeeding among the children aged 0 to 23 months at the time of survey. Initiation of breastfeeding after the delivery was categorized into three groups: less than one hour after

### Box 3 Key Indicators of IYCF and Socio-demographic variables

1. Early initiation of breast feeding in 0-23 months children
2. Exclusive breast feeding under six months
3. Continued breast feeding at two years
4. Introduction of solid, semi-solid or soft foods
5. Minimum dietary diversity
6. Minimum meal frequency
7. Minimum acceptable diet
8. Consumption of iron rich foods
9. Age appropriate breast feeding

birth; 1 to 24 hours after birth; and over 24 hours after birth. Initiation of breast feeding significantly varied according to blocks and the migration of the family during the past year. In Ghatol, almost 75% of mothers initiated breastfeeding within one hour, when this figure in Kushalgarh was only 47%. Similarly, among the families that have migrated during the past year, initiation of breastfeeding within one hour was substantially less (47%) as compared to families that had not migrated (70%). In terms of other socio-economic factors, there were no significant variations in the initiation of breast feeding.

**Table 25**

Early initiation of breastfeeding according to blocks and age of index child Association of timely initiation of breastfeeding with Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Initiation of breast feeding	< one hour	Count	153	105	259
		%	74.3%	46.5%	59.5%
	1-24 hours	Count	42	89	132
		%	20.4%	39.4%	30.3%
	> 24 hours	Count	11	32	44
		%	5.3%	14.2%	10.1%
	Total	Count	206	226	435
		%	100.0%	100.0%	100.0%
Chi-Square = 36.7 (p < 0.001)					
			Age of mother		Total
			17-24 yrs	25-49 yrs	
Initiation of breast feeding	< one hour	Count	112	147	259
		%	57.4%	61.3%	59.5%
	1-24 hours	Count	63	69	132
		%	32.3%	28.8%	30.3%
	> 24 hours	Count	20	24	44
		%	10.3%	10.0%	10.1%
	Total	Count	195	240	435
		%	100.0%	100.0%	100.0%
Chi-Square = 0.7 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Initiation of breast feeding	< one hour	Count	107	152	259
		%	63.3%	57.1%	59.5%
	1-24 hours	Count	49	83	132
		%	29.0%	31.2%	30.3%
	> 24 hours	Count	13	31	44
		%	7.7%	11.7%	10.1%
	Total	Count	169	266	435
		%	100.0%	100.0%	100.0%
Chi-Square = 2.4 (not significant)					

			Literacy of head of HH		Total
			Literate	Illiterate	
Initiation of breast feeding	< one hour	Count	180	79	259
		%	60.0%	58.5%	59.5%
	1-24 hours	Count	86	46	132
		%	28.7%	34.1%	30.3%
	> 24 hours	Count	34	10	44
		%	11.3%	7.4%	10.1%
	Total	Count	300	135	435
		%	100.0%	100.0%	100.0%
Chi-Square = 2.3 (not significant)					
			KS SES of family		Total
			Very Poor	Poor Middle	
Initiation of breast feeding	< one hour	Count	119	140	259
		%	57.5%	61.4%	59.5%
	1-24 hours	Count	64	68	132
		%	30.9%	29.8%	30.3%
	> 24 hours	Count	24	20	44
		%	11.6%	8.8%	10.1%
	Total	Count	207	228	435
		%	100.0%	100.0%	100.0%
Chi-Square = 1.2 (not significant)					
			Any family member migrated last year		Total
			Yes	No	
Initiation of breast feeding	< one hour	Count	99	125	224
		%	47.6%	70.2%	58.0%
	1-24 hours	Count	77	42	119
		%	37.0%	23.6%	30.8%
	> 24 hours	Count	32	11	43
		%	15.4%	6.2%	11.1%
	Total	Count	208	178	386
		%	100.0%	100.0%	100.0%
Chi-Square = 21.4 (p < 0.0001)					
			Sex of index child		Total
			Male	Female	
Initiation of breast feeding	< one hour	Count	142	117	259
		%	61.5%	57.4%	59.5%
	1-24 hours	Count	70	62	132
		%	30.3%	30.4%	30.3%
	> 24 hours	Count	19	25	44
		%	8.2%	12.3%	10.1%
	Total	Count	231	204	435
		%	100.0%	100.0%	100.0%
Chi-Square = 2.1 (not significant)					

**Exclusive breast feeding under six months:** This indicator was estimated for children aged 6 to 23 months based on responses of, 'child was fed only breast milk' to the following question: 'Did you feed anything like water/honey/gutti any time during the first six months' (Table 26). Exclusive breast feeding varied significantly among the blocks, being 92% in Ghatol versus 97% in Kushalgarh. However, the exclusive breastfeeding indicator did not differ significantly between the different socio-economic groups.

**Table 26**

Exclusive breastfeeding among 6 to 23-month-old children according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Exclusive breastfeeding in first six months in 6-23 months children	Yes Exclusively breastfed	Count	152	154	306
		%	91.6%	96.9%	94.2%
	Other	Count	14	5	19
		%	8.4%	3.1%	5.8%
	Total	Count	166	159	325
		%	100.0%	100.0%	100.0%
Chi-square = 4.1 (p < 0.05)					
			Age of mother		Total
			17-24 yrs	25-49 yrs	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	131	175	306
		%	96.3%	92.6%	94.2%
	Other	Count	5	14	19
		%	3.7%	7.4%	5.8%
	Total	Count	136	189	325
		%	100.0%	100.0%	100.0%
Chi-square = 2.0 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	118	188	306
		%	96.7%	92.6%	94.2%
	Other	Count	4	15	19
		%	3.3%	7.4%	5.8%
	Total	Count	122	203	325
		%	100.0%	100.0%	100.0%
Chi-square = 2.3 (not significant)					

			Literacy of HH		Total
			Literate	Illiterate	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	216	90	306
		%	94.7%	92.8%	94.2%
	Other	Count	12	7	19
		%	5.3%	7.2%	5.8%
	Total	Count	228	97	325
		%	100.0%	100.0%	100.0%
Chi-square = 0.5 (not significant)					
			KS SES of family		Total
			very Poor	Poor middle	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	136	170	306
		%	95.1%	93.4%	94.2%
	Other	Count	7	12	19
		%	4.9%	6.6%	5.8%
	Total	Count	143	182	325
		%	100.0%	100.0%	100.0%
Chi-square = 0.4 (not significant)					
			Any family member migrated last year		Total
			Yes	No	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	142	131	273
		%	95.3%	92.3%	93.8%
	Other	Count	7	11	18
		%	4.7%	7.7%	6.2%
	Total	Count	149	142	291
		%	100.0%	100.0%	100.0%
Chi-square = 1.2 (not significant)					
			Sex of index child		Total
			Male	Female	
Exclusive breastfeeding in first six months in 6-23 months children	Yes, Exclusively breastfed	Count	164	142	306
		%	95.9%	92.2%	94.2%
	Other	Count	7	12	19
		%	4.1%	7.8%	5.8%
	Total	Count	171	154	325
		%	100.0%	100.0%	100.0%
Chi-square = 2.0 (not significant)					



**Continued breastfeeding at two years:** This indicator was estimated for children aged 20 to 23 months only based on the response 'yes' to the question 'was the child breastfed yesterday during the day or at night' (Table 27). Even though there were huge variations in this indicator by block, literacy of the mother, SES, and sex of the child (due to small sample sizes of 20 to 23 month old children (N=40) covered by the survey) the variations were not significantly different with respect to socio-economic and geographic groups.

**Table 27**

Continued breastfeeding at two years (20 to 23 months) according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Breastfed yesterday	Yes BF	Count	19	9	28
		%	79.2%	56.3%	70.0%
	Other	Count	5	7	12
		%	20.8%	43.8%	30.0%
	Total	Count	24	16	40
		%	100.0%	100.0%	100.0%
Chi-square = 2.4 (not significant)					
			Age of mother		Total
			17-24 years	25-49 years	
Breastfed yesterday	Yes BF	Count	8	20	28
		%	61.5%	74.1%	70.0%
	Other	Count	5	7	12
		%	38.5%	25.9%	30.0%
	Total	Count	13	27	40
		%	100.0%	100.0%	100.0%
Chi-square = 0.7 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Breastfed yesterday	Yes BF	Count	7	21	28
		%	58.3%	75.0%	70.0%
	Other	Count	5	7	12
		%	41.7%	25.0%	30.0%
	Total	Count	12	28	40
		%	100.0%	100.0%	100.0%
Chi-square = 1.1 (not significant)					
			Literacy of HH		Total
			Literate	Illiterate	
Breastfed yesterday	Yes BF	Count	23	5	28
		%	69.7%	71.4%	70.0%
	Other	Count	10	2	12
		%	30.3%	28.6%	30.0%
	Total	Count	33	7	40
		%	100.0%	100.0%	100.0%
Chi-square = 0.008 (not significant)					

			KS SES of family		Total
			very Poor	Poor middle	
Breastfed yesterday	Yes BF	Count	12	16	28
		%	80.0%	64.0%	70.0%
	Other	Count	3	9	12
		%	20.0%	36.0%	30.0%
	Total	Count	15	25	40
		%	100.0%	100.0%	100.0%
Chi-square = 1.1 (not significant)					
			Any family member migrated last year		Total
			Yes	No	
Breastfed yesterday	Yes BF	Count	14	14	28
		%	70.0%	77.8%	73.7%
	Other	Count	6	4	10
		%	30.0%	22.2%	26.3%
	Total	Count	20	18	38
		%	100.0%	100.0%	100.0%
Chi-square = 0.3 (not significant)					
			Sex of index child		Total
			Male	Female	
Breastfed yesterday	Yes BF	Count	19	9	28
		%	76.0%	60.0%	70.0%
	Other	Count	6	6	12
		%	24.0%	40.0%	30.0%
	Total	Count	25	15	40
		%	100.0%	100.0%	100.0%
Chi-square = 1.1 (not significant)					

**Introduction of solid, semi-solid or soft foods:** Table 28 provides information on components of the diets of infants aged six to eight months (solid, semi-solid or soft), such as grains, legumes, eggs, milk solids etc, fruits and vegetables ). Although, there were variations in this indicator among the socio-economic and geographic groups (due to the small sample size of six to eight month old children (N=60) covered by the survey), the differences were not statistically different.

## Table 28

Introduction of solid, semi-solid/soft foods to 6-8 months children, according to Blocks and Socio-economic & Demographic profile of households

				Block		Total
				Ghatol	Kushalgarh	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	14	11	25	
		%	48.3%	35.5%	41.7%	
	Not received	Count	15	20	35	
		%	51.7%	64.5%	58.3%	

	Total	Count	29	31	60
		%	100.0%	100.0%	100.0%
Chi-Square = 1.0 (not significant)					
			<b>Age of mother</b>		<b>Total</b>
			<b>17-24 yrs</b>	<b>25-49 yrs</b>	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	16	9	25
		%	47.1%	34.6%	41.7%
	Not received	Count	18	17	35
		%	52.9%	65.4%	58.3%
	Total	Count	34	26	60
		%	100.0%	100.0%	100.0%
Chi-Square = 0.94 (not significant)					
			<b>Literacy of mother</b>		<b>Total</b>
			<b>Literate</b>	<b>Illiterate</b>	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	12	13	25
		%	46.2%	38.2%	41.7%
	Not received	Count	14	21	35
		%	53.8%	61.8%	58.3%
	Total	Count	26	34	60
		%	100.0%	100.0%	100.0%
Chi-Square = 0.38 (not significant)					
			<b>Literacy of HH</b>		<b>Total</b>
			<b>Literate</b>	<b>Illiterate</b>	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	18	7	25
		%	38.3%	53.8%	41.7%
	Not received	Count	29	6	35
		%	61.7%	46.2%	58.3%
	Total	Count	47	13	60
		%	100.0%	100.0%	100.0%
Chi-Square = 1.0 (not significant)					
			<b>KS SES of family</b>		<b>Total</b>
			<b>very Poor</b>	<b>Poor middle</b>	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	5	20	25
		%	27.8%	47.6%	41.7%
	Not received	Count	13	22	35
		%	72.2%	52.4%	58.3%
	Total	Count	18	42	60
		%	100.0%	100.0%	100.0%
Chi-Square = 2.0 (not significant)					

			Any family member migrated last year		Total
			Yes	No	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	10	12	22
		%	28.6%	60.0%	40.0%
	Not received	Count	25	8	33
		%	71.4%	40.0%	60.0%
	Total	Count	35	20	55
		%	100.0%	100.0%	100.0%
Chi-Square = 5.2 (p < 0.03)					
			Sex of index child		Total
			Male	Female	
Received solid, semi-solid or soft foods during the previous day	Received any food	Count	15	10	25
		%	48.4%	34.5%	41.7%
	Not received	Count	16	19	35
		%	51.6%	65.5%	58.3%
	Total	Count	31	29	60
		%	100.0%	100.0%	100.0%
Chi-Square = 1.2 (not significant)					

**Minimum dietary diversity:** Table 29 presents information regarding minimum dietary diversity measured for children aged 6 to 23 months who received food from four or more groups out of the following seven food groups (grains, legumes, milk, eggs, meat, vitamin-A rich fruits/vegetables, other fruits/vegetables) during past 24 hours. This indicator was significantly different with respect to literacy of the mother as well as the household head, SES and sex of the child, with higher percentage of children whose parents were literate, children from better SES households and male children receiving food from four or more groups during the past 24 hours as compared to their respective group counterparts.

**Table 29**

Children aged 6-23 months who received food from four or more food groups, according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Number of food groups received yesterday	0-3 groups	Count	153	149	302
		%	92.2%	93.7%	92.9%
	4-7 groups	Count	13	10	23
		%	7.8%	6.3%	7.1%
	Total	Count	166	159	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.3 (not significant)					

			Age of mother		Total
			17-24 yrs	25-49 yrs	
Number of food groups received yesterday	0-3 groups	Count	127	175	302
		%	93.4%	92.6%	92.9%
	4-7 groups	Count	9	14	23
		%	6.6%	7.4%	7.1%
	Total	Count	136	189	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.2 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Number of food groups received yesterday	0-3 groups	Count	109	193	302
		%	89.3%	95.1%	92.9%
	4-7 groups	Count	13	10	23
		%	10.7%	4.9%	7.1%
	Total	Count	122	203	325
		%	100.0%	100.0%	100.0%
Chi-Square = 3.8 (p < 0.05)					
			Literacy of HH		Total
			Literate	Illiterate	
Number of food groups received yesterday	0-3 groups	Count	206	96	302
		%	90.4%	99.0%	92.9%
	4-7 groups	Count	22	1	23
		%	9.6%	1.0%	7.1%
	Total	Count	228	97	325
		%	100.0%	100.0%	100.0%
Chi-Square = 7.7 (p < 0.003)					
			KS SES of family		Total
			very Poor	Poor middle	
Number of food groups received yesterday	0-3 groups	Count	140	162	302
		%	97.9%	89.0%	92.9%
	4-7 groups	Count	3	20	23
		%	2.1%	11.0%	7.1%
	Total	Count	143	182	325
		%	100.0%	100.0%	100.0%
Chi-Square = 9.6 (p < 0.001)					
			Any family member migrated last year		Total
			Yes	No	
Number of food groups received yesterday	0-3 groups	Count	142	132	274
		%	95.3%	93.0%	94.2%

	4-7 groups	Count	7	10	17
		%	4.7%	7.0%	5.8%
	Total	Count	149	142	291
		%	100.0%	100.0%	100.0%
Chi-Square = 0.7 (not significant)					
			<b>Sex of index child</b>		<b>Total</b>
			<b>Male</b>	<b>Female</b>	
Number of food groups received yesterday	0-3 groups	Count	153	149	302
		%	89.5%	96.8%	92.9%
	4-7 groups	Count	18	5	23
		%	10.5%	3.2%	7.1%
	Total	Count	171	154	325
		%	100.0%	100.0%	100.0%
Chi-Square = 6.5 (p < 0.01)					

**Minimum meal frequency:** This indicator was calculated separately for breastfed and non-breastfed children, and then added, as given below (Table 30):

- Breastfed children 6 to 23 months of age who received solid, semi-solid or soft foods the minimum number (two times for 6 to 8 month old child and three times for 9 to 23 month old child).
- Non- breastfed children were assessed on who received solid, semi-solid or soft foods or milk feeds at least four times during the previous day

From Table 30 it is clear that, irrespective of different socio-economic and geographic groups, around two-third of the children aged 6 to 23 months received minimum meal frequency during the past 24 hours.

### Table 30

Minimum meal frequency to 6-23 months children, according to Blocks and Socio-economic & Demographic profile of households

			<b>Block</b>		<b>Total</b>
			<b>Ghatol</b>	<b>Kushalgarh</b>	
Minimum meal frequency	Yes	Count	112	108	220
		%	67.5%	67.9%	67.7%
	No	Count	54	51	105
		%	32.5%	32.1%	32.3%
	Total	Count	166	159	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.0 (not significant)					
			<b>Age of mother</b>		<b>Total</b>
			<b>17-24 yrs</b>	<b>25-49 yrs</b>	
Minimum meal frequency	Yes	Count	89	131	220
		%	65.4%	69.3%	67.7%
	No	Count	47	58	105
		%	34.6%	30.7%	32.3%
	Total	Count	136	189	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.5 (not significant)					

			Literacy of mother		Total
			Literate	Illiterate	
Minimum meal frequency	Yes	Count	82	138	220
		%	67.2%	68.0%	67.7%
	No	Count	40	65	105
		%	32.8%	32.0%	32.3%
	Total	Count	122	203	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.02 (not significant)					
			Literacy of HH		Total
			Literate	Illiterate	
Minimum meal frequency	Yes	Count	156	64	220
		%	68.4%	66.0%	67.7%
	No	Count	72	33	105
		%	31.6%	34.0%	32.3%
	Total	Count	228	97	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.2 (not significant)					
			KS SES of family		Total
			very Poor	Poor middle	
Minimum meal frequency	Yes	Count	95	125	220
		%	66.4%	68.7%	67.7%
	No	Count	48	57	105
		%	33.6%	31.3%	32.3%
	Total	Count	143	182	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.2 (not significant)					
			Any family member migrated last year		Total
			Yes	No	
Minimum meal frequency	Yes	Count	97	98	195
		%	65.1%	69.0%	67.0%
	No	Count	52	44	96
		%	34.9%	31.0%	33.0%
	Total	Count	149	142	291
		%	100.0%	100.0%	100.0%
Chi-Square = 0.5 (not significant)					
			Sex of index child		Total
			Male	Female	
Minimum meal frequency	Yes	Count	120	100	220
		%	70.2%	64.9%	67.7%
	No	Count	51	54	105
		%	29.8%	35.1%	32.3%
	Total	Count	171	154	325
		%	100.0%	100.0%	100.0%
Chi-Square = 1.0 (not significant)					



**Minimum acceptable diet:** This indicator was calculated separately for breastfed and non-breastfed children, and then added, as given below (Table 31):

- Breastfed children 6 to 23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day;
- Non-breastfed children 6 to 23 months of age who had at least the minimum dietary diversity and the minimum meal frequency during the previous day.

A significantly higher proportion of children from literate household heads, better SES and male children received minimum acceptable diet during the past 24 hours as compared to their respective group counterparts. However, irrespective of the socio-economic and geographic groups only 6% of 6 to 23 month old children received minimum acceptable diet during the past 24 hours.

**Table 31**

Minimum acceptable diet to 6-23 months children, according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Minimum acceptable diet	Received	Count	10	10	20
		%	6.0%	6.3%	6.2%
	No	Count	156	149	305
		%	94.0%	93.7%	93.8%
	Total	Count	166	159	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.01 (not significant)					
			Age of mother		Total
			17-24 yrs	25-49 yrs	
Minimum acceptable diet	Received	Count	8	12	20
		%	5.9%	6.3%	6.2%
	No	Count	128	177	305
		%	94.1%	93.7%	93.8%
	Total	Count	136	189	325
		%	100.0%	100.0%	100.0%
Chi-Square = 0.03 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Minimum acceptable diet	Received	Count	11	9	20
		%	9.0%	4.4%	6.2%
	No	Count	111	194	305
		%	91.0%	95.6%	93.8%
	Total	Count	122	203	325
		%	100.0%	100.0%	100.0%

Chi-Square = 2.8 (p < 0.08)					
			Literacy of HH		Total
			Literate	Illiterate	
Minimum acceptable diet	Received	Count	19	1	20
		%	8.3%	1.0%	6.2%
	No	Count	209	96	305
		%	91.7%	99.0%	93.8%
	Total	Count	228	97	325
		%	100.0%	100.0%	100.0%
Chi-Square = 6.3 (p < 0.01)					
			KS SES of family		Total
			very Poor	Poor middle	
Minimum acceptable diet	Received	Count	3	17	20
		%	2.1%	9.3%	6.2%
	No	Count	140	165	305
		%	97.9%	90.7%	93.8%
	Total	Count	143	182	325
		%	100.0%	100.0%	100.0%
Chi-Square = 7.3 (p < 0.005)					
			Any family member migrated last year		Total
			Yes	No	
Minimum acceptable diet	Received	Count	6	8	14
		%	4.0%	5.6%	4.8%
	No	Count	143	134	277
		%	96.0%	94.4%	95.2%
	Total	Count	149	142	291
		%	100.0%	100.0%	100.0%
Chi-Square = 0.4 (not significant)					
			Sex of index child		Total
			Male	Female	
Minimum acceptable diet	Received	Count	16	4	20
		%	9.4%	2.6%	6.2%
	No	Count	155	150	305
		%	90.6%	97.4%	93.8%
	Total	Count	171	154	325
		%	100.0%	100.0%	100.0%
Chi-Square = 6.4 (p < 0.01)					

**Consumption of iron rich foods:** Table 32 presents information regarding iron rich food (meat, fish, chicken) consumption in the past 24 hours measured for children aged 6 to 23 months. Overall, less than three percent of children received iron rich food like meat/fish/chicken in the past 24 hours.

**Table 32**

Consumption of iron rich food (meat) by 6-23 months children, according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Consumption of Iron rich food (meat)	Consumed	Count	2	3	5
		%	1.2%	1.9%	1.5%
	No	Count	164	156	320
		%	98.8%	98.1%	98.5%
	Total	Count	166	159	325
		%	100.0%	100.0%	100.0%
Chi - Square = 0.2 (not significant)					
			Age of mother		Total
			17-24 yrs	25-49 yrs	
Consumption of Iron rich food (meat)	Consumed	Count	2	3	5
		%	1.5%	1.6%	1.5%
	No	Count	134	186	320
		%	98.5%	98.4%	98.5%
	Total	Count	136	189	325
		%	100.0%	100.0%	100.0%
Chi - Square = 0.007 (not significant)					
			Literacy of mother		Total
			Literate	Illiterate	
Consumption of Iron rich food (meat)	Consumed	Count	2	3	5
		%	1.6%	1.5%	1.5%
	No	Count	120	200	320
		%	98.4%	98.5%	98.5%
	Total	Count	122	203	325
		%	100.0%	100.0%	100.0%
Chi - Square = 0.01 (not significant)					
			Literacy of HH		Total
			Literate	Illiterate	
Consumption of Iron rich food (meat)	Consumed	Count	4	1	5
		%	1.8%	1.0%	1.5%
	No	Count	224	96	320
		%	98.2%	99.0%	98.5%
	Total	Count	228	97	325
		%	100.0%	100.0%	100.0%
Chi - Square = 0.2 (not significant)					

			KS SES of family		Total
			very Poor	Poor middle	
Consumption of Iron rich food (meat)	Consumed	Count	1	4	5
		%	.7%	2.2%	1.5%
	No	Count	142	178	320
		%	99.3%	97.8%	98.5%
	Total	Count	143	182	325
		%	100.0%	100.0%	100.0%
Chi - Square = 1.2 (not significant)					
			Any family member migrated last year		Total
			Yes	No	
Consumption of Iron rich food (meat)	Consumed	Count	3	1	4
		%	2.0%	.7%	1.4%
	No	Count	146	141	287
		%	98.0%	99.3%	98.6%
	Total	Count	149	142	291
		%	100.0%	100.0%	100.0%
Chi - Square = 0.9 (not significant)					
			Sex of index child		Total
			Male	Female	
Consumption of Iron rich food (meat)	Consumed	Count	5	0	5
		%	2.9%	0.0%	1.5%
	No	Count	166	154	320
		%	97.1%	100.0%	98.5%
	Total	Count	171	154	325
		%	100.0%	100.0%	100.0%
Chi - Square = 4.6 (p < 0.05)					

**Age appropriate breast feeding:** This indicator was calculated separately for children in two age groups, and then added, as shown in *Table 33*:

- Infants (0 to 5 months of age) who received only breastmilk during the previous day;
- Children (6 to 23 months of age) who received breastmilk, as well as solid, semi-solid or soft foods, during the previous day.

Overall about 60% of the children received age appropriate breastfeeding, although, age appropriate breast feeding is significantly higher for children whose mother was literate and for children from better SES households as compared to their respective group counterparts.

**Table 33**

Age appropriate breastfeeding by 0 to 5 and 6 to 23-month-old children, according to Blocks and Socio-economic & Demographic profile of households

			Block		Total
			Ghatol	Kushalgarh	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	122	142	264
		%	56.2%	62.3%	59.3%
	No	Count	95	86	181
		%	43.8%	37.7%	40.7%
	Total	Count	217	228	445
		%	100.0%	100.0%	100.0%
Chi-square = 1.7 (not significant)					
			Age of mother		Total
			17-24 yrs	25-49 yrs	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	111	153	264
		%	55.5%	62.4%	59.3%
	No	Count	89	92	181
		%	44.5%	37.6%	40.7%
	Total	Count	200	245	445
		%	100.0%	100.0%	100.0%
Chi-square = 2.2 (p < 0.09)					
			Literacy of mother		Total
			Literate	Illiterate	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	90	174	264
		%	51.7%	64.2%	59.3%
	No	Count	84	97	181
		%	48.3%	35.8%	40.7%
	Total	Count	174	271	445
		%	100.0%	100.0%	100.0%
Chi-square = 6.8 (p < 0.01)					
			Literacy of HH		Total
			Literate	Illiterate	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	183	81	264
		%	59.2%	59.6%	59.3%
	No	Count	126	55	181
		%	40.8%	40.4%	40.7%
	Total	Count	309	136	445
		%	100.0%	100.0%	100.0%
Chi-square = 0.004 (not significant)					

			KS SES of family		Total
			very Poor	Poor middle	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	134	130	264
		%	64.4%	54.9%	59.3%
	No	Count	74	107	181
		%	35.6%	45.1%	40.7%
	Total	Count	208	237	445
		%	100.0%	100.0%	100.0%
Chi-square = 4.2 (p < 0.05)					
			Any family member migrated last year		Total
			Yes	No	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	127	107	234
		%	60.2%	57.8%	59.1%
	No	Count	84	78	162
		%	39.8%	42.2%	40.9%
	Total	Count	211	185	396
		%	100.0%	100.0%	100.0%
Chi-square = 0.2 (not significant)					
			Sex of index child		Total
			Male	Female	
Age appropriate breastfeeding to 0-5 and 6-23 children	Appropriate	Count	145	119	264
		%	61.4%	56.9%	59.3%
	No	Count	91	90	181
		%	38.6%	43.1%	40.7%
	Total	Count	236	209	445
		%	100.0%	100.0%	100.0%
Chi-square = 0.9 (not significant)					

**Immunization of children:** Table 34 provides information about immunization coverage rates according to the vaccination type, based on information obtained either from the immunization card (93.7%) or based on mothers' recall in the remaining cases, for children aged 12 to 23 months, according to block and sex of the index child. Full immunization includes one dose of BCG, three injections of DPT, three doses of polio and one injection of measles vaccinations. In around 75% of Ghatol households and more than one-third of Kushalgarh households, children received full immunization coverage. A slightly higher percentage of females received full immunization compared to male children. Despite hepatitis-B zero dose coverage falling around 80%, the figures dropped substantially to around 35% for the third dose. Around 60% of the children received vitamin-A dose and no child of the Kushalgarh community received de-worming dose.

**Table 34**

Percent Immunization of Children aged 12–23 months by block and sex

Type of Immunization	Block		Sex of index child	
	Ghatol	Kushalgarh	Male	Female
BCG	90.3%	85.7%	85.6%	91.4%
Polio 0	86.7%	83.5%	82.0%	89.2%
Polio 1	92.0%	58.2%	70.3%	84.9%
Polio 2	90.3%	56.0%	68.5%	82.8%
Polio 3	89.4%	45.1%	64.9%	75.3%
DPT1	90.3%	54.9%	68.5%	81.7%
DPT2	89.4%	50.5%	66.7%	78.5%
DPT3	89.4%	39.6%	63.1%	72.0%
Hepatitis B0	77.9%	80.2%	77.5%	80.6%
Hepatitis B1	47.8%	48.4%	45.9%	50.5%
Hepatitis B2	40.7%	46.2%	41.4%	45.2%
Hepatitis B3	40.7%	34.1%	38.7%	36.6%
Measles	79.6%	49.5%	58.6%	75.3%
Full Immunization	74.3%	36.3%	55.0%	60.2%
Vitamin - A	79.6%	49.5%	58.6%	75.3%
De-worming	47.8%	0.0%	28.8%	23.7%
N	113	91	111	93

### Time Use Survey

The Time Use survey was based on the Women's Empowerment in Agriculture Index (WEAI) Time diary and was used to collect information for both primary and secondary (simultaneous) activities across the following activities:

- Personal activities: sleeping and resting, eating and drinking, personal care, school (including homework);
- Market work: work as employed, own business work, farming/livestock;
- Unpaid (household) work: shopping/getting service, weaving/sewing/textile care, cooking, domestic work (including the collection of wood and water), care for children/adults/elderly, traveling/commuting;

- Leisure: watching TV/listening to radio/reading, exercising, social activities and hobbies, religious activities.

For the reporting purposes, *Table 35* presents the shorthand used to represent each primary activity.

**Table 35**

Label for each reported activity in a 24hour period

Activity	Shorthand
Sleeping	Sleeping
Eating and Drinking	Eating and drinking
Personal Care	Personal care
School (also homework)	School / homework
Work as employment	Work as employment
Own business work	Own business work
Farming/Livestock	Farming livestock
Shopping / getting service (including health service)	Shopping
Weaving, sewing, textile care	Textiles
Cooking	Cooking
Domestic work (including fetching wood and water)	Domestic work
Care for children / adults / the elderly	Care
Travelling and commuting	Travelling and commuting
Watching TV, listening to the radio/reading	TV and radio
Exercising	Exercising
Social activities and hobbies	Socialising
Religious activities	Religious activities
Other, specify	Other

### Description of an average 24-hour day

The total amount of time spent per activity (in minutes) was calculated to quantify time spent in primary activities amongst the 85 participating mothers.

**Table 36**

Total and Mean time (in minutes and hours) spent in each primary activity over a 24-hour period

Primary Activity	Total (n=85)		Total Mean (minutes per person)	% Time in an average 24-hour day	Hours in an average 24-hour day
	Minutes	Hours			
Care	6120	102	72	5	1.2
Cooking	13920	232	164	11	2.6
Domestic work	13650	227.5	161	11	2.6
Eating and drinking	10800	180	127	9	2.2
Exercising	0	0	0	0	0.0



Farming livestock	19905	331.75	234	16	3.8
Other	6495	108.25	76	5	1.2
Own business work	450	7.5	5	0	0.0
Personal care	7245	120.75	85	6	1.4
Religious activities	135	2.25	2	0	0.0
School / homework	30	0.5	0	0	0.0
Shopping	2325	38.75	27	2	0.5
Sleeping	41235	687.25	485	33	7.9
Socialising	1680	28	20	1	0.2
Textiles	90	1.5	1	0	0.0
Travelling and commuting	375	6.25	4	0	0.0
TV and radio	330	5.5	4	0	0.0
Work as employment	495	8.25	6	0	0.0

## A typical day

The time spent on each activity for an average day was calculated using the total mean time spent on each activity (in minutes). Time spent engaging in own business work, religious activities, school or homework, weaving, sewing and textile care, travelling and commuting, listening to radio or watching TV and work as employment, were all rounded down to zero hours in a typical 24 hour day.

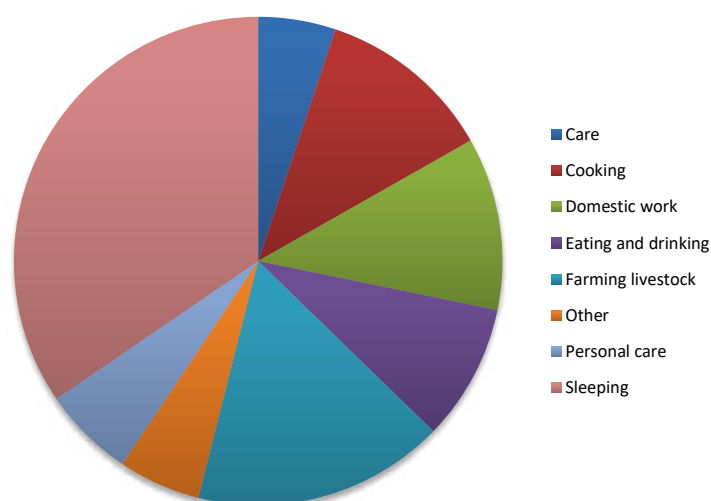


Figure 35 - The proportion of hours spent in a primary activity in a typical day

Respondents were asked to specify what they meant by 'other'. Responses included rest, visiting doctors and talking to family members.

## Total Activity Type

On an average day, women spent a majority of their time on personal activities (13 hours), 4 hours on market work, and 6 hours on unpaid work.

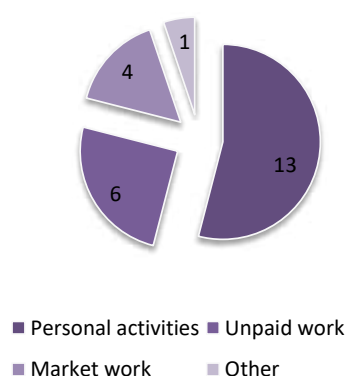


Figure 36 - Proportion of time as categorised by WEAI (Women's Empowerment in Agriculture Index)

## Participation rates and mean

The participation rate reflects the proportion of caregivers that engaged in the primary activity out of the total sample (n=85) of caregivers. Thus, the mean time of participation mean reflects the average amount of time that care givers allocate to that activity in a 24-hour period, as presented in Table 37.

Table 37

Participation rates and means according to each primary activity

Primary Activity	No. of women engaging in activity (n=85)	Participation rate (%)	Participation mean (minutes per person)	Total Mean (minutes per person)
Care	74	87	83	72
Cooking	85	100	164	164
Domestic work	84	99	163	161
Eating and drinking	85	100	127	127
Exercising	0	0	0	0
Farming livestock	82	96	243	234
Other	73	86	89	76
Own business work	3	4	150	5
Personal care	84	99	86	85
Religious activities	1	1	135	2
School / homework	1	1	30	0
Shopping	11	13	211	27
Sleeping	85	100	485	485
Socialising	17	20	99	20
Textiles	1	1	90	1
Travelling and commuting	6	7	63	4
TV and radio	3	4	110	4
Work as employment	3	4	165	6

### Time spent exclusively on child-care

Out of the 85 mothers surveyed, 74 (87%) described caring for their child as a primary activity in the past 24 hours. These 74 mothers spent an average of 72 minutes exclusively on child care. Furthermore, 63 out of 85 mothers reported providing care as a secondary activity, at an average time period of 70 minutes. Three mothers did not list care as either a primary or secondary activity.

### Primary activities paired with child care

When caregivers reported providing care as a primary activity, a secondary activity was rarely reported (in <1% of time allocated to caregiving). In these 315 min episodes, the secondary activity reported was 'other'.

Of the 63 women that provided care as a secondary activity (whilst also engaging in a primary activity), they did so whilst eating and drinking (40%), cooking (38%), engaging in domestic work (21%), personal care (16%) farming and tending to livestock (11%), listening to TV and Radio (4%), socialising (1%) and travelling (1%).

The mean time of participation (average amount of time spent in an activity amongst those that reported that activity) of primary activities is reported for those mothers also engaged in caregiving as a secondary activity as shown in *Table 38*.

**Table 38**

Time spent engaged in each primary activity when providing care as a secondary activity

Primary Activity	Total time also caring as a secondary activity (minutes)	Total mean time in both activities (minutes)	Number of women	% Of all women (n=85)	Participation mean time in both activities (minutes)
Cooking	2640	42	32	38	83
Domestic work	1470	23	18	21	82
Eating and drinking	2685	43	34	40	79
Farming livestock	870	14	9	11	97
Other	1290	20	13	15	99
Personal care	1230	20	14	16	88
Sleeping	1020	16	9	11	113
Socialising	285	5	2	2	143
Travelling and commuting	120	2	1	1	120
TV and Radio	390	6	3	4	130

% time engaged in primary activity type whilst caring for child as a child as a secondary activity

■ Personal activities ■ Unpaid work ■ Market work ■ Leisure ■ Other

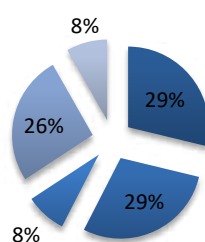


Figure 37 - Proportion of time spent in each primary activity, defined according to WEAL categories, whilst also engaged with caregiving as a secondary activity

**Table 39**

Total mean and participation mean time allocated to each primary activity, presented by block

Activity	Ghatol				Kushalgarh			
	Total minutes	Total mean	n=	Participation mean	Total minutes	Total mean	n=	Participation mean
Care	3690	77	43	86	2430	66	31	78
Cooking	7860	164	48	183	6060	164	37	195
Domestic work	8220	171	48	191	5430	147	36	175
Eating and drinking	6615	138	48	154	4185	113	37	135
Farming livestock	10545	220	48	245	9360	253	34	302
Other	4425	92	47	103	2070	56	26	67
Own business work	30	1	1	1	420	11	2	14
Personal care	3855	80	47	90	3390	92	37	109
Religious activities	0	0	0	0	135	4	1	4
School / homework	0	0	0	0	30	1	1	1
Shopping	30	1	1	1	2295	62	10	74
Sleeping	23760	495	48	553	17475	472	37	564
Socialising	570	12	6	13	1110	30	11	36
Textiles	90	2	1	2	0	0	0	0
Travelling and commuting	300	6	4	7	75	2	2	2
TV and radio	330	7	3	8	0	0	0	0
Work as employment	240	5	1	6	255	7	2	8
n=	48				37			

### Exploring time for caregiving: Demographics of participants

Table 40 presents information on the demographic characteristics of caregivers participating in the 'Time Use' survey. More than half of the caregivers in this study were aged between 18 and 26 years. Infant and young children's ages were split approximately evenly in the categories of 0 to 12 months old and 13 to 24 months old. The majority of caregivers (92%) had either one or two children under five years of age in their household.

Education and literacy were variable amongst this population. Approximately 25% of heads of household were illiterate and 30.6% achieved a high school certificate. Amongst caregivers, 61% were illiterate, although illiteracy was more common amongst caregivers living in Kushalgarh.

Most households kept livestock in the form of cows and buffaloes or goats. There was a vast difference in the proportion of households keeping cows and buffaloes between Ghatol (62.5%) versus Kushalgarh (91.1%).

Twenty-six caregivers had not received a visit from any health professional in the past month and ten had infants aged less than 12 months. Caregivers in Kushalgarh appear to have more household

members on average, including a higher proportion of grandmothers living in the same dwelling. Kushalgarh households were also likely to have a lower SES score compared to those in Ghatol.

**Table 40**

Characteristics of caregivers participating in Time Use survey

Variables	Total		Ghatol		Kushalgarh	
	N (n=85)	% (100%)	N (n=48)	% (100%)	N (n=37)	% (100%)
<b>Age Of Caregiver (Years)</b>						
18-20	10	11.8	7	14.6	3	8.1
21-23	22	25.9	15	31.3	7	18.9
24-26	28	32.9	17	35.4	11	29.7
27-29	10	11.8	2	4.2	8	21.6
30-49	15	17.7	7	14.6	8	21.6
<b>Age Of Infant (Months)</b>						
0-5	24	28.2	9	18.8	15	40.5
6-11	13	15.3	10	20.8	3	8.1
12-24	48	56.5	29	60.4	19	51.4
<b>Sex Of Child</b>						
Female	34	40	17	35.4	17	45.9
Male	51	60	31	64.6	20	54.1
<b>Village</b>						
Bansri	6	7.1	-	-	6	16.2
Devda Sath	9	10.6	-	-	9	24.3
Garnawat	10	11.8	10	20.8	-	
Jharkaniya	7	8.2	7	14.6	-	
Kakanwani	12	14.1	-	-	12	32.4
Karagcheeya	10	11.8	10	20.8	-	
Palakpara	10	11.8	-	-	10	27.0
Thikariya Chandrawat	10	11.8	10	20.8	-	
Udpura	11	12.9	11	22.9	-	
<b>Block</b>						0.0
Ghatol	48	56.5	48	100.0	-	
Kushalgarh	37	43.5	-	-	37	100.0
<b>Caste</b>						
Scheduled Tribe	66	77.7	33	68.8	33	89.2
Scheduled Caste	15	17.7	11	22.9	4	10.8
Obc	3	3.5	3	6.3	0	0.0
General	1	1.1	1	2.1	0	0.0
<b>Tribal Status</b>						

Variables	Total		Ghatol		Kushalgarh	
	N (n=85)	% (100%)	N (n=48)	% (100%)	N (n=37)	% (100%)
Ahari	1	1.2	1	2.1	0	0.0
Bamaniya	1	1.2	1	2.1	0	0.0
Bargot	2	2.4	2	4.2	0	0.0
Bariya	1	1.2	0	0.0	1	2.7
Bhuriya	2	2.4	0	0.0	2	5.4
Charpota	2	2.4	2	4.2	0	0.0
Damor	18	21.2	7	14.6	11	29.7
Devda	9	10.6	0	0.0	9	24.3
Dindor	2	2.4	2	4.2	0	0.0
Garasiya	1	1.2	0	0.0	1	2.7
Katara	7	8.2	7	14.6	0	0.0
Kharadi	1	1.2	1	2.1	0	0.0
Maida	9	10.6	2	4.2	7	18.9
Muniya	6	7.1	0	0.0	6	16.2
Ninama	17	20	17	35.4	0	0.0
Ranna	1	1.2	1	2.1	0	0.0
Rathod	2	2.4	2	4.2	0	0.0
N/A	3	3.5	3	6.3	0	0.0
<b>Number Of Household Members</b>						
<4	27	31.8	23	47.9	4	10.8
5	21	24.7	12	25.0	9	24.3
6	19	22.3	8	16.7	11	29.7
>7	18	21.2	5	10.4	13	35.1
<b>Number Of Children Under 5</b>						
1	38	44.7	23	47.9	15	40.5
2	40	47.1	23	47.9	17	45.9
3	5	5.9	1	2.1	4	10.8
4	2	2.4	1	2.1	1	2.7
<b>Living With Grandparents</b>						
Yes	35	41.2	15	31.3	20	54.1
No	50	58.8	33	68.8	17	45.9
<b>Ses Score</b>						
<=8	34	40.0	11	22.9	23	62.2
9-10	23	27.06	13	27.1	10	27.0
11-12	22	25.9	19	39.6	3	8.1
13-19	6	7.1	5	10.4	1	2.7

Variables	Total		Ghatol		Kushalgarh	
	N (n=85)	% (100%)	N (n=48)	% (100%)	N (n=37)	% (100%)
<b>Education Of Head OfThe Household</b>						
Illiterate	23	27.1	13	27.1	10	27.0
Primary School Certificate	19	22.4	4	8.3	15	40.5
Middle School Certificate	14	16.5	10	20.8	4	10.8
High School Certificate	26	30.6	19	39.6	7	18.9
Intermediate Or Diploma	1	1.2	1	2.1	0	0.0
Graduation	0	0	0	0.0	0	0.0
Above Graduation	2	2.4	1	2.1	1	2.7
<b>Literacy Of Caregiver</b>						
Literate	33	38.8	22	45.8	11	29.7
Illiterate	52	61.2	26	54.2	26	70.3
<b>Yes To Keeping The Following Livestock...</b>						
Cows / Buffaloes	64	75.3	30	62.5	34	91.9
Goats	48	56.5	22	45.8	26	70.2
Chicken / Ducks	19	22.4	2	4.1	17	45.6
Horses	0	0	0	-	0	-
<b>Livestock Kept In Dwelling</b>						
Under Same Roof	54	63.5	28	58.3	26	70.3
Under Separate Roof	20	23.5	10	20.8	10	27.0
N/A	11	12.9	10	20.8	1	2.7
<b>Health Worker Visits In Past Month</b>						
None	27	31.8	14	29.2	12	32.4
Asha	30	35.3	13	27.1	17	45.9
Anm	9	10.6	6	12.5	4	10.8
Aww	20	23.5	16	33.3	4	10.8
<b>Location Of Main Water Source</b>						
In Own Dwelling	20	23.5	18	37.5	2	5.4
Elsewhere	63	74.1	28	58.3	35	94.6
Missing	2	2.4	2	4.2	0	0.0
<b>Main Type Of Cooking Fuel</b>						
Electricity	1	1.2	1	2.1	0	0.0
Lpg/Natural Gas	2	2.4	1	2.1	1	2.7
Bio Gas	2	2.4	1	2.1	1	2.7
Wood	53	62.4	29	60.4	24	64.9

Variables	Total		Ghatol		Kushalgarh	
	N (n=85)	% (100%)	N (n=48)	% (100%)	N (n=37)	% (100%)
<b>Dung Cakes</b>	24	28.2	13	27.1	11	29.7
<b>Missing</b>	3	3.5	3	6.3	0	0.0
<b>Main Source Of Lighting Fuel</b>						
<b>Electricity</b>	32	37.7	18	37.5	14	37.8
<b>Kerosene Lamp</b>	51	60.0	28	58.3	23	62.2
<b>Missing</b>	2	2.4	2	4.2	0	0.0
<b>Time Taken To Collect Water In A Day</b>						
<b>30 Minutes Or Less</b>	6	7.1	3	6.3	3	8.1
<b>31-60 Minutes</b>	32	37.7	5	10.4	27	73.0
<b>61-90 Minutes</b>	10	11.8	4	8.3	6	16.2
<b>91-120 Minutes</b>	22	25.9	21	43.8	1	2.7
<b>121-190 Minutes</b>	12	14.12	12	25.0	0	0.0
<b>N/A</b>	3	3.5	3	6.3	0	0.0
<b>No Of Trips To Fh Water In A Day</b>						
<b>2</b>	20	23.5	4	8.3	16	43.2
<b>3</b>	50	58.9	30	62.5	20	54.1
<b>4</b>	6	7.1	5	10.4	1	2.7
<b>5</b>	4	4.7	4	8.3	0	0.0
<b>6</b>	2	2.4	2	4.2	0	0.0
<b>Missing</b>	3	3.5	3	6.3	0	0.0
<b>Ownership Of Agriculture Land</b>						
<b>0</b>	8	9.4	5	10.4	3	8.1
<b>1-1.9</b>	14	16.5	14	29.2	0	0
<b>2-2.9</b>	21	24.7	12	25.0	9	24.3
<b>3-3.9</b>	13	15.3	6	12.5	7	18.9
<b>4-5</b>	17	20.0	4	8.3	13	35.1
<b>6-10</b>	12	14.1	7	14.6	5	13.5

### Measuring amount of time allocated to caregiving

Two indicators of time allocated to caregiving are presented in *Table 41*:

**Primary:** Amount of time allocated to caregiving as a primary activity.

**Divided:** Calculated by dividing time allocated to caregiving for children. Divided time includes time spent caregiving as a primary activity and time allocated to caregiving as a secondary activity, where time spent caregiving as a secondary activity is recorded as half of a given minute time period.



**Table 41**

Mean amount of time allocated to care by block and by indicator

	Mean time allocated to caregiving	
	Ghatol	Kushalgarh
	N=48	N=37
	Range= (0, 210)	Range= (0, 345)
As a primary activity	76.9	65.7
Divided	102.3	91.6

### Key interpretations

Caregivers allocate time for caregiving as both a primary and a secondary activity. When reporting caregiving as a primary activity, a secondary activity was rarely reported. Conversely, caregiving was reported as a secondary activity to a range of primary activities.

It is important to consider the time allocated to caregiving as a secondary activity. The divided time indicator shows a large increase in time allocated to caregiving when allowing for time as a secondary activity in the analysis.

Data shows a wide variation in time allocated to caregiving amongst participants. There appears to be one main outlier in Kushalgarh, a woman that reported 345 minutes allocated primarily to caregiving (K0246). If this outlier is removed, the range narrows to an upper limit of 210 minutes and the mean number of minutes allocated to primary caregiving decreases to 57.9 minutes.

### Factors associated with time allocated to caregiving

This section of the report presents the results of an OLS regression analysis, exploring which factors are associated with the amount of divided time spent allocated to caregiving. Table \_ presents univariate and multivariate regression co-efficients and p-values for the whole sample of n=85 caregivers.

**Table 42**

Linear regression of factors associated with divided time allocated to time use

Variables	Univariate analysis		Multi-variate analysis	
	Co-efficient	P value	Co-efficient	P value
<b>Age of caregiver (years)</b>				
18-20		1		1
21-23	-36.5	0.081	-58.7	0.005
24-26	-19.3	0.336	-41.2	0.043
27-29	-42	0.086	-53.7	0.028
30-49	-41.8	0.062	-61.2	0.006
<b>Age of infant (months)</b>				
0-5		1		1
6-11	9.5	0.605	11.2	0.575
12-24	-25.8	0.056	-36.1	0.020
<b>Sex of Child</b>				

Variables	Univariate analysis		Multi-variate analysis	
	Co-efficient	P value	Co-efficient	P value
Female		1		1
Male	-22.6	0.061	-12.6	0.303
<b>Block</b>				
<b>GHATOL</b>			-	-
<b>KUSHALGARH</b>	-12.9	0.284	-	-
<b>Caste</b>				
<b>Scheduled Tribe</b>		1	-	-
<b>Scheduled Caste</b>	17.5	0.271	-	-
<b>OBC</b>	2.5	0.939	-	-
<b>General</b>	-2.5	0.964	-	-
<b>Number of Household Members</b>				
<b>&lt;4</b>		1	-	-
<b>5</b>	15.0	0.341	-	-
<b>6</b>	-22.3	0.171	-	-
<b>&gt;7</b>	-9.3	0.572	-	-
<b>Number of children under 5</b>				
<b>1</b>		1	-	-
<b>2</b>	-7.6	0.547	-	-
<b>3</b>	-2.0	0.941	-	-
<b>4</b>	-5.7	0.887	-	-
<b>Living with grandparents</b>				
<b>Yes</b>		1	-	-
<b>No</b>	-11.5	0.341	-	-
<b>SES Score</b>				
<b>4</b>		1		1
<b>5</b>	-97.5	0.148	-145.5	0.023
<b>7</b>	-78.1	0.172	-118.7	0.039
<b>8</b>	-95.5	0.092	-137.1	0.022
<b>9</b>	-108	0.059	-160.9	0.008
<b>10</b>	-81.6	0.162	-119.2	0.051
<b>11</b>	-87.9	0.123	-157.4	0.011
<b>12</b>	-115.3	0.050	-146.9	0.018
<b>13</b>	-52.5	0.497	-159.9	0.053
<b>14</b>	-157.5	0.044	-204.7	0.013
<b>15</b>	-67.5	0.384	-117.8	0.155
<b>18</b>	-22.5	0.737	-73.7	0.327
<b>19</b>	-112.5	0.148	-92.3	0.218

Variables	Univariate analysis		Multi-variate analysis	
	Co-efficient	P value	Co-efficient	P value
<b>Education of head of the household</b>				
Illiterate		1	-	-
Primary school certificate	-11.9	0.496	-	-
Middle school certificate	-2.8	0.880	-	-
High school certificate	-10.7	0.504	-	-
Intermediate or diploma	-28.0	0.625	-	-
Graduation	-	-	-	-
Above Graduation	-28.0	0.498	-	-
<b>Literacy of Caregiver</b>				
Literate			-	-
Illiterate	-11.9	0.328	-	-
<b>Cows / Buffaloes</b>				
Yes		1	-	-
No	12.9	0.351	-	-
<b>Goats</b>				
Yes		1	-	-
No	8.3	0.490	-	-
<b>Chicken / Ducks</b>				
Yes		1	-	-
No	-14.1	0.325	-	-
<b>Livestock kept in dwelling</b>				
Under same roof		1		1
Under separate roof	-25.6	0.07	-40.7	0.009
None	22.6	0.203	11.7	0.577
<b>Health worker visits in past month</b>				
None		1	-	-
ASHA	13.8	0.351	-	-
ANM	-13.9	0.515	-	-
AWW	10.8	0.510	-	-
<b>Location of main water source</b>				
In own dwelling		1	-	-
Elsewhere	10.1	0.477	-	-
Missing	1.875	0.963	-	-
<b>Main type of cooking fuel</b>				
Wood		1	-	-
Dung Cakes	3.4	0.802	-	-
Other	3.1	0.882	-	-

Variables	Univariate analysis		Multi-variate analysis	
	Co-efficient	P value	Co-efficient	P value
<b>Main source of lighting fuel</b>				
Electricity		1	-	-
Kerosene lamp	-14.6	0.240	-	-
Missing	-14.8	0.712	-	-
<b>Time taken to fh water in a day</b>				
30 minutes or less		1	-	-
31-60 minutes	0.6	0.980	-	-
61-90 minutes	-8	0.781	-	-
91-120 minutes	18.5	0.471	-	-
121-190 minutes	2.5	0.928	-	-
N/A	-1.25	0.975	-	-
<b>No of trips to fh water in a day</b>				
2		1	-	-
3	30.0	0.079	-	-
4	-8.75	0.734	-	-
5	33.75	0.267	-	-
6	26.25	0.522	-	-
Missing	-	-	-	-
<b>Ownership of agriculture land</b>				
0		1		1
1-1.9	4.7	0.19	79.1	0.025
2-2.9	-27.8	-1.18	32.0	0.327
3-3.9	-1.7	-0.06	48.8	0.134
4-5	-16.0	-0.66	42.3	0.205
6-10	-4.1	-0.16	83.3	0.021

## Key interpretations

Keeping livestock under a different roof than household members was associated with less time being allocated to caregiving in the univariate analysis. The association was confirmed in a multivariate analysis, adjusting for known confounders.

### The multivariate analysis also shows:

- Infants aged 12 to 24 received significantly less time allocated to caregiving than infants aged 0 to 5 months.

- Increasing age of caregiver was associated with less time allocated for caregiving, 18 to 20 year olds provided significantly more time to caring for their child than older age groups.
- If we remove one outlier (K0246), these associations do not change.

### Testing the relationship between time for caregiving and IYCF indicators

In univariate analysis:

- Neither Divided or Primary time allocated to caregiving were associated with minimum meal frequency.
- Neither Divided or Primary time allocated to caregiving were associated with minimum adequate diet.

In multivariate analysis:

- Neither Divided or Primary time allocated to caregiving were associated with minimum adequate diet.
- Neither Divided or Primary time allocated to caregiving were associated with minimum meal frequency.

### Time of Day and Quality of care

Literature suggests that the time of day in which time is allocated to caregiving is important, depending on the age of the child. Infants and young children are more receptive to carers in the morning, compared to adolescents who are more responsive in evenings.

Respondents reported allocating divided time (e.g. both primary and secondary time) for caregiving throughout the day. Figure 38 illustrates the distribution of time allocated to caregiving depending on block. We observed a different morning versus evening pattern of caregiving by block:

- Caregivers in Kushalgarh provided 40% of total caregiving time in the afternoon/evening compared to 26% in Ghatol.

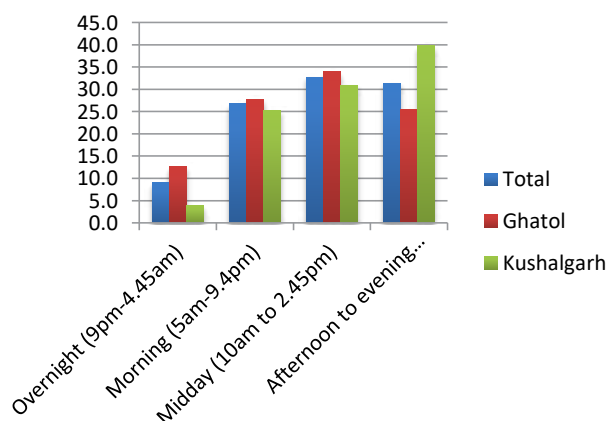


Figure 38 - Time allocated to caregiving according to time of day

## Labour force participation and type of work

The present study defines time spent in tending to farming and livestock as 'market work', alongside other paid forms of employment and own business work. Taken as an inclusive term, women in Kushalgarh allocated more time in a day to all forms of market work (farming and livestock, business work and work in employment). Conversely, women in Ghatol spent more time on domestic work than caregivers in Kushalgarh. This highlights a possible trade-off, whereby women who spend more time in market work may allocate less time to caregiving, yet studies show that more time in market work itself has been associated with increased food consumption within households living in poverty.

We found that, on average, women spent a greater amount of time in the activities of farming and tending livestock in Kushalgarh, consistent with our understanding that this block is more dependent on agriculture for income and subsistence. The household survey showed that around 70% of the households of Ghatol and 90% of Kushalgarh reared cows and/or buffaloes in their homes.

Results from the 'Time Use' survey showed that the proportion of households keeping cows and buffaloes between Ghatol (62.5%) versus Kushalgarh (91.1%) are similar to the proportion retrieved through the 'Household Survey'. Thus, it is of interest to understand if those keeping livestock in another dwelling have to travel further or are less likely to own the land they are living on. A cross comparison suggests that 35% of participants that keep livestock in a separate dwelling had between 6 to 10 bighas of land, and thus the effect could represent having more land to tend to. However, this association remains significant after multivariate analysis, indicating the need for further explanation.

An important consideration is that there is no easy way to assess time spent going to the toilet in this tool. Exploratory work determined that women would usually defecate in open areas, so this time is likely to be included in another category such as tending to farm and livestock or personal care. The household survey indicates that more people use toilets in Ghatol (36%) as compared to Kushalgarh (7%), whilst the blocks have the equivalent number of built toilets. Therefore, a preference for open defecation may slightly increase time spent on farming and in tending livestock, although it is difficult to assess the significance of this number.

## Domestic work

All but one woman (from Kushalgarh) reported spending time on domestic work in the past 24 hours. We do not have a comparison for other household members but these findings reflect local social structures where the wife and mother is responsible for unpaid household chores. Women in Ghatol appeared to spend more time on domestic work than their counterparts in Kushalgarh.

All women reported spending time cooking, which was recorded independently to 'domestic work'. Cooking was the most common primary activity to be paired with care-giving as a secondary activity. Given that the majority of women cook with wood or cow dung cakes, women were allocating some of this time in domestic work to collecting these resources as well.

The range of time spent fetching water for the household by women varied significantly; 32 mothers (38%) reported spending 31 to 60 minutes fetching water, whilst approximately 21 mothers (25%) spent 91 to 120 minutes fetching water in a day. FGDs and KII's indicate that this time reflects multiple trips per day, a topic which can be explored in future qualitative research. On an average, women in Ghatol spent more time fetching water, compared to those living in Kushalgarh; a finding which is consistent with the 'Household Survey' finding that: "consumption of drinking as well as non-drinking water is higher in Ghatol as compared to Kushalgarh, and due to this reason female adult members spend almost two hours of their time in Ghatol for fetching water, when this figure was only one hour in Kushalgarh". The inclusion of water collection within the definition of domestic chores may have contributed to the increased time that women in Ghatol reported spending on domestic chores. Evidence does not suggest that women are incentivised to time spend time socialising whilst fetching water. Rather, women in Kushalgarh spent more time socialising than in Ghatol, which could reflect time spent socialising as a secondary activity to farming or tending to livestock, or whilst caring for infants and young children. A potential trade off could be that we see more mothers watching TV and listening to the radio in Ghatol (zero reported this in Kushalgarh).

## Literacy and education<sup>23</sup>

Education and income of the caregiver or head of household were not associated with time allocated to caregiving, which is in line with evidence from other studies. As discussed above, time allocated to

23. see appendix for further discussion on interpretation of education between blocks

caregiving is often not compromised despite involvement in agriculture work. However, it is worth noting that the sample taken by the 'Time Use' survey is not representative of the household study; caregiver literacy was lower in Kushalgarh (30%) compared to Ghatol (46%).

## Qualitative Enquiry

The study was conducted in nine villages of Ghatol (n=5) and Kushalgarh (n=4) blocks of Banswara district, Rajasthan. The information was obtained from FGDs with 67 mothers, 58 paternal grandmothers and 49 key respondents across these nine villages.

The data revealed a large volume of information that was classified into four emergent themes: (1) Health and Nutrition, (2) Education, (3) WASH and (4) Cooking Fuels. Data from each theme was located in three levels – household, village and governance. The domains in Table 43 emerged from the data.

**Table 43**

Emergent Themes from Focus Group Discussions

Themes	Household level	Village Level	Governance level
A. Health and Nutrition:	A1.1 Breast feeding	A2.1 Livelihood	A3.1 Components of Government Programmes
	A1.2 Complementary feeding	A2.2 Livestock	A3.2 Quality of services
	A1.3 Feeding during illness	A2.3 Local wage labour	
	A1.4 Convenience food	A2.4 Migration and “Left Behind Population”	
	A1.5 Factors affecting infant and young child feeding	A2.5 Market for purchase and sale of food items	
	A1.6 Role of play in Early Childhood Development (ECD)	A2.6 Subsidized Government Fair Price Shops: Public Distribution System	
B. Education	B1.1 Enrolment	B2.1 Mid-day meals	B3.1 Services
	B1.2 Absenteeism and dropout	B2.2 Games	B3.2 School and AWC
	B1.3 Parental participation in school	B2.3 Health and WASH	
	B1.4 Parental participation in homework		
C. Water, Sanitation and Hygiene	C1.1 Water	C2.1 Water	
	C1.2 Sanitation	C 2.2 Sanitation	
	C1.3 Hand Washing		
D. Cooking Fuels	D1.1 Firewood	D2.1 LPG Connection	
	D1.2 LPG Connection		

## A1. Health and Nutrition: Household level

### A1.1. Breast feeding

#### A1.1.i Initiation of Breast Feeding

Mothers and grandmothers reported that almost 90% of births take place in health facilities. Reasons for delivering in a health facility included the presence of trained staff to handle any emergencies and cash benefits associated with institutional delivery. It was unanimously reported that childbirth in Kushalgarh took place mostly in public health institutions. Most mothers in Ghatol also reported the same, while only a few reported availing services of private hospitals. No homebirths were reported in Ghatol while a grandmother's group in Kushalgarh reported few cases of homedelivery occurred under the services of a Dai, or traditional midwife. Unlike in Ghatol, the participants of Kushalgarh reported they had mostly male Dais.

According to both the respondents groups the doctors and the nurses in the facilities advised for breastfeeding to the newborn immediately after the birth, irrespective of whether the child birth took place in public or private institutions. These health care providers aimed to ensure that mother's milk was received within one hour of childbirth. While some mothers reported they followed the advice and started to feed the child within one to two hours, others were of the opinion that milk secretion started after five to six hours. Only one mother reported that her child got breast milk after two days. Thus, the average reported time for initiation of breast feeding was between one to six hours and delay was attributed to biological reasons only (e.g. non-secretion of milk). These perceptions were unanimous across the two blocks.

*“When the child start crying after the birth then the breast milk is produced and mother is ready to breast-feed the child.” [Mothers, Kushalgarh]*

*“No, we have not breastfed the child soon after the childbirth. Breast-feeding is totally depends on the mothers ability of the milk production. If the childbirth has been taken place at, the evening then mothers can produce the breast milk and breastfeed only after 12'o clock in the midnight.” [Mothers, Ghatol]*

This practice of early initiation of breastfeeding was also followed in cases of homebirths. Those women who had given birth at home confirmed that breastfeeding starts as soon after birth as possible.

*“If the baby is delivered at home also breastfeeding is started immediately after birth. Most cases I am present during the childbirth and hence I ensure that the breastfeeding starts within one hour.” [ASHA Sahyogini (AS), Kushalgarh]*

#### A1.1.ii. Colostrum Feeding

All the frontline health workers reported that advice regarding benefits of colostrum is being given consistently and that it was being followed. Most mothers in both the blocks reported feeding colostrum as they were well informed about its benefits during the antenatal care check-ups as well as through community level meetings facilitated by the FHWs. The practice of not feeding the colostrum was reported by grandmother's group in two villages in Kushalgarh. According to them, colostrum was considered “dirty milk” due to its yellowish colour. This was thought to be a traditional practice and they were not aware of benefits of colostrum.

*“At the hospital the doctors and nurses advise to feed the kidhi (colostrum). If baby delivered at home, we do not want to give it because it is stale milk and hence is harmful for the child.” [Grandmothers, Kushalgarh]*



### **A1.1.iii Pre-lacteal Feed**

The practice of feeding pre-lacteals, like honey and water, was not found to be common in both the blocks. The grandmothers agreed that the practice of giving pre-lacteals to a child was common earlier. Since childbirths are taking place at healthcare facilities this practice is discouraged by the nurses and doctors.

*“Earlier days there were such practices, but not anymore.” [Mothers, Ghatol]*

*“Only if the mother’s milk secretion does not start, goat’s milk is given. Honey or any water is not given.”  
[Grandmother, Kushalgarh]*

### **A1.1. iv. Exclusive Breastfeeding**

All three categories of FHWs, across all study villages, defined exclusive breastfeeding as feeding only mother’s milk to the baby for first six months without any other fluids, such as milk of other animals or semi-solids. All FHWs reported that they counsel the mothers about exclusive breast feeding at the start of their antenatal care. Awareness among mothers was limited to breast milk being the most important food for the child for the first six months; however, most of the mothers in Ghatol responded that they exclusively breastfed for four to six months, while most in Kushalgarh were able to breastfeed till the third month. The frequency of breastfeeding in the first six months was reported to be as and when the child cries, i.e. ‘on cue’. This was also true for mothers who were working in the agricultural fields near their homes. They usually reported coming home once every one to two hours to feed the babies.

*“In the first half of the day we get only three-four hours and in between we get only around 15 minutes for the child.” [Mothers, Kushalgarh]*

*“When the child starts to cry, the mother comes to feed them with breast milk.” [Grandmother, Ghatol]*

*“We do find a problem in feeding the breast milk to the child but in the later stage as the child grows, the difficulties get reduces.” [Mothers, Ghatol]*

Mixed feeding or feeding other fluids like animal milk along with mother’s milk as well as introducing semi-solids like biscuits, was common across all villages in the under six month age group. Most mothers and grandmothers in all the villages reported introducing water, especially in summers. This practice was also confirmed as well as approved by the FHWs. Animal milk was reported to be introduced when the mother went out to work further away from the home. This observation was cited only in Kushalgarh, where women are more engaged in agricultural activities than Ghatol. The other reason for introducing animal milk was when the mother’s milk was perceived to be inadequate for the baby. Convenience foods, such as biscuits, were reported to be fed as early as four months by few grandmothers, especially from Kushalgarh; particularly, when the mother was away, and the child was demanding food.

*“In the summer season the child becomes thirsty, so water is given to the child. We also recommend giving water sometimes.” [AWW, Ghatol]*

*“When the child’s mother is out of the village due to some work or is working in the field, goat milk is given when the child cries for food.” [Grandmothers, Kushalgarh]*

### **A1.2 Complementary feeding**

The FHWs were found to be aware that correct age of starting complementary feeding is after the child is over the age of six months. According to them, most of the mothers started complementary food between seven and eight months, but most mothers shared that the child was mostly on a

liquid diet comprising of mother's milk and animal milk in the first year of life (generally goat's milk). Mothers who perceived that breast milk secretion was sufficient did not give any animal milk. Mothers who perceived that breast milk was inadequate tried to feed breast milk to the baby at least three times a day in the morning, afternoon and night, till the child was two years of age. On the remaining occasions, goat's milk was given because most households in Ghatol and Kushalgarh have easy access to this product. According to them, the semi-solid food was introduced only after the child was more than one year, when the child could eat on their own. However, few mothers in both blocks reported feeding semi solid after the sixth month; these mothers were younger, with better education levels. Only one mother in Ghatol mentioned feeding commercial baby food. The main reason of delayed introduction of semi-solid food was attributed to child's "lack of interest" in eating semi-solid food. This was expressed in terms of a long time taken to finish food, crying and also fidgeting while eating.

*"Almost all mothers introduce semi-solid food (updhi ahar) from the seventh month. We counsel the mothers that this is important for proper growth of the child." [AWWW, Ghatol]*

*"Children cannot eat anything even after six months, so we mostly breastfeed them if we have sufficient breast milk. If milk is available in the house we also give them that. Usually children are given goat milk along with mother's milk [Mothers, Ghatol]*

*"We only give breast milk to the child till one year. The child is not interested in having semi-solid food before one year." [Mothers, Kushalgarh]*

All FHWs, mothers and grandmothers across the nine study villages listed the same complementary foods, including pulses (in watery consistency), khichdi<sup>24</sup>, dalia<sup>25</sup> or small pieces of roti or roti dipped in milk. While the FHWs reported that children were feed four to five times per day, the mothers and grandmothers reported feeding on demand when the child cried. It was reported that there was no fixed time for feeding the child. Neither the FHWs nor the mothers had enough clarity about the frequency and quantity to be fed to the children. As per the caregivers, the quantity of food given to the child varied depending on the interest of the child. On further probing they reported that at a time the child ate only two or three spoons of food. One consistent finding was continuation of breastfeeding even after six months of age. However, the mothers in Ghatol breastfed their children till at least two years; those in Kushalgarh weaned after one year. This was mostly because either the mothers got pregnant with the next child or because they migrated as soon as the baby was a year or so old.

*"After the 6 months child start drinking milk (dairy). We also give Rab (grounded maize porridge), biscuits dipped in the water and sometime daal ka pani. We know what to give and what not to the child. AWW also tells us about this. We only take care of all things related to the child like cooking and feeding." [Mothers, Ghatol]*

*"We feed them separately. We do not feed them with us. Whenever the child gets hungry then only we feed them. The child do not understand anything, they eat whatever is we gives them." [Mothers, Kushalgarh]*

Barring a few, most mothers shared those children less than two years ate in small quantities and hence it was difficult to cook separately for them every day. These were unequivocal responses from mothers both from Kushalgarh as well as Ghatol. The food cooked in household for all members was often given to children, though with less spices, and participants reported children were mostly only given a piece of roti. Diversity in food items was limited to vegetables and sometimes pulses. The other common food for children was the Take Home Ration (THR) distributed at AWC every week. Mothers across both the blocks were explicit that while they received the packets of THR regularly, they were not aware of how

24. savoury rice and pulse gruel.

25. porridge with ground wheat with milk or water, mostly sweet.

it was to be cooked. Few reported that they knew just one recipe of the THR, which was to boil THR in water and add sugar. They did not know any alternative ways of preparing the THR. The AWWs also mentioned the same method of preparation. Mothers said that they were not told about the quantity intended for a child of a particular age. Some mothers complained that the smaller children did not like the taste; so THR was often given to older children, for whom THR is not intended. The practice of giving formula feed was rare; only one woman in Ghatol shared that she was giving formula feed. When explored in detail, it was found that she had earlier lived in an urban area.

*“In our village, in AWC the poshahar is distributed in every 8 days. Mothers take and give to the child after preparing it. After the 6 months of the child the poshahar should be given in a smaller quantity in the morning. Initially very small quantity and then increase little more amount and feed the child accordingly.”*  
[AWW, Ghatol]

*“The AWW tells us to boil it in water and add sugar to it. We give only small quantity, but do not measure. We also feed the children with our fingers, so cannot say how much the child actually eats. Sometime if there is left over the older children of 3 years and above also eat the THR.”* [Mothers, Kushalgarh]

Most respondents reported that goat's milk was fed to the child. The other common milk producing animal was cow. Most of these cows were of local breed, rather than a high milk yielding breed. Most households considered milk as an important part of child's diet. However, the daily consumption of milk varied across the blocks and families. As reported by mothers and grandmothers, families who had any milking livestock feed animal milk to the children daily. This was more common in Ghatol as a larger number of families have livestock. However, according to the teachers, Ward Panch and block level officers, households with larger availability of livestock may have milk or milk products, such as ghee, to sell. There was some concern this may reduce the household consumption of milk, even for the child. Families who did not have any milk producing animals reported buying milk as per requirement. The practice of feeding milk in households without livestock was reported less frequently and was given mostly in the form of tea. Money, as well as availability of milk, was considered to be a determining factor for milk consumption in households without livestock.

*“Only those who have goats at home give milk to their children regularly, at least once a day. They also dip the roti in milk. The others have to buy milk and that depends on availability of milk in the village as well as money.”* [Grandmothers, Kushalgarh]

*“Milk is available in most houses, so the small children get it. Sometimes they are given tea, instead of milk, when milk is available in less quantity. There is almost no selling of milk outside the village. Sometimes people who do not have milk buy milk from the other households in the village.”* [Grandmothers, Ghatol]

*“Anyone who has good quantity of milk generally makes ghee out of the milk and also sometimes sells to local dairy. Children are sometimes given milk, but not always.”* [Ward Panch, Ghatol]

Consumption of non-vegetarian food was found to be dwindling. This was attributed to religious reasons or the locally termed 'bhagat' culture. The KII respondents highlighted that this is a relatively recent trend that consumption of non-vegetarian food was discouraged by religious leaders. Families who consumed these foods, especially meat and egg, did so secretly. This practice was more in Ghatol, where more respondents ascribed to this belief. In Kushalgarh, hens were reared in most households and availability of eggs was more common. However due to these religious values, respondents often denied consumption of non-vegetarian food. Responses from both blocks indicated that children under five years were rarely given non-vegetarian food; when given the quantity was less.

*“Nobody eats non-vegetarian food because they have become followers. This is a recent trend. Havan is conducted in the village after which every family has stopped eating. No question of giving it to children.”*  
[Ward Panch, Ghatol]

*“Very few families eat non-vegetarian. Those who eat also give their children. This is made only if there is a guest at home or there is any occasion. Mostly eat chicken. Eggs are not eaten as they are left to hatch, and the goats are sold.” [Teacher, Kushalgarh]*

Consumption of fruits, though unanimously considered to be beneficial, was rare. Responses from Ghatol reflected that fruit consumption is more common than in Kushalgarh. The common reasons for this included the issue of availability and cost. Fruits are generally available in the market located far from the villages; this is more so in case of the Kushalgarh villages. Purchase of fruits is only possible when any family member went to these markets. It was also reported that since most fruits expensive, it was purchased less frequently; teachers also confirmed this.

Consumption of vegetables comprised mostly of potatoes, tomatoes and other seasonal vegetables that were locally grown. There was less consumption of green leafy vegetables, for children, even though it was readily available. Neither availability nor cost of vegetables was a deterrent to its consumption. In Ghatol, mothers responded that sometime the vegetable sellers also came to the villages.

*“Fruits are not very common in daily diet. Only when the parents go to the market they get fruits. There is availability of local fruits which are not too good for children, like tamarind and ber.” [Teacher, Kushalgarh]*

*“Some vegetables are grown in the backyard of each and every house, mostly beans and brinjal. This is used quite regularly. Potatoes, tomatoes and onion are cooked almost on a daily basis. The local vegetables like spinach are seldom grown as people do not want to eat them.” [ANM, Ghatol]*

*“Sometimes the vegetable sellers come to the village, so we do not have to go to the market. Anyone who has the money can buy it. This is not so fruits.” [AS, GHATOL]*

### **A1.3 Feeding During Illness**

Children in both the blocks suffered mostly from seasonal illnesses like diarrhoea, cough and cold and fever. Mothers attributed childhood illnesses to faulty habits of the children like having food with dirty hands. Some of the grandmothers also referred to lack of adequate care by mothers as the reason for illness in children. There was agreement that children were reluctant to have regular feeds in adequate quantity during periods of illness. They mostly demanded breast milk or biscuits, which was given to pacify them. It is also evident from the responses of the FHWs that the feeding of biscuits during illness was very common. Fruits are also given more often to ill children.

*“We asked the child that what they want to eat. We give them whatever they like to have like biscuits. If the child gets cold then we do not give them rice. We bring apple, banana and such fruits for them.” [Mothers, Ghatol]*

*“When the child is sick, he does not eat anything, not even fruits. He just want mother’s milk. Mother’s do not have time so they cannot give attention to take care of the child adequately for which the child gets sick.” [AWW, Kushalgarh]*

### **A1.4 Convenience Food**

Biscuits were the most common convenience food; the consumption of potato chips/crisps/fritters (locally produced, not reputed brands) was also very high. These items are introduced from the age of 4 months along with tea or water for several reasons. First, the mothers and other caregivers find it very convenient as they do not need to cook and feed the child. Second, they are easily available in the local shops in the village and are affordable; the average price is not more than Rs. 5 per packet. Third, children enjoyed the taste of these items and hence easily ate those. These were also the reasons why other caregivers like the grandmothers and other family members preferred to give

the children biscuits. These were generally given in the morning as the first meal of the day; and/or between meals when the child demanded food. One biscuit was given at a time, three to four biscuits were given each day. Some FHWs also recommended giving biscuits as a regular complementary food, after six months.

*“Children like biscuits and it is easy to feed them. We give them one biscuit and they keep eating it. We do not have to feed them.” [Grandmother Kushalgarh]*

*“This is the cheapest option and is easily available in the village.” [Mothers. Ghatol]*

*“We tell the mothers that they can give biscuits to the child, at least it will keep them full.” [ANM, Kushalgarh]*

### **A1.5 Factors affecting choice of food**

Two factors seemed to affect the choice of food and feeding patterns for children below the age of two years. These factors were maternal time use and mothers’ autonomy in decision about cooking, purchasing and feeding of children. Both factors are discussed in detail below.

#### **A1.5.i Maternal time use**

In both the blocks, mothers generally stayed at or worked very close to their homes until the child was two months of age. However, they were involved in cooking and other household chores like cleaning and taking care of livestock. They were also engaged in outdoor work including agricultural work in the field and the collection of firewood and water. Mothers from Ghatol reported that they did not go out to work outside the villages. There were few mothers who said that they took up daily work in the nearby factory but only after their child was at least one year old. In Kushalgarh, women reported that they migrate to nearby towns and districts along with their husbands and child once the child is above six months. Mothers did not consider taking care of children to constitute additional work in their day; hence no specific time was devoted for childcare and childcare it was mostly need based.

*“When the child is very young below 6 months then we do not go far distant for the work. Therefore, we can come to the child whenever is required.” [Mothers, Ghatol]*

*“The mother cannot sit at home taking care of the child, who will look after the animals, get water, cook. They also have to do agriculture.” [Grandmothers Kushalgarh]*

*“Some mothers work a lot and hence they are not able to take care of the child adequately. Grandmothers help but they are also old people so cannot do much.” [ANM, Ghatol]*

Both mothers and grandmothers agreed that the responsibility of feeding a child lies with the mother. She generally feeds the child in course of the day’s work, while she is at home. Even when engaged in agriculture, she comes home in the afternoon to bathe and feed the child. Grandmothers generally took care of the child in the absence of the mother.

*“When my daughter-in-law work outside then we grandmother take care of the child. Like when the child is crying and have to feed them, we use to sit and keep them in our lap and make them comfortable. we keep an eye on the child and their activity.” [Grandmother Ghatol]*

*“If there is no grandmother she will give her child to the sister-in-law (elder brother’s wife).” [AS, Ghatol]*

*They use swing<sup>26</sup> for the child. They feed the child those are little big because we mother only feed the toddlers. [AWWW, Kushalgarh]*

26. A cradle for the child made by hanging a big piece of cloth. Sometimes woods are also used.

The role of the grandmother is limited to ensuring safety of the child and also to provide food if the child is hungry. It was also reported that fathers and grandfathers also take part on child care practices when they are available in the house and not occupied with other activities. The scope of their engagement is limited to babysitting the child. Teachers reported that elder siblings, especially girls, are often absent from school for taking care of younger siblings, especially in those cases where both the mother and father has migrated outside the village or if the primary care giver is unavailable.

### **A1.5.ii Autonomy in decision making**

Mothers were unanimously considered to be the primary caregivers. All mothers reported that they were guided as well as influenced by the grandmothers, other family members and the FHWs. However, in cases of disagreement, the final decision was ultimately up to the mothers. Grandmothers also shared that they did not interfere with mothers' decision making. Therefore, other decisions associated with child feeding, like which item to buy, how much to feed and when to feed was also taken by the mother. It was reported that other family members assisted the mother in executing her decisions.

Mothers in Ghatol said that the purchase of food was mostly done by male family because they went to the market most frequently. However, the decision of what needs to be bought for the child was taken by the mother and conveyed to the male shoppers. In Kushalgarh, where the male family members were mostly away, the purchase of food items was also done by the mother.

*“Men bring only when we asked them to bring the things for home. Father brings ration for home. If they bring things then it is fine. And if not then it is little bit difficult for us”. [Mothers, Kushalgarh]*

When husband go for the work, while returning from there he gets all the foods items with him. Sometimes when the husband is in hurry and getting late for the work, in that situation we cook rice instead of roti for them. In case there are no vegetables at home then we asked the husband to bring some packaged snacks or 'Sev-namkeen'<sup>27</sup>, so, that we can give it as lunch to the children. Here it is common that we pack 'sev-namkeen' for the child's school lunch, when we are in a hurry. [Mothers, Ghatol]

### **A1.6 Role of Play**

During the FGDs with mothers and grandmothers, it was observed that eliciting responses to questions about play was difficult, as it was difficult for the respondents to explain the play activities. This indicates that playing activities were not structured. After persistent probing, mothers responded that although they realized that playing with small children is beneficial for the physical development of the child as well as their speech, they were unable to play with children due to their work routine, both inside and outside house. They also shared that they show their affection towards the children by taking them in the lap and kissing the cheeks. Grandmothers undertook most of the play activities with the children; these entailed talking to the child or engaging them with locally made toys and also speaking to the child. They also performed activities that helped the child stand and walk. According to grandmothers, playing was considered necessary for keeping the child happy and avoiding cranky behaviour when the mother was away. The other common playmate of the child was their elder siblings. All teachers also supported the need for physical development and sustaining interest through play, but they also confirmed that parents were unable take time out for children as they were busy with livelihood and household work.

*“We say papa, kaka and the baby learn to speak. Play is important for developing the speech.”*  
[Grandmothers, Kushalgarh]

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27. A kind of snack made up of fried gram flour mixed with different spices.



*“We buy toys and also make some using old and broken materials lying in the house.” [Mothers, Ghatol]*

*“We roll the balls and the child follows. This helps me to crawl.” [Grandmothers, Ghatol]*

## **A2. Health and Nutrition: Village Level**

### **A2.1. Livelihood**

Agriculture is the main source of livelihood in both these blocks. There is a variation in the nature of crops grown in Ghatol and Kushalgarh due to availability of water throughout the year from Mahi Dam in Ghatol block. The average size of the land holdings per family was greater in Kushalgarh than in Ghatol<sup>28</sup>. The villages of Kushalgarh are mostly dependent on rainwater, although some of the study villages in Kushalgarh also get water from a nearby dam, but only for up to six months in the year, between October and March. Women were engaged in agriculture in both these blocks, but there were some differences in their patterns of involvement across these blocks. Women were engaged in agriculture in both these blocks during sowing and harvesting seasons, in the remaining period men took care of agriculture. In Kushalgarh, women were responsible for the entire period of cultivation; men were only engaged during the sowing and harvesting.

*“Most people do agriculture. From all house, both male and female take part in agriculture. Men play an important role of sowing and harvesting while women do the rest. Women are engaged all year round.”  
[School Teacher, Kushalgarh]*

*“Men mostly do agricultural work. Women are also involved but in menial jobs. Those who have access to water are able to grow vegetable, others grow only maize, wheat and soyabeans.” [Ward Panch, Ghatol]*

There are multiple crops cultivated in Ghatol, including wheat, maize, jawar, rice and pulses. Beside food crops, soybean is commonly grown in Ghatol. Few households also grow vegetables like spinaches (palak and methi) and green gram in large scale. In Kushalgarh, the agricultural land can be divided into two types, those crops with two cycles in a year and those with only a single crop. The Kharif crop comprises mostly of maize and cotton; the Rabi crop is wheat, bajra and jowar; mostly in the villages where canal irrigation was available. Cotton was also grown mostly in those households with greater landholdings and availability of water. The food crops grown were used for household consumption. Occasionally food crops were sold along with the cash crops in the local market to meet other household requirements.

### **A2.2. Livestock**

Cow and goat were common livestock in both these blocks; buffaloes were found in few households. The number of households varied within and across villages, depending on the standard of living. More households reported having at least one of these two animals in Ghatol. Goat's milk was mostly used for household consumption in tea and also given to children. Most houses with cows were also using the milk for household consumption though the quantity of milk was much smaller. Very few households were reported to sell milk. Rearing of country chicken was found mostly in Kushalgarh. Goat was also sold to khatiks, or local traders, for additional income. Consumption of goat meat at the household level was not reported, while chicken was reared mostly for household consumption. Eggs were not eaten but hatched for increasing the stock.

*“There is no one to take care of livestock at home, sizes of farms have shrunk, hence livestock don't have place for grazing, hence more and more people are not keeping livestock.” [AS, Kushalgarh]*

*“Most houses keep goats, some also have cow. Buffaloes are very less in the village. All of these animals do not give milk. Milk from goat is used for home consumptions only. Cow and buffalo milk is used for making ghee. Few families also sell it. They do not feed milk to their children.” [Ward Panch, Ghatol]*

28. This has to be quantified with HH survey data

Tending to livestock was the primary responsibility of women. It was a part of the daily chores of every woman's life, even those with small children. In villages like Udpura in Ghatol, where women from better off Patidar communities were reported not to engage in agricultural activities but were responsible for animal husbandry. These tasks include cleaning the animal shed, getting fodder for the animals and also milking them.

*“Taking care of the animals is the work of women because they stay in the house. They are ones who clean the shed and give the animals fodder and water.” [Mothers, Ghatol]*

### **A2.3. Local wage labour**

Local wage labour was more common in the Ghatol villages because of the proximity to the Banswara district headquarters and also availability of work in a cloth mill at Banswara. Mostly men and few women in the productive age group went for wage labour. Mothers, of children less than two years of age, did not go for any kind of work outside the village. Wage labour was generally sought in May and June, which are lean periods for agriculture. Involvement of women in the income generation activities under the National Rural Employment Guarantee Scheme is less. Currently, men are mostly engaged in construction works.

*“Some men from the village work in Mayur mills. Some also work as wage labours, but only during lean seasons. Women with small children do not go out of the village to work.” [School Teacher, Ghatol]*

*“No one goes to work in Kushalgarh or adjoining villages. There is no work here.”  
[Ward Panch, Kushalgarh]*

### **A2.4. Migration and Left Behind Population**

There is more migration from Kushalgarh villages than Ghatol due to the relatively reduced scope for agriculture and the proximity to Madhya Pradesh and Gujarat. Generally, males in the productive age group migrate for daily wage labour. Sometimes women with children older than three years also migrate. Family members of these migrants who do not accompany them stay back at the village are termed 'left behind'. Left behind populations comprise the elderly, women with small children and children who can take care of themselves. It was reported that mothers with children less than one year did not migrate; once the child was more than a year-old mothers left their children with the paternal grandparents and migrated with their husbands. The migrated members of the families return during the sowing and harvesting seasons. Most of the migration in Kushalgarh is seasonal in nature, following two or three cycles in a year with each cycle ranging from about two weeks to two months.

*“Men go to work in Gujarat and MP to work in construction sites and as wage labours during the lean seasons as well as after sowing. They go for two to three months and come back again during harvesting season. Their wives also go with them. School going children are left with their grandparents.”  
[Ward Panch, Kushalgarh]*

*“Very rarely the male migrates outside Banswara. Those who go to work in Banswara town go in the morning and come back in the evening every day.” [Ward Panch, Ghatol]*

The situation was different in Ghatol. Out of the five study villages of Ghatol, migration was found among the Patidar community in Udpura. Male members of this community worked in the Gulf countries. This migration was not seasonal and lasted for a longer duration of two to three years, with a return home lasting about six months. The rest of their family reside and work in the village. Women in these household are not engaged in any kind of agricultural activities or employment. They only take care of the house and the livestock.



## **A2.5. Markets for purchase and sale of food items**

Beside the food from agriculture, markets were the other main sources of food items. Grains and some vegetables are mostly obtained from agricultural land hence available at the village itself. Some food items like groceries, vegetables and fruits were generally purchased from the market. Milk was available in the village, either in the household or in other households who have milk producing animals. The market is useful for selling of crops, especially cash crops like soybean and cotton. Credit transactions for purchase of food items were not common. During food scarcity families sold any additional food grains that they received from the government fair price shops for cash. Cash crops were also sold in the local markets.

The distance to any market in the case of Ghatol villages ranges from 5 to 20 kms. The availability of transport facilities, both private (two wheelers) and public are also abundant. In case of Kushalgarh, the distance to markets ranges from 20 to 40 kms, with limited public and personal transport facilities. The access is further influenced by the presence of male members in the household and frequency of their going to the market. Male members in Ghatol go to Banswara or Ghatol town regularly and food items especially from the market are purchased on a regular basis. Due to lack of all these supportive factors, frequency of purchasing food items is less in Kushalgarh. Small shops are in all the study villages. These shops mostly sell items like biscuits, spices, soaps and some non-perishable food items.

*“Market is almost 20kms from this village, so people go there rarely. There is only one vehicle which goes in the morning and comes back in the evening. People only go when it is very necessary.”*

*[School Teacher, Kushalgarh]*

*“Every day one or the other member of the household goes the market. There are many markets. The nearest one is 5 kms.” [Mothers, Ghatol]*

## **A2.6: Subsidized Government Fair Price Shops: Public Distribution System**

It was reported by all key Informants that 20 kgs of wheat was available from the PDS on a regular basis for each and every household. Uptake of the services was also confirmed by mothers and grandmothers. There was no discernible difference in the functioning of the PDS in the two blocks as far as purchase of wheat was concerned. In Kushalgarh, kerosene was also available from the PDS, but not in Ghatol. In Kushalgarh, supply of kerosene was discontinued for some households; those who had availed of the Ujjwala Scheme for LPG connection and also those who had not built the household toilets.

*“Everybody gets 20kgs of wheat a month. The ration shops work very well.”*

*[Ward Panch Ghatol, Kushalgarh]*

*“Kerosene is not available in the ration shops. We buy it from the market as per requirement.” [AS, Ghatol]*

*“Kerosene is available in ration shops. Those who have taken gas connection they no more get kerosene. Kerosene is also not being given to families who have not built toilets.” [Ward Panch, Kushalgarh]*

## **A3. Health and Nutrition: Governance Level**

### **A3.1. Components**

#### **A3.1.i Vaccination**

The FHWs across all nine study villages responded that the regular vaccination sessions were conducted on Maternal Child Health and Nutrition Days (MCHN Days). These days are organized every month on a fixed day at the AWCs. While vaccination is the primary responsibility of ANM, the

task is performed jointly along with AWW and ASHA. ANMs prepare 'due lists' of a day or two prior to the activity and AWW and AS are responsible for informing the respective mothers to attend the session on the given date. Only those mothers whose babies are listed attend these sessions. Besides this fixed day, vaccination was also done at the primary health centres, so any child who has not vaccinated on the MCHN day can get vaccinated there. No problems of vaccine shortage and social resistance were reported by key informants as well as the mothers.

*"We organise vaccination on every first Monday in this Anganwadi. I make the due list and according to that list get the vaccines from the PHC, so there is no shortage of vaccines. The community also cooperates in vaccination. AS goes to call them and they come."* [ANM, Ghatol]

*"We all support the ANM during vaccination. AWW takes the weight, I go to call the mothers. Sometimes I have to go two three times. But all women come with their child. Those who are not in the village on that day, I tell them to go to the SC on Friday."* [AS, Kushalgarh]

### **A3.1.ii Growth Monitoring**

All FHWs claimed that on every MCHN day, children are being weighed. However, it is limited to only those children who attend the vaccination session. AWW are responsible weighing the child and recorded in the Mother Child Protection Card (Mamta Card) provided to the mother. In Ghatol, the mothers reported that weighing of children was done occasionally, while in Kushalgarh it was rarely done. The reasons for non-weighing were primarily supply-side issues, such as unavailability of functional weighing machine for kids. Some FHWs also reported that they use the Mid Upper Arm Circumference (MUAC) tape to identify the nutritional status of the child. However, use of these tapes was not regular. It was either done selectively for children who looked under-nourished or in situations when the weighing machine was either not available or non-functional. It was also used in a campaign mode to identify children with grade 3 and 4 malnutrition.

*"We take the weight of the child who comes for the vaccination. Sometimes the mothers do not get the card when they come for vaccination, so weight cannot be recorded in the mamta card."* [AWW, Ghatol]

*"We take weight, but currently the weight machine is not working. If we see a thin child we use the tape. From that we get to know if the child is malnourished."* [AWW, Kushalgarh]

*"Anganwadi sister do not weigh our child regularly. This may be due to the broken weight machine. Sometimes she uses a tape to measure."* [Mothers, Kushalgarh]

### **A3.1.iii Distribution of Take Home Ration**

Regular supply and distribution of THR was reported by FHWs and mothers/ grandmothers in all the study villages; the same was also observed in some AWCs when mothers gathered for FGD. Two types of ration were distributed, including one for the pregnant women and lactating women and another for children aged six months to three years. Only some mothers in both the blocks were aware of the cooking procedures; they cooked it in hot water and sugar was added. However, they were not aware of the quantity and the frequency of feed, which was reported to be arbitrary. Few mothers in Kushalgarh also reported that sometimes the THR is not given as complementary feed; instead it was given to older children.

*"When our packet finishes we come to the Anganwadi and collect it. The anganwadi sister has told us to cook this in hot water, mix sugar and feed the child. Nothing about quantity has been told."* [Mothers, Kushalgarh]

*"There is no shortage of THR. We give it to whoever asks for it. I have also told them how to cook that powder. Some mothers do it, while some mothers are not able to. They do not understand."* [AWW, Ghatol]

### **A3.1.iv Counselling for IYCF**

Another important factor that affected the feeding practices of infant and young children is the quality of counselling that the mothers receive from the FHWs. The FHWs reported two platforms for delivery of counselling services, MCHN Day sessions and Pukar meetings. Both these activities were being held once every month in each village. MCHN day sessions were organized at the AWC with the primary focus on vaccination; but it also served the purpose of counselling expecting mothers and mothers of small children about feeding and care practices for children.

Pukar meetings, on the other hand, were held in the community. They were organized in the house of any beneficiary where all others assembled. No services, except counselling and awareness, were given in these sessions. These sessions are especially designed in Banswara district with the order of the district collector, and not a national level programme. As per the guidelines of Pukar programme such meeting are held every week in one village, but currently is being organized once a month. The responsibility of organizing these meetings is with the ASHA and the AWW, with the ANM present. The major topics covered in meetings are pregnancy care, vaccination and child care. Some FHWs reported counselling about IYCF topics was also done. Only one AWW shared that she prepared different recipes from the THR during the Pukar meetings to train mothers on preparing them. ASs also reported that over the course of household postnatal care visits they discussed exclusive breastfeeding.

*“We organize Pukar meetings in the house of any one beneficiary, where all other beneficiaries assemble. We tell the pregnant ladies and also the mother in laws about necessary care during pregnancy periods. We also tell about exclusive breastfeeding. One such meeting is held in one village per month.”*

*[ANM, Ghatol and Kushalgarh]*

### **A3.2 Quality issues**

Out of the three FHW cadres interviewed in the study, it was observed that ANMs were better informed about issues related to infant and young child nutrition. However, the AWW are the main promoters of IYCF and seldom had adequate knowledge. There was lack of information about malnutrition, its factors and markers. Most of them were of the opinion that malnutrition is identified as the child looking frail. According to them, only two or three children were malnourished in their respective area of operation. On further probing it was understood that the AWWs were only identifying those children who are severely malnourished. Their knowledge regarding exclusive breast feeding and complementary feeding was also incomplete, with some thinking that giving water to children before six months falls under exclusive breast feeding, while others recommended giving biscuits. Regarding complementary feeding, the knowledge was limited to the nature of food and information regarding quantity and frequency was mostly suppositious.

Besides the quality of the knowledge AWW and AS, there were problems related to the nature of supervision and monitoring. This was worse in Kushalgarh as compared to Ghatol. AWWs reported that there was no regular monitoring of the activities that they were carrying out at the village level. However, there were regular meetings of AWW and AS held at the sector level, which is a cluster of 10-15 AWC, and also at the block level. ANMs also had meetings at the PHC level on a monthly basis. These meetings were platforms to collate data from the FHW and also impart some technical information or knowledge of any new schemes.

*“No, LS or the CDPO do not visits our centre. We only go to the sector meetings where they ask us about the number of pregnant women registered, children born and packets of THR distributed. They sometime give us new information. The focus is on children coming to AWC.” [AWW, Kushalgarh]*

There were diverse perspectives of key informants, such as PRIs and School Teachers, about the services provided by the FHWs. First, in villages where the AWC was in school premises or the school

teacher showed interest in monitoring the AWC, the teachers were of the opinion that the FHWs were working efficiently. In case of AWCs which were either far away from the school or where the teachers did not have much interaction with the FHWs, the teachers were unaware of the quality of work the FHWs were doing. Few were of the opinion that AWCs did not maintain records and other documents properly. This was reported from both Ghatol and Kushalgarh. None of the elected representatives in the villages had full understanding of IYCF practices, few reported visiting AWC occasionally. All of them were vaguely familiar with the role of FHWs. Most of the PRI members were not aware of Village Health and Sanitation Committees meetings and its functioning, of which he/she is supposed to be a member.

*“The AWC is in the school premise so we can always keep a check whether children are getting their meals. The AWW and the other staff also come in time and regularly open the centre.”*  
[School Teacher, Kushalgarh]

*“We are already overburdened with the work of the school. It is not possible to check the functioning of the AWC. However sometime while going back from school I go to the AWC and speak to the workers. I have seen their records and gave them suggestions to maintain it better. What more can we do?”*  
[School Teacher, Ghatol]

## **B1. Education: Household Level**

### **B1.1 Enrolment**

All teachers across these nine villages claimed that school enrolment was high. Some teachers described the process of ensuring 100% enrolment, which starts with door to door identification of children above five years of age and is validated with the birth listing done by FHWs. It was reported that not all the enrolled children go to the government schools; this was specially the case in Ghatol where three out of five study villages had a private school in its vicinity. The number of girls enrolled in the government schools outnumbered the boys, indicating that boys may be preferentially sent to private English medium promoting schools. Teachers also reported that children from higher income households are sent to private school under the assumption that they offer higher quality education, while those from lower income families are sent to the government schools. However, this was not the case in Kushalgarh where none of the study villages had a private school and all the students were going to government school.

*“School enrolment is not a problem in this village. Once a year we do a door to door survey to identify school going children. Some families who can afford to send their children to the private do so, rest send them to the government school.”* [School Teacher, Ghatol]

*“There are no children who are not in school. All children above 5 years come to school. The parents send them to the government school only. There are no private schools in this village or in the nearby villages.”*  
[School Teacher, Kushalgarh]

### **B1.2 Absenteeism and drop out**

Absenteeism was identified as a problem by the school teachers in both the blocks, but responses from the mothers did not confirm to this view. The teachers in Ghatol shared that during harvesting seasons school aged girls were kept at home to take care of the younger siblings and elder boys assisted in the agricultural work. Similar patterns of absenteeism were also reported from Kushalgarh. In addition, boys between the ages of 12 and 15 were also found to miss school in lean seasons. According to the teachers, these boys join the labour market with other adult male members in the family who migrate to Gujarat and Madhya Pradesh. The narratives from the PRI member did not corroborate this information, however.

*“Children mostly miss school when there is harvesting season. Sometimes the entire family gets busy so there is no one to send the child to school. The girls also miss school when they have to take care of their little siblings, but rarely. Boys are naughty, they just do not come to school. Parents do not give so much attention.” [School Teacher, Ghatol]*

*“Boys above 12 years sometimes go with their family to Gujarat for a month or two. That is when they are absent. They go to earn some extra money.” [School Teachers, Kushalgarh]*

### **B 1.3 Parental participation in schools**

Parents generally reported attending two kinds of events in schools. The interactions either took place during celebration of national days in the school (e.g. Independence Day or Republic Day) or if a parent was summoned to discuss the progress of their child. In addition to this School Management Committee meetings were also held in the school once a month. Both teachers and mothers in all the study villages were of the opinion that parents rarely visited the schools. Teachers in Ghatol reported that 30-40% of parents attended these meetings, but according to teachers in Kushalgarh only 10-12% took part. In Ghatol the fathers mostly attended the parent-teacher meetings and in Kushalgarh the grandfathers, uncles and brothers attended. According to the teachers from Kushalgarh, this was attributed to the high rate of migration among males in the productive age groups. In both districts, the participation of mothers was reported to be low. While the teachers believed that most mothers were not educated and therefore did not ascribe enough value to education, mothers were of the opinion that since the teachers are male, it is better for male family members to attend the meeting. Moreover, they did not find the timing of the meetings to be conducive to attendance, as they are busy with their household chores.

*“Very few people attend this meeting. We send invitations to all, only 30-40% come. Fathers mostly attend the meetings. Mothers are busy and also not educated.” [School Teacher, Ghatol]*

*“Generally 4-5 people come, mostly men. Either it is the father or the grandfather. Mothers come very rarely, only those who are wise “samajhdar”. Migration is the reason for such poor attendance in meetings. They do not have time.” [School Teacher, Kushalgarh]*

Besides these formal meetings in schools, some teachers in Ghatol reported organizing meetings at the community level. This was however not true for all schools of Ghatol and certainly not in Kushalgarh schools. The teachers who were conducting such meetings shared that they were able to effectively engage with the community. However, it was difficult to maintain the regularity of such events as there is already a shortage of teachers.

*“We go inside the village to interact with the parents. The School Management Committee helps to fix a date, time and place for these meetings. These meetings are useful. Fathers, sometimes mothers also come to these meetings. It is easy for them to attend those meetings, but we cannot do it frequently.” [School Teacher, Ghatol]*

### **B1.4 Parental participation in homework**

According to the teachers from both the blocks homework was given regularly, but the response of the children and their family members were different. Based on the response, the children could be classified in three categories: some children did not complete the tasks, few completed the tasks with some errors and there were also children who were able to complete the tasks correctly. This difference was due to the engagement of the family members. The first category of students was mostly those who stayed with their grandparents or the parents who were illiterate and therefore had no support for in their education. The second category of students were those where the child's mother was educated till 5th standard or had a school going elder sibling who assisted him/her. Occasionally, the parents of children in the third category were engaged in teaching the child.

According to teachers in Kushalgarh, the majority of students belonged to the first category and the remaining few were in the second category. In case of Ghatol, the first category of students was relatively smaller.

*“Homework is mostly done at school. Few children do it at home, if they have an elder sibling. Only in rare occasion they get support of their father even if he is educated. The mother is not educated, so she cannot be of much help. But it is for the mother that the child sits down to study; otherwise he would be playing all day.” [School Teacher, Ghatol]*

*“Most children stay with the grandparents. They do not have any environment for studying at home. Homework is done at schools.” [School Teacher, Kushalgarh]*

*“Only educated mothers can help. We just tell the child to study.” [Mothers, Ghatol and Kushalgarh]*

## **B2. Education: Village Level**

### **B2.1 Mid-day meals**

All the teachers, PRI and mothers responded that the mid-day meal was prepared in the school and served regularly to the students. The menu for each day was fixed by the department. Diet plans include cereals, like wheat and rice, pulses and vegetables. Fruit was also given once a week. The food was prepared by a cook and an assistant under the supervision of the principal and other teachers. All children are mandated to eat the food at the school only. Neither the FGDs with mothers nor interviews with PRIs highlighted any concerns about the quality of the meals provided in the schools. The teachers, especially from schools in Kushalgarh, were of the opinion that the diversity of nutrients offered in mid-day meals is missing in foods served in the household.

*“Yes, we provide food to children regularly. It is cooked in the school’s kitchen. The food includes chapatti and daal (pulses), khichdi and once a week fruit. The food that they get in schools is better than what they get in home. Dal is not cooked in the homes every day. Fruit is also an attraction among kids.” [School Teachers, Kushalgarh]*

*“I have seen food being served in schools regularly. Sometimes I go to check the quality also.” [Ward Panch, Ghatol]*

### **B2.2 Games**

The teachers in all the nine schools expressed their interest in engaging the children with play activities. All teachers agreed that playing is an essential component of physical and mental wellbeing. Some teachers have also assigned the last period of the class as the games periods, when the children are allowed to play. In some schools, physical education teachers were also present. Absence of a well designated playground and equipment to play was seen as a major limitation to integrating play activities in schools.

Teachers also described their opinions about play activities taking place at the household level with smaller children. According to most of the teachers, there is a need for additional forms of active play with the younger kids so that they grow up to be healthy adults. One teacher from a school in Kushalgarh also stated that the community did not approve of teachers engaged in play with children during school hours.

*“Playing is very necessary for the holistic development of children. We devote the last period each day for that. The children play among themselves. There is no equipment to play with. Sometime the Physical Education Teacher train the children. Lady Teachers also play with girls when they get some time.” [School Teacher, Ghatol]*



*“We also want the children to play. It is very important, but there is no play ground in the school, no equipment. Parents sometime question us why we play games, school is for studying not playing.”*

*[School Teachers, Kushalgarh]*

### **B2.3 Health and WASH**

The school adopts different approaches to improve health and hygiene practices of the students. For health, an annual check-up was conducted each year by the ANM. The teachers explained that the ANMs came with adequate medicine for camps, and mostly provided first aid treatment. They also identify children who need special medical attention and request that teachers speak to the parents about seeking medical care. The ANM visits once a month, except schools in which the AWC is located in its premises. The children from the school also availed health services from the ANM.

Hand pumps were available on the premises of most schools that were used as a source of drinking water. While, in some schools, special filtering plants (RO plants) were also present. The same hand pumps are used for handwashing, along with soaps. Separate spots for hand washing and drinking water were rarely seen in most of the schools. While teachers in Ghatol did not raise any concerns about the water shortage, it was identified in some schools of Kushalgarh, especially during the summer months. In such cases, children were unable to wash hands properly.

Most schools had toilets for the children, including some schools in Ghatol and Kushalgarh where there are provisions for separate toilets for boys and girls. However, the condition of toilets in most schools was unsatisfactory<sup>29</sup>

Several teachers said that special programmes related to diarrhoea prevention and also hygiene promotion were organised in schools. Such programmes were meant to generate awareness among students and, in turn, the entire community.

*“We tell the students about good hygiene practices like handwashing, taking a bath every day, cutting nail. They then go and tell their family. Spreading messages through children are very effective.” [School Teacher, Ghatol]*

## **B3. Education: Governance Level**

### **B3.1 Services**

#### **B3.1.i Vacancy**

The strength of teachers varied from standard 1 to 8, only one school was till Class 10. Most of the schools till 5th standard were managed by a single teacher though there is provision for two sanctioned posts. In most of schools till class 8th standard, there were two teachers and two posts were vacant. The post of headmaster was also vacant in some schools. The most senior teacher was the acting principal.

#### **B3.1.ii Absenteeism**

During the interviews, it was found that at least one teacher from each school across all the nine study villages was absent on the day of the interview. In few villages in Ghatol as well as Kushalgarh, the PRI member also identified absenteeism as an important problem in the functioning of the school.

*“School opens every day, they also serve food every day, but all teachers are never present. Some one or the other are always absent. Some teachers who stay in Kushalgarh come only two or three days. The local teachers also come late. They do not devote enough time to teach.” [Ward Panch, Kushalgarh]*

<sup>29</sup>. The toilets were not visited by the Qual Team. Transect walk team should be able to describe the quality of the toilets, the availability of running water, taps inside the toilet

### **B 3.1.iii Teacher- Student Ratio**

Student to teacher ratio varied across schools and also across blocks. In Ghatol, in a school till standard 5, the ratio was 40:1, while it was 30:1 in the case of schools which run till 8th standard. The teacher student ratios in Kushalgarh are far higher. The ratio in Kakanwani school was 130:2. This was an exceptional case because of non-availability of any schools in the nearby areas. On average the student to teacher ratio in Kushalgarh was reported to be 70-80:1, higher than Ghatol due to lack of private schools.

*“There are no other schools in the three villages, so all students come here. It is really difficult to manage so many children. Initially I was the only teacher, but now a new teacher has also been appointed.”*  
[School Teacher, Kushalgarh]

### **B.3.1.iv Medium of instruction**

The teachers from all the schools shared that until the 3rd standard they spoke to the children and taught them in the mother tongue, Wagdi. The students were more comfortable with teachers speaking in Wagdi. From the 4th standard, teachers introduced some words of Hindi and gradually shift to using Hindi as the classroom language. No other language was introduced till 8th standard.

### **B 3.2 School /AWC Interaction (Co-location)**

Out of the total AWCs covered in the five study villages of Ghatol, only one was located in the school premises. In case of Kushalgarh, one AWC from each of two study villages was located in the school. The reasons for the remaining not being located in the schools were as follows:

- The village has two AWCs, only one would be relocated;
- The school was located far away (more than 500m) from the village, but the AWC is in the village;
- There were space constraints in the school.

The administrative decision of physically co-locating all the AWCs to school was not considered to be a feasible option by Project Education Officer, who was in charge of the relocation exercise in a section of Ghatol Block. According to the school teachers, additional work was imposed on the teachers including monitoring the supply of THR, distribution of THR and other administrative issues of AWC. Most of them reported visiting AWCs, but there was lack of clarity about how to make them effective. The teachers who visited the AWCs located in their school's premise or near the school said that they verbally informed the AWW and AS about improvements, but no follow up mechanism. These visits began eight months after the order was issued and most teachers reported that there were two visits to the AWC in a month.

### **B 3.3 Community interface**

All the teachers and PRI members were aware of the School Management Committee (SMC). The teachers informed researchers that SMC meetings are held on fixed days such as on a new moon day when farmers traditionally do not engage in agricultural work. Some teachers said that SMC meetings took place on a regular basis, PRI members in few villages of both blocks were aware about the meetings and discussions.

The other platform where teachers and parents interacted were the special meetings under the Alakh Programme. This is a special programme for the Banswara district. According to the guidelines, the school teachers arranged a meeting in the villages where they invited the staff of other departments and the PRI members. These meetings hosted discussions of the functioning of the school and also inform about other development programmes. However, the teachers said that these meetings were successful on a couple of occasions, with a subsequent dwindling of participation.



## C1. Water, Sanitation and Hygiene: Household Level

### C1.1 Water

#### C1.1.i Drinking Water

Hand pumps were the only source of drinking water in both the blocks. There was a difference in the number of hand pumps in each of these blocks and in the duration of availability. The water table in Ghatol is relatively superficial at 30 to 35 feet; while in Kushalgarh it is much deeper at 90 to 100 feet. Unlike Ghatol, where most of the hand pumps have water throughout the year, some sources dry up during May and June in Kushalgarh. The only measure for treatment of drinking water was using a cloth for filtering the water while filling; this practice was more common in Kushalgarh than in Ghatol, as reported by the FHWs. In some villages of Kushalgarh, a local reverse osmosis plant using solar panel is also available under a new scheme by the Public Health and Engineering department.

#### C1.1.ii Water for Irrigation and other purposes

The main source of surface water in Ghatol and Kushalgarh is canals. Canal water in Ghatol is available throughout the year, while in Kushalgarh it is available for five months starting from October. This water is primarily used for agriculture and also for household needs including water for livestock. Ponds are also available in both the blocks, but it dries up in the summer.

### C1.2 Sanitation: Toilets

#### C1.2.i Construction

The proportion of houses with functional household toilets was more in Ghatol than in Kushalgarh. It was reported by mothers and grandmothers and other key informants that communities in Ghatol were generally willing to construct household toilets as they considered it necessary. In Kushalgarh, the felt need for household toilets was relatively less and hence there was reluctance to construct household toilets; many families in Kushalgarh had not yet initiated construction.

Two factors significantly affected the decisions for toilet construction. Inadequate and delayed financial support for toilet construction (from the government, through the Panchayat) rendered poorer communities unable to afford the construction. Constraints in accessing water, primarily in Kushalgarh villages, was also another reason for lack of toilet construction.

#### C1.2.ii Use of toilets

In the few households with functional toilets, all members were reported to be using the toilets except few elder members who continue to defecate in the open. This was the trend in both the blocks. Common sites for open defecation were the fields near canals and small streams.

*“Toilets have been constructed in every households but not everyone is using it. Elder members prefer open defecation.” [AWW, Ghatol]*

*“Few families have constructed the toilets and very few members use it due to scarcity of water.”  
ANM, Kushalgarh]*

*“Government has constructed toilets in every household. Whatever facilities government has provided us, I have provided in this village. Half of the village use toilet. There is a delay in payment, but the Sarpanch has told me that it will be soon released.” [WP, Ghatol]*

*“People who have constructed the toilet have not got their due payments. I have been following up with the Sarpanch’s office regularly, but there is no response. Due to water crises and due to delay in payment from the panchayat others are not constructing toilets.” [WP, Kushalgarh]*

### **C1.2. iii Child Defecation**

No children across the nine study villages below the age of two years defecated in toilets. It was reported that the small children defecated on pieces of cloth which were then disposed in open fields near the house. The older children defecated in the open, near their homes, except some in Ghatol who were reported to use toilets.

*“Generally we make the children sit in the open places close to the home. If the child is too small to sit, he defecates in the cloth. We throw the faeces in the open fields.” [Mothers, Ghatol]*

### **C1.3 Hand washing**

Awareness on the importance of hand washing was high in all the study villages. Participants reported that hand washing after defecation was mostly done with soap and that a mixture of ash and detergent if soap was not available. Some of those who defecated in the open also used soil after defecation and then washed hands with soap and water when they returned home. Hand washing with water before cooking and eating was unanimously reported.

## **C2 Water, Sanitation and Hygiene: Village and Governance Level**

### **C2.1 Water**

Hand pumps were installed by the Panchayats on the basis of requests from the community. The repair and maintenance were also done by the Panchayats. Acute shortage of water in summer was reported by communities in Kushalgarh. Water from hand pumps was adequate throughout the year in Ghatol. No additional provision of drinking water was made by the Panchayat during summer. The new initiative by PHED (described above) was used by only those residing near the unit in one of the study villages.

Canal water was primarily used for irrigation throughout the year in Ghatol, but in Kushalgarh its use is limited to five months of the year. For the remaining period, privately owned bore-wells were used for irrigation.

### **C2.2 Sanitation**

The processes for construction of household toilets were same in both the blocks. The PRI member listed households without toilets and then based on the interest of the head of the family initiated the process of construction. Toilets were constructed as per the design and guidelines of the government, with individual households having very little choice. The payment for construction was released in a stepwise manner. However, delay in payment was a complaint in both the blocks. According to Panchayat representatives in Ghatol, this delay was temporary. Few PRI members in Kushalgarh were of the opinion that there was corruption in release of funds, though they were not aware of the reasons for delay. PRI members and other key informants from Kushalgarh also informed researchers that kerosene supply was suspended for those households who did not construct toilets.

## **D1 Cooking Fuels: Household Level**

### **D1.1 Firewood**

Firewood was the most common cooking fuel in both the blocks, as it was freely and easily available. In Ghatol, firewood was mostly collected from forests adjoining the villages in Ghatol. Dung cakes were also used by some families. Sources of firewood in Kushalgarh were agricultural remains used

as cooking fuels or from the trees in the village. Some villages located near a forest area also collect firewood from the forest.

### **D1.2 LPG Connection**

LPG Connection was available in few households. Many of the BPL families were unable to avail the Ujwala scheme (designed for BPL families) as they did not have enough money to purchase cooking gas. The Ujwala scheme is being gradually implemented. Even those households with gas connection usually used it to make tea and sometimes to cook vegetables. It was reported that communities still preferred to use firewood to LPG because of the initial cost as well as the cost of refilling, which was considered to be high.

*“Households who have received gas connection cook on gas oven but only tea and sometimes vegetables, for other things they still use firewood. Some of the households have not got and some are not willing to take because they do not have money.” [AWW, Ghatol]*

*“Around 20 percent households use gas stove. Here people prepare meals from the maize or makke ki roti, which takes much longer time to get prepared or cooked. Therefore, they prefer chulha over the gas stove.” [ANM, Kushalgarh]*

*“Most households in the village use firewood that they get from the adjoining jungle and also cow dung cakes gobar ke uple. This is free so they prefer it. Most people here do not have money in hand and gas connection requires cash.” [Teacher, Kushalgarh]*

*“Here mostly people use dried agricultural waste as cooking fuel. Earlier there used to be other sources like trees and bushes, but not anymore. All the land is converted for agriculture.” [WP, Kushalgarh]*

## **D2. Cooking Fuels: Village Level**

### **D2.1 LPG connection**

Most PRI members responded that scheme for gas connection (Ujjwala scheme) was not under their control. It was supplied by private LPG dealers and the interested households had to fill up a form and pay the initial deposit.

*“30 families have received gas under Ujwalla scheme. I got instruction that all BPL families under Pradhan Mantri Awas yojna have to take gas connection which I conveyed to them. But the connections were taken by the family members themselves.” [WP, Ghatol]*

*“I just know that those who want to have gas connection have to fill a form and deposit Rs 600 at the Gas agency. I do not have any role there.” [WP, Devdasath]*

# Chapter 6

## Discussion



About 45% of all child deaths are linked to undernutrition (Black et al 2013). The 2013 Lancet Nutrition Series reported that the cognitive and physical damage caused by undernutrition during the first 1,000 days between a woman's pregnancy and her child's second birthday is severe and often irreversible. This finding comes with profound consequences for a child's life and the future of community and society due to long-lasting, irreversible effects on the child's development, including mental development, health, school performance and later on, work productivity. Cumulatively, these factors impact the economic growth of the country (Niti Ayog 2017).

### Child feeding practices

The first 1,000 days of life (270 days in-utero and the first two years after birth) serve as the most critical window period for nutritional interventions. While the causes of under-nutrition are complex in nature, the two very important determining factors, in the age group of six months to two years, are sub-optimal feeding practices and exposure to infection. Optimal feeding practices during the first two years provide a window of opportunity for children's appropriate growth and development (WHO 2009). As per the WHO Technical Guidelines, IYCF comprises of two components, breastfeeding and complementary feeding. The component of breastfeeding has two phases, early initiation of breastfeeding and exclusive breastfeeding for the first six months. Complementary feeding entails introduction of age-appropriate semi-solid food along with breast milk after completion of six month. Breastfeeding should be continued for a minimum of two years. It is captured through several indicators in the national survey (Box 4). Deviation from the above mentioned recommended IYCF practices potentially lead to poor developmental outcomes in children.

#### Box 1 Indicators for IYCF

1. Breast Feeding
  - Children under age 3 years breastfed within 1 hour (in%)
  - Children under age 6 months exclusively breastfed (in%)
2. Complementary Feeding
  - Children age 6-8 months receiving solid or semi-solid food and breast milk
  - Breast feeding children age 6-23 months receiving an adequate diet
  - Non- breast feeding children age 6-23 months receiving an adequate diet
  - Total children age 6-23 months receiving an adequate diet

Practices such as failure to feed colostrum to children, delayed initiation of breastfeeding, feeding water to infants in the exclusive breastfeeding stage, supplementation with animal milk and inadequate quantity as well as poor diversity in complementary feeding is common in developing countries. This study found several faulty IYCF practices including like introduction of water in the first six months, partial breast feeding, consumption of convenience foods like biscuits from the fourth month, inadequate consumption of animal milk after six months, semi-solid and "adult" food introduced after one year, little or no intake of fruits and vegetables and non-vegetarian food and weaning after the first year, rooted in several factors.

Some of these IYCF practices are on account of traditional and cultural practices while the others are shaped by contemporary contextual factors. Certain models on explanation of IYCF practices and undernutrition are reported in the literature (described in considerable detail in Chapter 1) that helped us construct a broad conceptual model to undertake this study. Based on the findings of this study, the conceptual model has been further contextualized and factors specific to the villages and region have been identified. These factors can be understood across three levels: household level (specific to an individual family), village level (that operate in the village where the household is located) and governance level (that are linked to government and other service providers). The findings attempt to analyse these factors across blocks as well as specific to any villages.

**Initiation of breastfeeding:** Significant variation was reported in this indicator by block as well as migration status of the family, with higher proportion of Ghatol mothers (74%) and higher proportion with no migration (70%) reporting initiation of breast feeding within one hour of delivery as compared to their Kushalgarh (47%) and migrated (48%) counterparts, and supplements to the qualitative survey findings with actual numbers. Our survey found that around 60% of the children were initiated breastfeeding within one hour; this was much higher than the NFHS-4 data of about 40% for the whole district. This survey did not collect information about colostrum feeding. Around 6.5% of the children aged less than two years were provided pre-lacteal foods like water, honey or gutti any time during first six months. However this information was contradicted by information shared in the FGDs.

**Exclusive breast feeding:** On the lines of qualitative survey findings, among children currently aged 6 to 23 months, around 94% of the surveyed children were exclusively breastfed during first six months of their life. There was no significant variation in this indicator according to other socio-economic factors. This indicator was slightly higher in Kushalgarh (97%) as compared to Ghatol (92%). These levels are a lot higher than the NFHS-4 data of around 56% for the whole district.

On a related indicator of continued breastfeeding among children aged 20 to 23 months, our survey found 70% children were breast fed yesterday; there were variations in this indicator by block, literacy of the mother, SES, and sex of the child.

**Complementary feeding:** 42% of the children aged 6 to 8 months were fed complimentary foods like grains and/or legumes and/or milk and/or eggs and/or meat and/or vitamin-A rich fruits/vegetables and/or other fruits/vegetables during the past 24 hours. This indicator varied by almost all the socio-economic and geographic groups; however, the differences could not be tested for significance due to the small sample size of only 60 children in this age group.

**Number of foods:** We also measured a related indicator for children aged 6 to 23 months who received food from four or more groups out of the following seven food groups: grains, legumes, milk, eggs, meat, vitamin-A rich fruits/vegetables, other fruits/vegetables during the past 24 hours. Irrespective of socio-economic and demographic profile among the children aged 6 to 23 months: 19% received no food from any of these seven food groups; 33% received any one from the food group; 27% two food groups; 13.5% three food groups; 5.5% four food groups; 0.6% five; and 0.9% seven food groups. When this indicator was classified according to 0-3 and 4+ food groups, we noticed significant variations in this indicator according to literacy of the mother as well as head of the household, SES and sex of the child.

**Minimal meal frequency:** Out of 325 children in this age group: 85% were reported to be breast fed during the previous 24 hours. Of the breastfed children, only 12 (3.7%) received MMD while out of the non-breast fed children 8 (27%) received MMD, although for the total children this proportion was 6.2%. Our finding is much higher than the 0.8% who received adequate diet in the NFHS-4 findings in the whole district. As noticed in the qualitative survey negligible (1-2%) proportion of the surveyed children received iron rich foods like meat/fish/chicken yesterday.

**Age appropriate breast feeding:** This indicator was calculated separately for 0 to 5 month and 6 to 23 month old children. Irrespective of the socio-economic and geographic groups, around 60% of the children received age appropriate breastfeeding. This was significantly higher for children whose mother is literate and children from better SES households as compared to their respective group counterparts.

IYCF is generally understood to be shaped by household level factors alone. However, this study emphasizes that IYCF practices are shaped by other village and governance level factors that interact with the proximate household factors. These factors are often intertwined in a complex fashion making it difficult to discern as well as isolate. Household level factors are thus interconnected with the village and governance level factors.

## Maternal time use

There is growing evidence that interventions to address maternal time use can affect trade-off decisions within the household. An awareness of the amount of time spent on paid and unpaid activities will inform the development of a HEEE intervention that puts social equity at the heart of basic household services such as electricity and water that avert the need for manual collection of fuel and water for household use.

Our study found that in all villages, mothers of small children were engaged in multiple responsibilities including cooking, cleaning and taking care of livestock. They were also equally engaged in agriculture and some migrated (seasonal migration) with their husband to the adjoining districts. Handling so many tasks rendered it difficult for mothers to exclusively breastfeed their child for six months, introduce semi-solid food after completion of six months, cook separately for the child and devote time for feeding and playing. The time constraint was also reflected in the nature of food given to the child; mostly food that was cooked for adults. The number and quantity of feed given was also not appropriate for the age.

In the absence of time to devote to childcare, all mothers reported being supported by other family members, especially the paternal grandmother. Hence, grandmothers emerged as an important caregiver of the child. They were reported to play an important role in the context of feeding and childcare. Despite grandmothers' sincere efforts, there were some lacunae in the way they were taking care of the child. It was reported that the grandmothers often gave convenience food (most commonly, biscuits) to the child as a pacifier. This kind of food depleted the child's appetite, hence making the child reluctant to eat the regular household food.

We did not find evidence of gender discrimination in favour of sons; however, there was not significant variation and this was explained in an adjusted analysis accounting for maternal and household characteristics. A preference to allocate more time to caring for male children is evident in the literature; almost an hour more was spent on childcare when there are two boys than when there are two girls (Carvalho et al. 2013). Furthermore, boys received significantly more childcare time and are likely to be breastfed longer than girls in India. It is possible that we may have been limited by a small sample of 85 mothers, or the SES and other demographic characteristics explain this variance. Such a finding would have implications for the cognitive development of boys compared to girls in this setting.

We observed a pattern of less time allocated to caregiving as an infant increases in age. This is a common pattern reflecting the demands of a newborn and breastfeeding, FGDs and KII's highlight that mothers are likely to stop breastfeeding in order to work in the field, but infants would often consume convenience foods whilst in secondary care. The literature suggests that being the mother of a first child could be associated with more time allocated to care for that child. We did check for how time allocated to caring for children differs with number of children or the age of child over 6-23



months and found no significant difference between households with only one child under five years, compared to more children in the household.

The results raised issues of measurement of caregiving, and the need for a careful definition. Child care time involves multiple providers, whom we did not speak with. The literature considers lack of time for caregiving to mean less time for preparing food and time to feed a child. According to our conceptual framework, access to forest products and the female role in agriculture and household all influence the time mothers can allocate to caregiving, including feeding a child inside and outside the home. The FGD and KIs in this study established that infants were likely to be left at home with secondary caregivers whilst mothers went out to tend to land or livestock, indicating that future research would ideally capture the involvement of grandmothers in the caregiving of infants. We know from the literature that caregivers may combine child care with other activities. Thus we adopted a methodology that allowed for two activities to occur at any given time. Our results emphasised the importance of exploring 'divided' time as a way of measuring caregiving primary and secondary.

We found evidence to support the literature that mothers do not compromise on childcare, even in rural areas of chronic poverty and irrespective of education or income. A time use study in urban Bangladesh found that neither the poorest nor the richest were the most time constrained, but the lower middle class. The authors also reported that women were more likely to collect fuel and water and spend no more than one hour a day on direct child care activities. In line with survey's from Philippines, Bangladesh, Kenya, and Botswana (Brown and Haddad (1995)); we also found that women spent two hours or less in child care per day and that this did not vary significantly by income or education level.

## Knowledge regarding IYCF

It was reported that mothers were mostly responsible for deciding what to feed the child as well as the act of feeding the child. At the same time, it was observed that the mothers did not have complete knowledge about the feeding practices, for both exclusive breastfeeding and complementary feeding. If they perceived that the amount of mother's milk is sufficient for the child, they would not introduce semi-solid food until the baby was one year of age. Mothers were also not well informed about the protective food that children need. While the option of milk was not present in all households, even those who had milk (available at the household level) gave a little bit of it in the form of tea to the children. This is true for lack of consumption of non-vegetarian food like eggs. Despite the acceptability of non-vegetarian food in the predominantly tribal society of the study blocks and easy availability, people are dissuaded to eat such food or feed it to their child due to the current religious followings that are based on following certain gurus.

The grandmothers also had primary responsibility of caring and feeding but did not have enough information about complementary feeding. It was reported by both mothers and grandmothers that they give biscuits to the child. They consider it the 'cheap and best' option since children eat them readily and they prove convenient for the caregiver. It was also suggested by health functionaries that biscuits be fed during episodes of illness. The consumption of convenience food is not only related to lack of knowledge but is also influenced by the time constraints faced by the mother.

## Service delivery and access (ICDS) issues

Proactive steps are being taken by the government to address the information gaps about IYCF. Two of the most important information sources for generating awareness in villages are the AWW and the AS. The ANM also plays a crucial role. Together, these three comprise the FHWs. The overwhelming evidence from all the villages is the considerably poor quality of knowledge in these FHWs, especially AWW and AS. They were not aware of indicators of malnutrition and appropriate complementary

foods. All of them were well informed about exclusive breastfeeding. Beside the knowledge gaps, skill of counselling was also very poor. This was evident from the fact that although they reported telling the mothers and grandmothers about exclusive breastfeeding there were instances of introducing animal milk of other semi-solid or solid eatables in the child's diet. There was also a concern about their attitude to reach the unreached sections of the village. In many villages, several key informants reported that the AWW cater to the needs of the community staying close to the AWC. In addition to such gaps in knowledge, skill and attitude their work is were seldom monitored and supported by their respective supervisory cadres. All these factors rendered them ineffective.

There were differences in the quality of the FHWs' work in the villages of Ghatol and Kushalgarh. Given the proximity of Ghatol to Banswara, the level of support that the health workers received in Ghatol was somewhat more than Kushalgarh. This was further complemented by the work of NGOs and civil society in Ghatol.

The community's interest on accessing information was also reported to be weak. While some of these could be attributed to the role of the workers, there were also shortcoming in the manner in which local communities availed and utilized these services. Mothers shared that that they did meet these FHWs frequently, at least once a week, for collecting the THR or once a month for vaccination. But most of the mothers said that they have never asked the FHWs about the correct complementary feeding practices. Some also mentioned that they did not feed THR to the small children as they did not know how to prepare it. According to some FHWs, mothers were told about preparation of complementary foods, but they did not adhere to this advice on account of ignorance. This resonates a feeling of lack of trust among the community and the FHWs.

## Access to markets

The above household level factors may be considered to be the core proximate social determinants affecting IYCF, but village level factors that have a bearing too. Cropping pattern and livestock are the two village level factors that influence inadequate consumption of protective foods. Due to cultivation of cereals in this area, cereal based complementary foods like roti and dalia are more common. Since production of pulses and vegetables are less, these items are rarely used in day to day cooking and in limited quantity. Availability of milk producing animals in the household ensures that the child would get milk, but that is not as common, and sale of milk was a factor that limited availability for household consumption.

Access to the markets is a factor dialectically associated with the inadequate consumption of protective food as well as high consumption of convenience foods. Notwithstanding, the advantage of markets in improving the consumption of vegetables and fruits to some extent its access from the villages is an important determinant the extent to which it influences the dietary choice, especially for infant and young children. This is explicit in the difference between Ghatol and Kushalgarh where the average distance from the market is 10 kms and 20 kms respectively. While mothers reported that fruits and vegetables were given to the children, the fact is that it was seldom given in Kushalgarh. Most of the families with milking animals in Kushalgarh responded that the milk was given to the children and also sometimes sold to other houses in the village; but in Ghatol the milk or milk products were mostly sold at the market. This same village level factor was also responsible for access to convenience food. Growing religious sentiments against non-vegetarian food has also reduced the consumption of protective food.

## Migration and 'left behind' populations

Migration emerged as an important determinant that influenced some household level factors, directly by increasing women's participation in agriculture and reducing the childcare time of mothers. Grandparents thus played an important role in child rearing. Another unintended consequence was



the reducing livestock at households, leading to a decrease in the consumption of milk and milk products.

## Role of the schools and panchayats

School teachers were found to be an important source of information about the village. All the teachers interviewed provided rich insights about household, village as well as governance factors. They were also found to be well connected to local communities and that community also had respect for them. It was reported by all mothers and grandmothers as well as other key informants that the schools were functioning regularly and efficiently with teachers attending school every day. Mid-day meals were provided regularly and interactions with community were also held. Thus, engaging with the school teachers in further analysis of the problems and also in co-designing a solution holds merit. On account of the current policy of co-location of AWC at school premises the interaction of the school teachers with the Anganwadi workers has improved. Many teachers reported taking personal interest in visiting the AWC and monitoring the functioning; however due to their own busy schedule and excessive workload (due to staff shortage) they were not always proactive. There was also a mention of provision of Anganwadi Level Monitoring Committee (ALMC) of which the Principal is a member. However, such a committee was not discernible in any of the two study blocks.

One demerit is that, barring two teachers from Khargachiya village of Ghatol and Kakanwani village of Kushalgarh, most of the teachers are not from the same community and reside outside the village in the nearby block headquarters. This gap between teachers and the community can be bridged by the ward panch, the elected representative of the Panchayat in local self-government. The elected members in these nine villages are men, except the one in Bansri, Kushalgarh, and represent an important conduit with the community not only because they are in elected leader but because they are well connected with the government agencies. Notwithstanding their position and status vis-à-vis the community, it was observed that they were more engaged in infrastructural issues like construction of toilets and houses and some were involved in school management committees. All the ward panches were oblivious of the existence of Village Health Sanitation and Nutrition Committees (VHSNC), leave alone their role and active participation in the health issues in the village.

## Infection prevention: of water and sanitation issues

IYCF interacts with childhood infection which culminates in the nutritional status. As was unanimously reported by caregivers, when the children get illnesses like diarrhoea, fever or cough and cold they stop eating properly. This affected their nutritional status and made them more susceptible to illnesses. Thus, the study also explored some routes for prevention of childhood infection, sanitary toilets, potable water, immunization and hand washing. While the programme on toilet construction is being implemented in both the blocks, the uptake is more in Ghatol than in Kushalgarh. This decision is linked both to the economic condition and availability of water. The practice of children defecating in the open and disposing children's faeces in the open fields is similar in both the blocks. While the drinking water sources across all nine study villages are same, the ground water level in Ghatol is relatively more superficial and likely to be ore contaminated. Kushalgarh villages generally experienced greater scarcity during the summer months as the water table went further down. The canal irrigation in Ghatol although is a lifeline for agricultural productivity, it is also a potential threat for malaria in that areas. The immunization programme in both the blocks was reported to be effective by all the stakeholders.

# Annexure 1: Checklist for Community Profiling

Block : \_\_\_\_\_

Village : \_\_\_\_\_

Date of Exercise : \_\_\_\_\_

S.n..	Area of Observation	Findings	
1	Habitation	1.	
2.	Anganwadi		
3	School		
4	Water source		
5	Shops		
6	Solar panel		
7	Electricity		
8	Toilets		
9	Bus stand		

## Annexure 2

Broad Narrative Group discussion

1. Who in the family takes care of the young children?
  - a. Probes: participation of fathers / males, in-laws
2. Quality of interaction with ASHA workers
  - a. Probes: usefulness of advice regarding feeding and care of young children (6-24months)
3. Quality of interaction with Anganwadi workers
  - a. Probes: usefulness of advice regarding feeding and care of young children (6-24months)
4. Please share your experiences with the school in this village
  - a. Probes: quality of teaching, infrastructure (water sanitation classrooms playgrounds midday meal), parent-teacher interactions
5. Please describe the patterns of migration in this village
  - a. Probes: economic activities during lean seasons, number of migration cycles in a year, do women and children migrate
6. Please tell us what crops are grown locally throughout the year
  - a. Probes: proportion of households who own land, average landholding, which crops are sold and which are consumed
7. Role of women in agriculture
  - a. Probes: what are female roles, what are male roles, who cultivates fields in periods of male migration?

8. What methods of irrigation are used in this village?
  - a. Probes: Ease of access to water for irrigation, irrigation techniques used (drip irrigation), use of canal, distance of field from canal
9. What cooking fuels do you use in the household
  - a. Probes; LPG, electricity, lighting, kerosene;
  - b. Probes; are these available from PDS or purchased outside of PDS

## Annexure 3

### Seasonal Calendar

#### Instructions to interviewer

Respondents from the FGD will be asked to develop a participatory seasonal calendar highlighting variation in incomes, climate and consumption. This will be used to discuss impact on environmental systems and infrastructure provision. Facilitator will discuss and fill in table using answers to the below questions from participants:

- Fill in months of flooding. Why?
- Fill in months of high and low income. Why?
- Fill in months of high and low expense. Why?
- Fill in months of water shortage. Why?
- Fill in months of health problems. Why?
- Fill in school holiday period. Why?
- Fill in school fee payment period. Why and how much is school fee?
- Fill in busy times for markets. Why?
- Fill in high electricity consumption times. Why?
- Months of key crop yields. Which crops and which months.

Month	Flood	High Income	Low Income	Water shortage	Health problem	School Holiday	Pay School fees	Market Busy	Energy Use	Crop yield
January										
February										
March										
April										
May										
June										
July										
August										
September										
October										
November										
December										

## Annexure 4

### Household Survey Questionnaire

Confidential, information to be used for research purposes only

#### HEEE-MRC Study

#### HOUSEHOLD QUESTIONNAIRE

Complete Module 1 -4 by speaking to the head of the household irrespective of the age and sex

**Complete Module 5 & 6 by speaking to all the mothers with live child aged less than two years of age**

Note: If there is more than one mother with less than 2 years age child, fill module 5&6 for each one of such mothers

**Note for Data Collector:** If the house is locked for more than a month, please do **NOT** interview that household. **STOP AND CONFIRM THERE IS NO MEMBER STAYING IN THE HOUSEHOLD.**

Form No.

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#### IDENTIFICATION

NAME	CODE	
<b>DISTRICT:</b> _____	<input type="checkbox"/>	<b>Interview start time</b>
<b>BLOCK:</b> _____	<input type="checkbox"/> <input type="checkbox"/>	____ ____ :
<b>VILLAGE :</b> _____	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	____ ____  <b>Hour Minute</b>
<b>IS THIS A GRAM PANCHAYAT:</b> 1.YES 2.NO	<input type="checkbox"/>	<b>Interview end time</b>
<b>IDENTIFIER NUMBER</b>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	____ ____ ____ ____ :  ____ ____  <b>Hour Minute</b>

INTERVIEWER'S VISITS AND STATUS			
Visit 1	Visit 2	Visit 3	Final Visit
Date			<b>Date</b>  __ _ _ -  __ _ _ -  __ _ _ -
Interviewer's Name			Interviewer's code
Result code*			Result code
Next Visit	Date: Time:	Date: Time:	<b>Total # of visits</b>  __

**\*RESULT CODES:**

01 = Interview completed    02 = Respondent declined interview    03 = Time and date set for later  
 04 = Respondent not at home    07 = Other, specify: \_\_\_\_\_

Supervision	Name	Code	Date
Checked by SCI supervisor		__ _ _	__ _ _ -  __ _ _ -  __ _ _ -
Reviewed by QC Team		__ _ _	__ _ _ -  __ _ _ -  __ _ _ -
Data Entered by		__ _ _	__ _ _ -  __ _ _ -  __ _ _ -

## Information For Head of Household And Consent Form

**Instructions to Interviewers:** Please read and explain the consent to the respondent and answer all questions the respondent may have

**Study title:** Integrated Health, Education and Environmental (HEE) intervention to optimise infant feeding practices through schools and Anganwadi networks in India

**Approvals:** This study has been approved by UCL Research Ethics Committee: REF NO: 4032/002 and India-IRB (REF NO: 10025/IRB/D/17-18)

### Who is conducting the research?

The study is being sponsored by University College London (UCL) and paid for by the Medical Research Council. Prof Marie-Carine Lall and Dr Lorna Benton from University College London in England and Prof Rajib Dasgupta from Jawaharlal Nehru University in Delhi are conducting this research with colleagues from Save the Children, India. We are visiting 9 villages in the Banswara district of Rajasthan to learn more about how education and engineering can help to improve the nutrition and the health of young children in India.

### Consent

Namaste. My name is \_\_\_\_\_. I am working with Save the Children, Rajasthan. We are conducting a survey on influence of health, education, engineering and environment on feeding practices in children under two years of age.

The information on family welfare and feeding practices that we collect from households and individuals will help the government to plan health services. Your household was selected for the survey. I would like to ask you some questions about your household. The questions usually take about 35-45 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. Your participation in the survey is voluntary. If I ask you any question you don't want to answer, just let me know and I will go

on to the next question or you can stop the interview at any time.

If you have any questions about this survey you may ask me

.  
ANSWER ANY QUESTIONS AND ADDRESS RESPONDENT'S CONCERNS.

If you have any further questions about this survey you may contact the persons listed below:

Name: Dr Hanimi Reddy Modugu (Principal investigator)

Mobile: 99118 22445

Email: hanimi.modugu@savethechildren.in

Name: Ms Meena Pahwa (IRB coordinator, Sigma)

Phone: 011-4619 5555

Email: irb.sigma@sigma-india.in

Do you agree to participate in this survey?

May we begin the interview?:

Yes → Start interview

No → End interview

\_\_\_\_\_ (Signature) \_\_\_\_\_ (Date)

Do you need a copy of the consent form? If you want, we can provide you a copy of this form.

**Note:** *In case the respondent is not able to write, please take written consent from the other family member/ neighbors or someone not related to the study. Someone can understand the purpose of the research and the consent form can sign on the consent form.*

Person obtaining consent

RELATION TO INTERVIEWEE	SIGNATURE

In case the respondent is not able to write, please take written consent from the other family member/neighbors or someone not related to the study. Someone can understand the purpose of the research and the consent form can sign on the consent form.





\*: Generally speaking, persons who are present in the household during the last one month or who are known to be usual residents of the household and have stayed there for part of the past one month or who are not present at the time of visit of the enumerator but are expected to return in a month are treated as 'usual members'. For the purpose of enumeration the following persons are treated as usual members in a household.

#: Temporary migration to a place that is not intended to be permanent for a specified/limited time period, usually undertaken for employment.

*For each child under 2 years of age, write his/her name, line number and the name and line number of his/her primary caregiver (usually the mother) in the information panel of the Infant and Young Child Feeding module.*

TOTAL CHILDREN UNDER 2 YEARS OF AGE (from Q9 above)

|\_\_|\_\_|

## Module 1: Modified Kuppuswamy's Socio-economic Scale, 2016\*

Q. #	Question	Codes	Go to Q
101	Education of the head of the household	Above Graduation .....7	
		Graduation.....6	
		Intermediate or diploma .....5	
		High school certificate .....4	
		Middle school certificate .....3	
		Primary school certificate .....2	
		Illiterate.....1	
102	Occupation of the Head of household	Legislators, Senior Officials & Managers.....10	
		Professionals.....9	
		Technicians and Associate.....8	
		Clerks.....7	
		Skilled Workers and Shop & Market Sales worker.....6	
		Skilled Agricultural & Fishery Workers.....5	
		Craft & Related Trade Workers.....4	
		Plant & Machine Operators and Assemblers..3	
		Unskilled/Agriculture labourer.....2	
		Unemployed.....1	
103	Monthly Family Income in Rs.	≥ 40,430.....12	
		20,210 – 40,429.....10	
		15,160 – 20,209.....6	
		10,110 – 15,159.....4	
		6,060 – 10,109.....3	
		2,021 – 6,059.....2	
		≤ 20,20.....1	
		DON'T ASK: CALCULATE YOUR SELF	Upper (I)... .....Score: 26-29.....1
	Upper Middle (II)....Score: 16-25.....2		
Based on above codes prepare total score	Lower Middle (III).....Score: 11 – 15.....3		
	Upper Lower (IV).....Score: 5 -10.....4		
	Lower (V).....Score < 5.....5		

\*: Mahesh R. Khairnar<sup>1</sup> & Umesh Wadgave<sup>1</sup> & Pranali V. Shim (2017). Kuppuswamy's Socio-Economic Status Scale:A Revision

of Occupation and Income Criteria for 2016. Indian J Pediatr (January 2017) 84(1):3–6.

## Module 2

### Literacy profile of household members

COPY FROM MODULE 1		IF AGE 5 OR OLDER							IF AGE IS 5 - 18				
L	Name (Start with head of the household)	Sex	Age in completed years	Is (NAME) Literate or non – literate <sup>1</sup>	Has (NAME) ever attended school?	What is the highest standard (NAME) has completed?	Type of Education (Vocational / General/ Professional) <sup>2</sup>	Has (NAME) dropped out of school or college?	At what standard did he/she dropped out?	(DON'T ASK) Based on 5-10 column information – Categorize education level <sup>3</sup>	Type of school/college <sup>4</sup>	Is school/college in village or outside village <sup>5</sup> ?	Distance of the school/college from your house?
			4	5	6	7	8	9	10	11	12	13	14
1													
01		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
02		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
03		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
04		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
05		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
06		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	
07		M F		Y N	Y N		V G P	Y N		a b c d e f g	a b	b a	

COPY FROM MODULE 1				IF AGE 5 OR OLDER						IF AGE IS 5 - 18			
L No	Name (Start with head of the household)	Sex	Age in completed years	Is (NAME) Literate or non-literate <sup>1</sup>	Has (NAME) ever attended school?	What is the highest standard (NAME) has completed?	Type of Education (Vocational/ General/ Professional) <sup>2</sup>	Has (NAME) dropped out of school or college?	At what standard did he/she dropped out?	(DON'T ASK) Based on 5-10 column information – Categorize education level <sup>3</sup>	Type of school/college <sup>4</sup> ?	Is school/college in village or outside village <sup>5</sup> ?	Distance of the school/college from your house?
08		M F		Y N ↓	Y N ↓		V G P	Y N ↓		a b c d d e f g	a b	b a ↓	
09		M F		Y N ↓	Y N ↓		V G P	Y N ↓		a b c d d e f g	a b	b a ↓	
10		M F		Y N ↓	Y N ↓		V G P	Y N ↓		a b c d d e f g	a b	b a ↓	

1 Proxy for literacy: can you read a newspaper and/or can you do receipts or bills (hisab) – record as literate, otherwise non literate.

2 Vocational: occupation or skill based education (ITI, Polytechnique, .) ; General: degree/PG in social sciences; Professional: Engineering, medicine, law, management .)

3 a. Primary School; b. Middle School; c. Secondary; d. Higher Secondary; e. Higher Education; f. Technical Education; g. Professional Education

4 a. Government; b. Private

5 a. Within village b. Outside village

Q. #	Question	Codes	Go to Q
	<b>Check columns 9 and 10 of above table and, if any one or more members of the family dropped out, ask the following information</b>		
201	What do you think are the reasons for stopping studies or dropping out of the school/ college by members of the house?	R1: _____ R2: _____ R3: _____	
202	What do you think is the main reason for stopping studies	Main Reason: _____	
	<b>Check columns 12-14 and, if any one or more members of the family are attending school/college, ask the following information from the PRIMARY CARE GIVER of the school going child:</b>		
203	Who in the family looks into education, homework and communicate with teachers of the children attending school?	Write relationship of primary care giver to school going child: _____ Child's Mother ..... 1 Child's Father ..... 2 Child's Grand Parents ..... 3 Brother/sister ..... 4 Other family members/relatives ..... 5 No one looks into education ..... 8	
204	Do elder children support family in household employment or agriculture?	Yes.....1 No.....2	
205	Do elder children take care of smaller siblings?	Yes.....1 No..... 2	
206	How often do parents and other close relatives like grand parents/elder siblings of school going child visit school/ college and keep relationship with teacher(s)?	Once in a week.....1 Once in a month..... 2 Rarely..... 3 Never..... 4	
207	Does primary care giver supervise child's homework?	Yes.....1 No.....2	
208	Does parents and other close relatives like grand parents/ elder siblings of school going child attend school on parent teacher day?	Yes.....1 No.....2	

Q. #	Question	Codes	Go to Q
209	What language is spoken by teachers while communicating with parents  WRITE LANGUAGE: _____	Hindi ..... 1 Wagdi ..... 2 Other ..... 9	
210	Do parents teacher's meeting happen in the school/ college attended by your child?	Yes ..... 1 No ..... 2 Not aware of such meetings ..... 3	->212 ->212
211	If meetings happen, who from your family attends such meetings?	Write relationship of primary care giver to school going child: _____ Child's Mother ..... 1 Child's Father ..... 2 Child's Grand Parents ..... 3 Brother/sister ..... 4 Other family members/relatives ..... 5 No one looks into education ..... 8	
212	Does the parent or caregiver of child regularly enquires about the education/performance of child?	Yes ..... 1 No ..... 2 Does not enquire ..... 3	

## Module 3

### Other socio-demographic characteristics of family

301	What is your Religion?	Hindu ..... 1 Muslim ..... 2 Christan ..... 3 Jain ..... 4 Buddhist ..... 5 Sikh ..... 6 No Religion ..... 7 Other (specify) ..... 98	
-----	------------------------	--	--

Q. #	Question	Codes	Go to Q
302	What is your caste? _____ <b>RECORD AS STATED BY RESPONDENT</b>	Scheduled Tribe ..... 1 Scheduled Caste ..... 2 OBC ..... 3 General ..... 4 Other (Specify) ..... 98	
303	If Scheduled Tribe, what is your tribal status?	Name of tribe: _____	
304	What language is used for communication in the house? _____ <b>RECORD AS STATED BY RESPONDENT</b>	Hindi ..... 1 Wagdi ..... 2 Other (Specify) ..... 98	
305	How much total land do members of this household own?	Bigas:  __ __  __ .!__!	
306	How much of total land is agricultural land (irrigated and non-irrigated)? _____  (IF aNOT IN ACRES, SPECIFY SIZE AND UNIT)	Bigas  __ __  __ .!__!	
307	Out of the Total agriculture land how much is irrigated? _____  (IF NOT IN ACRES, SPECIFY SIZE AND UNIT)	Bigas  __ __  __ .!__!	
308	Does your household own any of the following animals?	Cows, bulls, or buffaloes .....Y Horses, donkeys, or mules .....Y Goats .....Y Sheep .....Y Chickens or ducks .....Y Other (specify) .....Y	N N N N N N N If all are 'NO' skip to 312a

Q. #	Question	Codes	Go to Q
309	Does these animals stay in the same dwelling unit or kept in a separate place?	Under same roof ..... 1 Under Separate roof ..... 2	
310	What is done with the produce from animals like milk, butter, curd ?	Only consumed in house ..... 1 Only sold outside house ..... 2 Both consumed in house and sold outside .... 3	→312 →312
311	If both, what proportion or percent of the milk/butter is sold outside house?	PERCENT  ___ ___  ___	
312	Check for goats/sheep/chickens/ducks ...  What is done with above animals nurtured in the house?	Only consumed in house ..... 1 Only sold outside house ..... 2 Both consumed in house and sold outside .... 3	
312a	When members of your household get sick with simple cold/caugh or fever, where do they generally First go for treatment?  Write Place: _____	Government: Medical college ..... 1 District Hospital ..... 2 CHC/SDH ..... 3 PHC ..... 4 HSC/ANM ..... 5 ASHA ..... 6  <b>Other than Government:</b> Private clinic/hospital/Dispensary ..... 7 Private AYUSH clinic/doctor ..... 8 Village RMP/Quack ..... 9 Other (Specify) ..... 98	Q314
313	Why don't members of your household generally go to a government facility when they are sick?  Any other reason?  RECORD ALL MENTIONED.	No nearby facility/long distance ..... A Lack of proper transport ..... B Facility opening times not convenient ..... C Health personnel often absent ..... D Waiting time too long ..... E Poor quality of care ..... F Other (specify) ..... Y	



Q. #	Question	Codes	Go to Q
314	When 0-3 year children get sick due to Pneumonia/ Diarrhoea, where do you generally go First for treatment?  Write Place:_____	Government: Medical college ..... 1 District Hospital ..... 2 CHC/SDH ..... 3 PHC ..... 4 HSC/ANM ..... 5 Other than Government: Private clinic/hospital/Dispensary ..... 6 Private AYUSH clinic/doctor ..... 7 Village RMP/Quack ..... 8 Other (Specify) .....98	
315	During the past one month did any community health worker (CHW) visited your house to advice on child play / development?	Yes .....1 No ..... 2	→317
316	Who visited?	ASHA ..... 1 ANM ..... 2 AWW ..... 3 Other (specify) ..... 9	
317	Does any usual member of this household have a bank account or a post office account?	Yes ..... 1 No ..... 2	
318	Is any usual member of this household covered by a health insurance?	Yes ..... 1 No..... 2	→320
319	What type of health scheme or health insurance?  MULTIPLE RESPONSES	Type of Insurance:_____ Type of Insurance:_____	
320	Does your family has a Ration card?	Yes ..... 1 No ..... 2	→323
320a	ASK FAMILY TO SHARE THE CRAD  Note down the color/category of the card?	Color/Category:_____	

Q. #	Question	Codes	Go to Q
320b	ASK FAMILY TO SHARE THE CRAD  Note down how many members of the family are included in the Ration card?	Members in card: _____	
320c	Does your household get any ration/food using that Ration card from Public Distribution System (PDS)?	Yes ..... 1 No ..... 2	→323
321	How frequently do you get ration?	Monthly ..... 1 Quarterly ..... 2 Irregularly ..... 3 Only at the time of festivals ..... 4 Other (specify) ..... 8	
322	What type of food/ ration do you get from PDS?	Type of food                      Quantity  1: _____                      _____  2: _____                      _____  3: _____                      _____  4: _____                      _____	
323	Did any member of this household worked under MNREGA?	Yes ..... 1 No ..... 2	→326
324	If yes, how many members?	How many..... <input style="width: 50px; height: 20px; border: 1px solid black;" type="text"/>	
325	Total days of employment got by all the members of the house in last one year?	Days..... <input style="width: 50px; height: 20px; border: 1px solid black;" type="text"/>	

Q. #	Question	Codes	Go to Q																		
326	Does this household has a BPL card?	Yes ..... 1 No..... 2																			
327	Do you cultivate a 'kitchen garden' in your house?	Yes ..... 1 No ..... 2	→331																		
329	If yes, where do you get the water to cultivate this garden from?	Within the house, waste water ..... 1 Within the house, fresh water given ..... 2 From water source outside home ..... 3 Only rain water ..... 4 Other (specify) ..... 9																			
330	How do you use the vegetables/ fruits grown in your kitchen garden?	Only for household consumption ..... 1 Only for selling in market ..... 2 Both of above ..... 3																			
331	Does any member(s) of your household migrated in last one year?	Yes ..... 1 No ..... 2	→334																		
332	Number of times migrated?	Times..... <input type="text" value="1"/>																			
333	Migrated with...	Only head of the household ..... 1 With mother ..... 2 Without mother ..... 3 With children ..... 4 Without children ..... 5 Other (specify) ..... 9																			
334	Does your household have.....:	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>A pressure cooker?</td> <td>1</td> <td>2</td> </tr> <tr> <td>A table?</td> <td>1</td> <td>2</td> </tr> <tr> <td>A chair?</td> <td>1</td> <td>2</td> </tr> <tr> <td>Windows with glass?</td> <td>1</td> <td>2</td> </tr> <tr> <td>A mattress?</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	A pressure cooker?	1	2	A table?	1	2	A chair?	1	2	Windows with glass?	1	2	A mattress?	1	2	
	YES	NO																			
A pressure cooker?	1	2																			
A table?	1	2																			
A chair?	1	2																			
Windows with glass?	1	2																			
A mattress?	1	2																			

## Module 4

### Engineering and Environment

Q. #	Question	Codes	Go to Q
<b>WATER</b>			
401	What is the main source of drinking water for members of your household?	Piped water (Dwelling/Yard/Plot) .....1 Piped water (Public Tab) .....2 Hand Pump into Dwelling/Yard/Plot .....3 Public Hand Pump/Tube well/Borehole .....4 Covered Dug Well .....5 Uncovered Dug Well .....6 Rainwater .....7 Surface water (river/dam/lake/pond/stream) .....8 Other (Specify) .....98	
402	Where is the above water source located?	In own dwelling ..... 1 Elsewhere .....2  If Elsewhere, how long does it take to reach water source in Minutes ... ..  __ __  __	
403	If there's a piped connection/hand pump within house, the amount of time it takes to fill a standard bucket of 20 liters	Minutes .....  __ __	
404	Is water from piped connection or tube well within house, is water available from the source throught the year?	Yes ..... 1 No ..... 2	→406
404a	If No, for how many months water is not available in a year?	Months .....  __ __	
405	Who usually goes to fh water for bathing and cleaning utensils in your household?	Adult woman ≥15 years ..... 1 Adult man .≥ 15 years ..... 2 Female child Under age 15 years ..... 3 Male child under age 15 years ..... 4	

Q. #	Question	Codes	Go to Q
406	How much time does it take to fh water for bathing and cleaning utensils for the household in a day?	Minutes ..... ___ ___  ___	
407	How many times in a day do you fh water for bathing and cleaning utinicels?	Timess ..... ___ ___	
408	Where do you generally store drinking water?	Pots ..... 1 Cement blocks ..... 2 Plastic buckets ..... 3 Other (specify) ..... 9	
409	How much water do you use for drinking in summer?	Range:_____	
410	How much water do you use for cooking, washing, bathing in terms of standard buckets of 20 liters?	Buckets:_____	
411	How much do you spend on total water use in house in a year?	Rs ..... ___ ___  ___	
412	Does this household do anything to the water to make it safer to drink?	Yes ..... 1 No ..... 2 Don't know ..... 8	→414 →414
413	What does this household usually do to make the water safer to drink?  Anything else?  RECORD ALL MENTIONED.	Boil .....A Use alum ..... B Add bleach/chlorine tablets ..... C Strain through a cloth ..... D Use water filter (ceramic/ Sand/composite/.) ..... E Use electronic purifier ..... F Record all mentioned. Let it stand and settle ..... G Other (specify) ..... X Don't know ..... Z	

Q. #	Question	Codes	Go to Q
414	What do you do with water from cooking, bathing, washing?	Throw in yard ..... 1 Reuse for growing vegetables ..... 2 Leave it to dry by it self ..... 3 Throw in gutter ..... 4 Other(specify) ..... 9	
415	Where do households wash their hand?	Specify: _____ No specific place ..... 8	
416	OBSERVE ONLY Observe Preesence of water at the place of hand washing	Water is available ..... 1 Water is not available ..... 2	
417	OBSERVE ONLY Observe Preesence of Soap, ash, detergent	Soap or Detergent ..... 1 Mud or Ash or Sand ..... 2 None ..... 3	
<b>SANITATION</b>			
418	Do you have toilet in house or yard?	Yes, in use ..... 1 Yes, not in use ..... 2 No ..... 3	→423
419	What kind of toilet facility do member of your household usually use?	<b>Flush or pour flush toilet</b> Flush to piped sewer System ..... 11 Flush to septic tank ..... 12 Flush to pit latrine ..... 13 Flush to somewhere else ..... 14 Flush, don't know where ..... 15 <b>Pit latrine</b> Ventilated improved Pit (vip)/biogas latrine ..... 21 Pit latrine with slab ..... 22 Pit latrine without slab/ Open pit ..... 23 Twin pit/composting toilet ..... 31 Dry toilet ..... 41 Uses open space Or field ..... 51 Other (specify) ..... 98	

Q. #	Question	Codes	Go to Q
420	Do you have light inside the toilet for night time use?	Yes ..... 1 No ..... 2	
421	Do you share this toilet facility with other households?	Yes ..... 1 No ..... 2	→424
422	How many households use this toilet facility?	No. Of households If less than ten <input type="text" value="1"/> Ten or more households ..... 95 Don't know ..... 98	
423	If no Toilet in house, then what facility do you use?	Public/communal toilet ..... 1 Open defecation in own yard ..... 2 Open defecation in common field ..... 3 Open defecation in lake/river/steam ..... 4 Other (specify) .....9	
424	How much do you spend on sanitation in house per month?	Rs ..... ____ ____  ____	
<b>ENERGY</b>			
425	What type of fuel does your household mainly use for cooking food?	Electricity ..... 1 LPG/Natural Gas ..... 2 Bio Gas ..... 3 Kerosen ..... 4 Coal/Light ..... 5 Charcoal ..... 6 Wood ..... 7 Strow/Shrubs/Grass ..... 8 Agricultural Crop Waste ..... 9 Dung Cakes ..... 10 Other (Specify) ..... 98	
426	Cost incurred to family on cooking fuel for one month?	Rs ..... ____ ____  ____	

Q. #	Question	Codes	Go to Q
427	Do you have a separate room which is used as a kitchen?	Yes ..... 1 No ..... 2	
428	What type of fuel does your household mainly use for lighting?	Electricity ..... 1 Kerosene lamp ..... 2 Candle ..... 3 Solar light ..... 4 Other (specify) ..... 9	→435
429	What electrical equipment do you use in house?	Radio .....Y N Mobile .....Y N Television .....Y N Fridge .....Y N Fan .....Y N Other (specify) .....Y N	
430	What was the total cost for electricity in the household over the last one month?	Rs .....  ___ ___  ___	
431	Do you have power cuts?	Yes ..... 1 No ..... 2	
432	During power cut season, generally, for how many hours in a day there is no electricity?	Hours .....  ___ ___	
<b>HOUSE MATERIAL</b>			
433	What is the main material that the Floor of your household is made of?  RECORD, DON'T ASK	Kutchra ..... 1 Semi Pucca ..... 2 Pucca ..... 3	
434	What is the main material that the Roof of your household are made of?  RECORD, DON'T ASK	Kutchra ..... 1 Semi Pucca ..... 2 Pucca ..... 3	



Q. #	Question	Codes	Go to Q
435	What is the main material that the Walls of your household are made of?  RECORD, DON'T ASK	Kutchra ..... 1 Semi Pucca ..... 2 Pucca ..... 3	
<b>FLOODING</b>			
436	Did your house got flodded in last (August 2017) floods?	Yes ..... 1 No ..... 2	→440
437	If yes, for how many days and how many times last year	Days..... _ _  Times..... _ _	
438	Did your house got damaged by rain in last floods?	Yes ..... 1 No ..... 2	
439	If yes, what does it cost to repair the house	Rs. ....  _ _   _ _   _ _	
440	Did the main road got flooded in last rainy season	Yes ..... 1 No ..... 2	
441	Due to floods in last year for How many days your children cannot go to school	Days..... _ _  Not Applicable.....99	
<b>SOLID WASTE</b>			
442	Where do the household throw kitchen waste?	Back yard of house ..... 1 Main road ..... 2 Open plot outside house ..... 3 Use it as gober ..... 4 Mix with gober ..... 5 Other (please specify) ..... 9	
443	How is solid waste in village removed?	Specify: _____	
444	Do you practice composting agriculture waste?	Yes ..... 1 No ..... 2	

Q. #	Question	Codes		Go to Q
444a	Have you heard/read/seen about "Swatchha Bharat" campaign, informing you about how to keep your surroundings clean?	Yes ..... 1		
		No ..... 2		
445	Have you seen/heard/read message on Personal Hygiene or cleanliness or use of toilets ?  (Multiple responses)	YES ...1	Television .....A	
		NO ....2	Radio ..... B	
			Newspaper/book/magazine ..... C	
			Drama/song/nukkad natak ..... D	
			Exhibition/Mela ..... E	
			Group meeting/Programs ..... F	
			Doctor/ASHA/ANM/AWW ..... G	
			Friends/relatives ..... H	
			Other (specify) ..... X	
446	Have you seen/heard/read the messages on Safe drinking water?	YES ...1	Television .....A	
		NO ....2	Radio ..... B	
			Newspaper/book/magazine ..... C	
			Drama/song/nukkad natak ..... D	
			Exhibition/Mela ..... E	
			Group meeting/Programs ..... F	
			Doctor/ASHA/ANM/AWW ..... G	
			Friends/relatives ..... H	
			Other (specify) ..... X	

## Module 5

### Infant and Young Child Feeding (IYCF)

(Only for mothers with children less than two years)

Q. #	Question	Codes	Go to Q
	<p><b>INFORMATION PANEL</b> (this information is entered after identifying eligible children from the household roster)</p> <p>Name of child (from column 9 of household roster): _____</p> <p>Sex of child(from column 2 of household roster) (1=male; 2=female):  __ </p> <p>Line number of child(circled in column 9 of household roster):  __ __ </p> <p>Line number for caregiver of child(from column 10, far right column of household roster):  __ __ </p> <p>Name of caregiver(from column 1 of household roster): _____</p> <p style="text-align: center;">*****</p> <p><b>This module is to be administered to the caregiver (USUALLY The mother) of children recorded in the household roster as less than two/three years of age. A separate module should be completed for each eligible child.</b></p> <p style="text-align: center;">*****</p> <p>Verify that you are speaking with the correct respondent by:</p> <ol style="list-style-type: none"> <li>checking that the respondent's name is the same as the name of caregiver listed in the information panel above.</li> <li>checking that the respondent is the primary caregiver (which is usually the mother) of (NAME).</li> </ol> <p>If the person you are speaking WITHIS not that individual, ask to speak with the correct respondent.</p>		
501	<p>I would like to ask you some questions about (NAME).</p> <p>In what month and year was (NAME) born?</p> <p>What is his/her birthday?</p> <p>If the respondent does not know the exact birthdate ask:</p> <p>Does (NAME) have a health/vaccination card with the birthdate recorded?</p> <p>If the health/vaccination card is shown and the respondent confirms the information is correct, record the date of birth as documented on the card.</p>	<p>DAY.....  __ __ </p> <p>If day is not known, enter '98'</p> <p>MONTH.....  __ __ </p> <p>YEAR.....  __ __   __ __ </p>	
502	<p>How old was (NAME) at his/her last birthday?</p> <p>Record age in completed years.</p>	<p>Less than 1 year..... 0</p> <p>1-2 years..... 1</p>	
503	<p>How many months old is (NAME)?</p> <p>Record age in completed months.</p>	<p>Age in completed months .....  __ __ </p>	

Q.#	Question	Codes	Go to Q
504	<p>Check questions 501, 502 and 503 to verify consistency</p> <p>a) Is the year recorded in Q501 consistent with age in years recorded in Q502?</p> <p>b) Are year and month of birth recorded in Q501 consistent with age in months recorded in Q503?</p> <p>IF the answer to 504a or 504b is 'No', resolve any inconsistencies. If the birthdate was recorded ON a health card, this may be used as the correct data source.</p>	<p>Consistent with Q502:</p> <p>YES.....1</p> <p>NO.....2</p> <p>Consistent with Q503:</p> <p>YES.....1</p> <p>NO.....2</p>	
505	<p>CHECK QUESTION 503.</p> <p>IS THE CHILD LESS THAN 24 MONTHS?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW ..... 8</p>	<p>→ END</p> <p>→ END</p>
506	<p>Has (NAME) ever been breastfed?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW .....8</p>	<p>→ 507a</p> <p>→ 507a</p>
506a	<p>After delivery when (NAME) was initiated breastfeeding?</p>	<p>&lt; one hour.....1</p> <p>1-24 hours.....2</p> <p>&gt;24 hours.....3</p>	
506b	<p>If the child is more than six months:</p> <p>Did you feed any thing like water/honey/gutti any time during first six months?</p>	<p>Only fed breast milk.....1</p> <p>Fed other things with breast milk.....2</p> <p>Don't Remember.....3</p>	
507	<p>Was (NAME) breastfed yesterday during the day or at night?</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW ..... 8</p>	<p>→ 508</p>
507a	<p>Sometimes babies are fed breast milk in different ways, for example by spoon, cup or bottle. This can happen when the mother cannot always be with her baby. Sometimes babies are breastfed by another woman, or given breast milk from another woman by spoon, cup or bottle or some other way. This can happen if a mother cannot breastfeed her own baby.</p>	<p>YES.....1</p> <p>NO.....2</p> <p>DON'T KNOW .....8</p>	

Q. #	Question	Codes	Go to Q	
	Did (NAME) consume breast milk in any of these ways yesterday during the day or at night?			
508	Now I would like to ask you about some medicines that are sometimes given to infants. Was (NAME) given any medicines as drops yesterday during the day or at night?	YES.....1 NO.....2 DON'T KNOW .....8		
509	Was (NAME) given [LOCAL NAME FOR ORS] yesterday during the day or at night?	YES.....1 NO.....2 DON'T KNOW .....8		
Read the questions below. Read the list of liquids one by one and mark yes or no, ACCORDINGLY. After you have completed the list, continue by asking question 11 (see far right hand column) for those ITEMS(10B, 10C, And/or 10f) where the respondent replied 'yes'.				
510	<p>Questions and Filters</p> <p>Next I would like to ask you about some liquids that (NAME) may have had yesterday during the day or at night.</p> <p>Did (NAME) have any (ITEM FROM LIST)?: Read the list of liquids starting with 'plain water'.</p> <p>A Plain water? A:_____</p> <p>B Infant formula such as Janamgutti or grygewater B:_____</p> <p>C Milk such as tinned, powdered, or fresh animal milk C:_____</p> <p>D Juice or juice drinks? D:_____</p> <p>E Clear broth? E:_____</p> <p>F Yogurt? F:_____</p> <p>G Thin Porridge? G:_____</p> <p>H Any other liquids such as [list other water-based liquids available in the local setting]? H:_____</p> <p>I Any other liquids? I:_____</p>	<p>Coding categories</p> <p>YES NO DK</p>	<p>Questions and codingcategories</p> <p>511 How many times yesterday during the day or at night did (NAME) consume any (ITEM FROM LIST)?: Read Question 11 for items B, C, and F if child consumed the item. Record '98' for Don't Know.</p> <p>No of times:  __ __ </p> <p>No of times: __ __ </p> <p>No of times:  __ __ </p>	
512	Do you provide non-vegetarian food to your child?	YES.....1 Some Times.....2 No.....3		

Q. #	Question	Codes	Go to Q
513	Dietary Diversity of Children		
	Now I would like to ask you about liquids or foods which [CHILD'S NAME] had eaten yesterday (last 24 hours) during the day or at night. Record every item in the box provided below and then interpret the food group whether covered or not by marking "Yes=1" or "No= 2".		
	Breakfast	Snacks	Lunch
1	Grains, roots and tubers (all cereals such as rice, wheat, bread, noodles, porridge which are made from grain, roots and tubers like potato, white yam, sweet potato)	GRAINS	Yes= 1, No= 2
2	Legumes and nuts (Any food made from <i>Dal</i> of all kind, beans, peas, lentils, nuts and seeds)	LEGUMES	Yes= 1, No= 2
3	Diary product, excluding mother's milk (Animal milk, Yogurt, Cheese, Curd, Infant formula, canned/ powdered milk)	MILK	Yes= 1, No=2
4	Eggs	EGGS	Yes= 1, No=2
5	Flesh food (Meat, fish, chicken, Liver, Kidney or any organ meat, beef, pork, lamb, sea food)	MEAT	Yes= 1, No=2
6	Vit-A reach fruits and vegetables (Pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside, any dark green vegetables like cassava leaves, amaranthus, bean leaves, pumpkin leaves, rape, mustard. Ripe mangos, ripe papaya, musk melon, foods made with red palm oil/ red palm nuts)	VITFVEG	Yes= 1, No=2
7	Other fruits and vegetables	OFRTVEG	Yes= 1, No=2
514	Did ( <b>NAME</b> ) eat any solid, semi-solid, or soft foods yesterday during the day or at night? <i>IF 'YES' PROBE:</i> What kind of solid, semi-solid, or soft foods did ( <b>NAME</b> ) eat?	YES..... 1 GO BACK TO Q12 AND RECORD FOODS EATEN. THEN CONTINUE WITH Q14 NO..... 2 DON'TKNOW ..... 8	→ 517 → 517
515	How many times did ( <b>NAME</b> ) eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night, including snacks and meals?	NUMBEROFTIMES.....  __ __  DON'TKNOW ..... 98	

Q.#	Question	Codes	Go to Q
516	Did ( <b>NAME</b> ) drink anything from a bottle with a nipple yesterday during the day or night?	YES..... 1 NO..... 2 DON'TKNOW ..... 8	
517	Does (NAME) goes to Anganwadi center?	YES..... 1 NO..... 2 DON'TKNOW ..... 8	
518	Is (NAME) weighed recently?	YES..... 1 NO..... 2 DON'TKNOW ..... 8	→ 601 → 601
510	Who weighed weight of (NAME)?	AWW.....1 ANM.....2 Doctor.....3 Other (specify).....8	
520	How frequently (NAME) is weighed?	Once in a month.....1 Not regularly.....2 Don't know.....8	
521	What is the most recent weight of (NAME)?	WEIGHT in KG:  __ __ .  __	

## Module 6

### Immunization and Childhood morbidities management

(Only for mothers with child in the age group of 12-23 months)

Q. #	Question	Codes	Go to Q																																																																																																
601	Within the last six months, was (NAME) given a vitamin A dose?	Yes.....01 No.....02 Don't know.....8																																																																																																	
602	Was (NAME) given any drug for intestinal worms in the last six months?	Yes.....1 No.....2 Don't know.....8																																																																																																	
603	Do you have a card where (NAME'S) vaccinations are written down? IF YES: May I see it please?	Yes, Seen.....1 Yes, Not seen.....2 No card.....3	→606 →606																																																																																																
604	Did you ever have a vaccination card for (NAME)?	Yes.....1 No.....2																																																																																																	
605	(1) copy vaccination date for each vaccine from the card. (2) write '44' in 'day' column if card shows that a vaccination was given, but no date is recorded. (3) if only part of date is shown on card, record '98' for 'don't know' in the column for which information is not given.	<table border="1"> <thead> <tr> <th></th> <th>DD</th> <th>MM</th> <th>YY</th> <th>Mother reported</th> <th>Not received</th> </tr> </thead> <tbody> <tr><td>BCG</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Polio 0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Polio 1</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Polio 2</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Polio 3</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>DPT 1 (PV1)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>DPT 2 (PV2)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>DPT 3 (PV3)</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Hepatitis B0</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Hepatitis B1</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Hepatitis B2</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Hepatitis B3</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Measles</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>Vitamin A in last 6 months</td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td>De-worming in last 6 months</td><td></td><td></td><td></td><td></td><td></td></tr> </tbody> </table>		DD	MM	YY	Mother reported	Not received	BCG						Polio 0						Polio 1						Polio 2						Polio 3						DPT 1 (PV1)						DPT 2 (PV2)						DPT 3 (PV3)						Hepatitis B0						Hepatitis B1						Hepatitis B2						Hepatitis B3						Measles						Vitamin A in last 6 months						De-worming in last 6 months						
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606	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a Pulse Polio campaign?	Yes.....1 No.....2 Don't know.....8																																																																																																	
607	Has (NAME) had diarrhoea in the last 2 weeks?	Yes.....1 No.....2	→613																																																																																																



Q.#	Question	Codes	Go to Q
608	Was there any blood in the stools?	Yes.....1 No.....2	→613
609	Now I would like to know how much (NAME) was given to drink (including breastmilk) during the diarrhoea. Was (he/she) given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was (he/she) given much less than usual to drink or somewhat less?	Much less.....1 Somewhat less.....2 About the same.....3 More.....4 Nothing to drink.....5 Don't know.....8	
610	When (NAME) had diarrhoea, was (he/she) given less than usual to eat, 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?	Much less.....1 Somewhat less.....2 About the same.....3 More.....4 Nothing to eat.....5 Don't know.....8	
611	Did you seek advice or treatment for the diarrhoea from any source?	Yes.....1 No.....2	→613
612	Where did you seek advice or treatment?  Anywhere else?	Medical college.....A District Hospital.....B Sub District Hospital.....C HSC/ANM.....D PHC.....E APHC.....F CHC.....G VHND.....H AWC.....I Private clinic/hospital/Dispensary.....J Village RMP.....K AYUSH clinic/doctor.....L Other (Specify).....X	
613	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	Yes ..... 1 No ..... 2 Don't Know.....8	→End →End
614	When (NAME) had an illness with a cough, did (he/she) breathe faster than usual with short, rapid breaths or have difficulty breathing?	Yes ..... 1 No ..... 2 Don't Know.....8	→End →End
615	Was the fast or difficult breathing due to a problem in the chest or to a blocked or runny nose?	Chest Only.....1 Nose only.....2 Both.....3 Other (specify).....9 Don't Know.....8	

Q. #	Question	Codes	Go to Q
616	Now I would like to know how much (NAME) was given to drink (including breastmilk) during the above problem. Was (he/she) given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was (he/she) given much less than usual to drink or somewhat less?	Much less .....1 Somewhat less.....2 About the same.....3 More.....4 Nothing to drink.....5 Don't know.....8	
617	When (NAME) had above problem, was (he/she) given less than usual to eat, 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?	Much less.....1 Somewhat less.....2 About the same.....3 More.....4 Nothing to drink.....5 Don't know.....8	
618	Did you seek advice or treatment for above illness (pneumonia) from any source?	Yes.....1 No.....2	→End
619	Where did you seek advice or treatment?  Anywhere else?	Medical college.....A District Hospital.....B Sub District Hospital.....C HSC/ANM.....D PHC.....E APHC.....F CHC.....G VHND.....H AWC.....I Private clinic/hospital/Dispensary.....J Village RMP.....K AYUSH clinic/doctor.....L Other (Specify).....X	

Thank the respondent for participating in survey

## **Annexure 5**

Time Use Survey Tool

(Cannot be pasted in this format)

## Annexure 6

### FGD Guide for Caregivers (mothers and grandmothers)

#### Maternal time use

After getting up in the morning, what all household chores does a mother do on daily basis? Irrespective of other family responsibilities, how much time does a women spend on child care? Probes: Work inside the home versus outside the home, Paid activity versus unpaid, Hours taking care; feeding and playing with child in this age group

#### B. Household caregiving roles

1. Who takes main responsibility for caring and looking after your young children like feeding, playing, bathing and other roles?

**Probe:** participation grandmother and other female members,

**Probe:** father, grandfather and other male members

1. If you must go out to work, who is responsible for feeding the child or does the child accompany you to work? Who in your household makes decisions relating to feeding your young child?

**Probe:** who else gives advice regarding the feeding your young child

2. Who in your household buys food like pulses, cereals, vegetables, milk, non-vegetarian food and other protective foods like fruits?

**Probe:** participation of fathers and in-laws

**Probe:** What resource issues (money, availability, time) do you face to address these needs?

#### C. Breast-feeding and complementary feeding

Now I will ask you regarding the feeding of the child, the food children dislike and likes and how you do manage to prepare and feed your child.

1. In your villages what is usually fed to the new born immediately after birth and why?

**Probe:** colostrum, ghutti, fruits, cow or buffalo milk, water, other items

2. Exclusive BF is defined as no other food or drink, not even water except breast milk. For how long is a child in your village exclusively breastfed?

**Probe:** biscuits, ghutti, fruits, cow or buffalo milk, water, other items

3. What according to you are the problems that women might face in initiation and continuation of breast-feeding?

**Probe:** Socio-cultural beliefs and practices, physical/ medical condition

4. How did you solve the problem? Whom did you seek help from?

5. At what of age of the child is semi-solid food introduced? What kinds of semi-solid foods are usually given to a child?

**Probe:** formula feed, biscuit, home cooked foods like roti, daal, khichdi, dalia

6. Please describe how are these foods prepared?

**Probe:** especially prepared for the child/ along with food prepared for adult members, quantity of food, no. times prepared

7. How frequent and how much quantity of semisolid food is fed?

**Probe:** how do you ensure that child has eaten enough?

8. What difficulties are faced in feeding the child? How do you overcome these difficulties?

9. Occasionally infants become sick e.g. fever, cough, loose motions. What according to you are the common symptoms of diseases among children?

10. What types of food are given during this illness?

**Probe:** liquid, semi- solid, frequency, quantity and difference from regular food

11. What is the source of information regarding child feeding practices?

**Probe:** Breast feeding, weaning, semi-solid food, feeding during illness

## C. Hygiene

1. When do you wash your hands with soap and why? What difficulties do you face in washing hands with soap?

**Probe:** Availability of soap, water, any barriers in hand washing

2. Who informed you about hand washing practice?

3. Where do the small babies defecate?

**Probe:** inside the premise of house, outside in the field, cleaning of soiled clothes

## D. Play and Communication

The first year of a child's life is key to the development of speech, language and brain. Family environment is very important for this. We shall discuss few issues related to this.

1. What are common games/ activities for engaging children up to two years?

2. Have you been advised by health workers

**Probe:** ASHA, AWW) or elders and family members on appropriate games and activities

3. Please describe the difficulties do you experience in following such advice?

4. Do the parents of school going children go to the school and interact with teachers?

**Probes:** who goes- father, mother; when and why)

5. Who helps the children with homework?

**Probe:** time of parents, capacity, parents absent who takes care

## Annexure 7

### Key Informant Interview Guide: Frontline Health Workers (ANN,ASHA and AWW)

#### 1. Optimal infant and young child feeding

1. What according to you is malnutrition?
2. Do you know about the signs of malnutrition? Please tell us about them.
3. In your view is childhood under nutrition an important health issue in this village? Why do you think so?

**Probe:** Approximately what percentage of children under five years age is undernourished?

**Probe:** If not, why not. How about other villages?

We know that mothers are advised to breast feed their babies exclusively for the first six months of life. Exclusive BF is defined as “no other food or drink, not even water except breast milk for 6 months of life.”

4. What is the age till which babies are usually exclusively breast fed in this village?

**Probe:** According to you is this the correct age?

**Probe:** Approximately what percentage of mothers may not be exclusively breastfeeding for the required number of months?

5. What is the age at which complementary feeding (semi-solid foods) is initiated by most mothers in this village?

**Probe:** In your view is this the right age or delayed?

**Probe:** Approximately what percentage of mothers may not give complementary food after the first six months? Why?

**Probe:** What is the result of delayed complementary feeding?

6. What are the foods that mothers generally use for complementary feeding in this village?

**Probe:** Is there an adequate variety of food types;

7. In your view how many times are children given complementary food in a day.

8. Quantity of food given?

**Probe:** In your opinion are the mothers giving the child adequate complementary food

**Probe:** how do the mother's assess how much to give?

9. What are the barriers that mothers may face in giving adequate (quantity and frequency) complementary feeds to the young children?

10. Where do mothers usually source food for infants and young children?

**Probes:** local markets, PDS shops, natural resources, land ownership, livestock

## 11. Risk of infection

1. Can you please tell me about routine infant and young child vaccination in this village?

**Probe:** What is available, who provides, when and where

2. Please describe the common infection in this village (seasonal, water borne, vector borne)
3. Please describe the common causes of infection in this village

**Probe:** Household practices, hand washing practices, access to clean water and sanitation in village, cattle and livestock, other infection risks to infant and young children

## 4. Household care and play

1. In your view what is the importance of playing and communicating with young children?

**Probe:** Are mothers and fathers able to do these adequately for young children (up to 24 months)?

**Probe:** When mothers go out for work do they carry the child? Which are the other caregivers? Do they spend adequate time with the child when mothers are away for work?

## 2. Role of frontline workers

1. VHND

Frequency:

Services given:

Discussion topic covered:

2. Pukar Meeting

Frequency:

Services given:

Discussion topic covered:

3. Role ofVHSNC members, panchayat, influencers

## 4. Sources of information and local initiatives

1. Are you aware of any activities in the village that helps households with the following

1. Access to food
2. Relationships with schools
3. Access to clean water and sanitation
4. Access to cooking fuels
5. Where else might parents receive information about breastfeeding and infant and young child feeding?

**Probe:** Role of media, technology, TV series

6. Do you think schools could be used as community hubs to engage with parents about the issues we have discussed today?

## Annexure 8:

### Key Informant Interview Guide: School Teacher

Context setting: We are here to ask you some questions about health and nutrition in young children in this village. We will also ask about the wider environment, including how things are in the village, in schools and in the Anganwadi centres. We are speaking with you today because we see the teacher as a knowledgeable person within a community and whilst our questions might not all relate to the school, teachers are often familiar with parents and community experiences. If this is ok, we would like you to give us your views on this community.

### Background of the Respondent:

1. Since when is the person HT at this school
1. Till what grade the school goes
2. How many students (girls and boys)
3. How many teachers
4. How many vacancies
1. Relationships / quality of interactions with schools
1. Please tell us how often do the parents and teachers meet each other?
1. Who generally comes – Mother? Father? Other family member?
2. Beside formal teacher-parent meetings what other ways do the community interact with schools?
3. How are these meetings organized?
4. How do the migrant parents in the community engage with the schools?
5. For what issues of child do parents seek advice from school teachers?
  1. Education issues
  2. Health and Nutrition issues
  3. Information related to government scheme like Housing, Sanitation, drinking Water .
  4. Beside parents of school going children, which other people come to the school to seek any kind of advice?

**Probe:** Does the parents of younger children come to seek information on infant and young child feeding and care practices at home?

**Probe:** What information do you give for promoting IYCF?
5. What are the other programmes, besides education, about which parents are informed by the school?

**Probe:** this can include WASH practices

**Probe:** government scheme like Housing, Sanitation, Drinking Water .
6. Do you give homework to school children?



**Probe:** do parents help children with their homework? If so, what kind? If not, anyone else? Does this depend on the literacy levels of the parents? What are the other reasons for parents not helping with homework?

7. What language is commonly used in school classrooms?

**Probe:** is this a common language, well understood by all students.

**Probe:** Who are pupils that are less familiar with this language and why?

8. What are the different approaches you adopt for communicating with children in an effective manner?

**Probe:** Playing as a medium for communicating with children

9. Household care and play

Children often associate the school with extracurricular activities like sports and games. They also learn life skills like communication in the school

10. Please share your view about the importance of playing and communicating for children? How do you encourage play and communication among schools children?

**Probe:** Do you think it is important for children in age group of 6-24 months?

**Probe:** Role of parents and other family members in encouraging play and communication at home among small children?

11. Barriers to optimal infant and young child feeding

Food and nutrition is an important determinant for child's overall development. Although the family is the source of food and nutrition for all children, for school age children, the school is also playing a crucial role under to the Mid- day Meal Scheme.

12. Please tell us about the different food items that you serve as a part of your midday meal scheme?

13. According to you, do children receive similar foods at home?

14. In your view is childhood under nutrition an important health issue in this village?

**Probe:** If not, why not. How about other villages nearby?

15. In your view what are the barriers facing mothers when trying to give a diverse range of complementary feeds in adequate quantities and as many times as required?

**Probe:** Access to foods, clean water, cooking fuels, information, financial barriers, time

16. Sources of infection

17. Please describe the common causes of infection in this village

**Probe:** Household practices, access to clean water and sanitation in village, cattle and livestock, other infection risks to infant and young children

18. Sources of information and local initiatives

19. What is the role of the teachers/ school in the functioning of Anganwadi Centre as well as the Anganwadi worker

**Probe:** regular meetings? Review of attendance? Review of food that is distributed?

20. Are you aware of any government programmes in the village that helps households with the following

1. Access to food
2. Relationships with schools
3. Access to clean water and sanitation
4. Access cooking fuels

21. Do villagers have access to TV/ radio/ Newspapers and what information do they get this way?

**Probe:** is there enough electricity?

**Probe:** do they get information about hygiene, infant and young child feeding . from there? `

## Conclusion

We believe that families respect what teachers say and schools are seen as an important point of knowledge. We would like your help in making this school a centre for the whole community where parents can learn about issues that affect their whole family (not only school going children). How can we make the school a resource centre for addressing children's development. (This would not entail more work for any of the teachers.)

## Annexure 9

### Key Informant Interview Guide: Ward Panch (local Panchayat leader)

#### Preamble:

As a ward panch, we see you as a knowledgeable person within a community and a representative of people. Besides, as Panchayat member you perform certain functions that are relevant for health and nutritional status of the children in your community. Hence we would like you to give us your views on this community as well as highlight the functions of the Panchayats and the challenges faced in implementing those functions.

#### Background of the respondent:

1. Duration of being a Ward Panch:
2. Source of Livelihood:
3. Motivation for political career:
  1. Functions as the Ward Panch:
    1. Probe: health, nutrition, education, sanitation, housing, food security
    2. Priorities/ on-going programmes in the above themes in the last three years
    3. Please describe the process through which such priorities are identified
  1. Probe: Role of Sarpanch and other officials
  2. Probe: Role of Gram Sabha
  4. Fund allocation for these priorities
  5. Your/ Panchayat's role in implementation of these programmes (Probe for examples from the Swachh Bharat Mission, Gram men Awas Yolanda, National Health Mission, Ujjwala Yolanda, PDS )
  6. Your/ Panchayat's role in monitoring, supervision and oversight of the functionaries in these programmes
7. Livelihood pattern in the village:
  1. Agriculture & irrigation (probe: feminization of agriculture)
  2. Livestock
  3. Migration
8. How do you ensure accountability of government staff (probe ANM,ASHA,AWW, School Teacher)
9. Functions of the VHSNC, Gram Sabha, SMC (Probe: frequency of meeting, membership, notable achievements in the last three years)

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