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Nutrition at the Center: Client Outcomes of the Rajasthan Nutrition Project

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PROFESSIONAL ASSISTANCE FOR DEVELOPMENT ACTION (PRADAN)

PRADAN was established in 1983 and is a widely-recognized national-level organization that specializes in promoting livelihood opportunities among SHGs of women. PRADAN follows a four-pronged approach to achieve its goals: 1) Promoting and nurturing SHGs of poor women and strengthening them as organizations to leverage institutional finances for members' livelihoods; 2) Developing and introducing locally suitable economic activities to increase productivity and income among SHG members and building synergic collaboration with a wide variety of stakeholders; 3) Mobilizing finances for livelihood assets and infrastructure from government bodies, donors, banks and other financial institutions; and 4) Setting up mechanisms to sustain the livelihood gains made by the poor communities. In Sirohi, Rajasthan, PRADAN currently is reaching over 450 women's SHGs and implementing a variety of agriculture, livestock improvement, and nutrition and health projects.

VOLUNTARY ASSOCIATION OF AGRICULTURAL GENERAL DEVELOPMENT HEALTH (VAAGDHARA)

VAAGDHARA was formed in the 1980s to augment livelihood sources and options through improving traditional agricultural practices among the tribal population and other marginalized groups in Rajasthan. VAAGDHARA has broad expertise in developing and implementing programs that link interventions across multiple sectors to address poverty, women's empowerment, child protection, agricultural development and livelihood development and poverty alleviation. VAAGDHARA is currently reaching thousands of families in Banswara with livelihood, agriculture and food security initiatives and will use this as the foundation for increased focus on health, nutrition and gender.

GRAMEEN FOUNDATION

Grameen Foundation is a global nonprofit organization that helps the world's poorest people achieve their full potential by providing access to essential financial services and information on health and agriculture that can transform their lives. In 2016, Grameen Foundation and the global non-profit Freedom from Hunger decided to join forces under the banner of Grameen Foundation. The integration of the two organizations brings together Grameen Foundation's expertise in digital innovation to end poverty and Freedom from Hunger's focus on providing the world's poorest women with self-help tools to reduce hunger and poverty. Grameen Foundation is headquartered in Washington, D.C., with offices in the U.S., Asia, Africa, and Latin America. For more information, please visit www.grameenfoundation.org or follow us on Twitter: @GrameenFdn.

FREEDOM FROM HUNGER INDIA TRUST

Established in 2012, Freedom from Hunger India Trust (FFHIT) is an independent Indian non-profit organization based in New Delhi with offices in West Bengal and Madhya Pradesh. The technical staff of FFHIT oversee health, nutrition, financial inclusion, vulnerable youth and savings group methodologies, and provide expert advice on learner-centered curriculum design. FFHIT's goal is to achieve nutrition and food security, reduce poverty and improve economic and social status of poor and marginalized women and their families through increased integration of financial services with other essential services such as health, nutrition

and livelihood opportunities. FFHIT is also an active member of National Coalition of Food and Nutrition Security.

CENTRE FOR HEALTH, EDUCATION, TRAINING AND NUTRITION AWARENESS (CHETNA)

CHETNA, which means “awareness” in several Indian languages, addresses issues of women’s health and development in different stages of their lives from a rights-based perspective. CHETNA supports government and non-governmental organizations through building the management capacities of educationists, health practitioners, supervisors, and managers enabling them to implement their programs related to children, young people and women from a holistic and gender perspective and advocates for people-centered policies. CHETNA also does advocacy, development and dissemination of materials. CHETNA is based in Ahmedabad, Gujarat and primarily works in Gujarat and Rajasthan States.



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EXECUTIVE SUMMARY

Between 2015 and 2017, five organizations came together for the Rajasthan Nutrition Project (RNP): Freedom from Hunger⁴, a supporting organization of Grameen Foundation; Freedom from Hunger India Trust, New Delhi; the Centre for Health, Education, Training and Nutrition Awareness (CHETNA); and two Indian implementing non-governmental organizations (NGO), the Voluntary Association of Agricultural General Development Health (VAAGDHARA) and Professional Assistance for Development Action (PRADAN). The goal of the Rajasthan Nutrition Project was simple: improve the nutrition of poor, rural women, together with the adolescent girls and young children in two tribal districts of Rajasthan—Banswara and Sirohi. The approach, however, required the integration of several cross-sectoral activities inclusive of agriculture, nutrition and health, financial services and gender. Self-help groups (SHGs) of women supported by PRADAN and VAAGDHARA were the anchor through which these activities were integrated.

A mixed-methods evaluation was used to assess the project and how well it met pre-determined targets and included a pre- and post-test quantitative survey completed with approximately 460 female participants who were either pregnant or mothers of children under the age of two as well as focus group discussions and key informant interviews with project staff, SHG members and their husbands as well as women who were not members of SHGs and their husbands.

Given the project evaluation design was unable to incorporate a comparison group, project targets were established prior to implementation and included the following impact areas:

1. Infants breastfed within first hour after birth and exclusively for six months: Target was to reach Rajasthan state's breastfeeding rate for breastfeeding in the first hour
2. Use of oral rehydration solution (ORS) and increased fluids in treating diarrhea: Target was to reach Rajasthan's ORS use-rate
3. Improved household food security: Target was to improve upon the baseline rate by the endline
4. Improved linkages and use of local health and nutrition services, such as the Integrated Child Development Services (ICDS) program, an Indian government welfare program which provides food, preschool education, and primary healthcare to children under 6 years of age and their mothers: Target was to improve upon the baseline rate by the endline.

While a target was not set regarding a change in social norms, intra-household decision-making dynamics, women's mobility, and self-perception were also measured to understand changes of these gender dynamics during the project period.

⁴ Throughout the rest of this report, Grameen Foundation will be used to reference work started by Freedom from Hunger.

The results suggest that all targets were met, if not exceeded. One indicator, the percent that reported breastfeeding their newborn within 1 hour of birth, was already greater than the National Family and Health Survey (NFHS-4) target at baseline.

Statistic	India National	Rajasthan	Banswara District	Sirohi District
% who breastfed within 1 hour of birth				
NFHS-4	41.6%	28.4%	37.8%	28.6%
RNP Baseline	—	47.1%	42%	48%
RNP Endline	—	82.7%	73.9%	84.6%
% who exclusively breastfed first 6 months				
NFHS-4	46.3%	32.1%	36.4%	42.6%
RNP Baseline	—	27.1%	27%	28%
RNP Endline	—	36.2%	39.1%	35.6%
% who had a child with diarrhea that used ORS				
NFHS-4	50.6%	56.2%	n/a	59.4%
RNP Baseline	—	34.1%	42%	33%
RNP Endline	—	84.2%	88.9%	82.8%
% food secure				
NFHS-4	—	—	—	—
RNP Baseline	—	21.1%	24%	20%
RNP Endline	—	52.6%	65.7%	48.0%
% utilizing ICDS Services in last 12 months				
NFHS-4	—	—	—	—
RNP Baseline	—	60.6%	79%	54%
RNP Endline	—	92.7%	100%	90.1%

Women also reported greater intra-household decision-making, reduced fear of their husbands, and more confidence and satisfaction with their lives. A key reported impact of the project by beneficiaries was that they increased the number of meals they consumed with their husbands which resulted in them eating a greater share of the meals they prepared as well as improved communication with their spouses.

The Rajasthan Nutrition Project was designed to improve the equitable nutrition of tribal communities in rural Rajasthan. It required balancing the complexity of project design with the

required simplicity of how beneficiaries would interact with the project components. Measureable improvements in food security, health behaviors, and intra-household dynamics were mostly likely due to the ability of the RNP partners to build off their respective strengths and leverage their prior successes with the self-help group movement in India.

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INTRODUCTION

Between 2015 and 2017, five organizations came together for the Rajasthan Nutrition Project (RNP): Freedom from Hunger, a supporting organization of Grameen Foundation; Freedom from Hunger India Trust, New Delhi; the Centre for Health, Education, Training and Nutrition Awareness (CHETNA); and two Indian implementing non-governmental organizations (NGO), Voluntary Association of Agricultural General Development Health (VAAGDHARA) and Professional Assistance for Development Action (PRADAN). The goal of the Rajasthan Nutrition Project was simple: improve the nutrition of poor, rural women, together with the adolescent girls and young children in two tribal districts of Rajasthan—Banswara and Sirohi. The approach, however, required the integration of several cross-sectoral activities inclusive of agriculture, nutrition and health, financial services and gender. Self-help groups (SHGs) of women supported by PRADAN and VAAGDHARA were the anchor through which these activities were integrated.

This report will provide background on the Rajasthan Nutrition Project, will summarize the findings from a pre- and post-test assessment conducted with approximately 460 women across the districts of Banswara and Sirohi in Rajasthan, and will conclude with a discussion regarding the promise of such a cross-sectoral approach for improving the nutritional status of the rural poor in India, particularly among women and children.

BACKGROUND

While global food security has improved over the last several decades, it is still a serious problem for poor countries such as India, which ranked 97th out of 118 in the 2016 Global Hunger Index study of food insecurity in both developed and underdeveloped nations.ⁱ The World Food Programme reports that approximately 25 percent of the world's undernourished population lives in India.ⁱⁱ Despite economic growth experienced across the country, anemia rates for all women originally estimated for the 2005–06 National Family Health Survey (NFHS) have only decreased slightly according to the 2015–2016 NFHS, particularly for rural areas; more than 50 percent of women still suffer from anemia. Men have almost half the anemia rate compared to women of the same age range, with children experiencing anemia at rates similar to their mothers.ⁱⁱⁱ

India faces what has become known as the “India enigma,” which describes the paradox that exists where improvements in stunting and undernutrition have not kept pace with economic growth and where Indian malnutrition rates are actually higher than some locations in Sub-Saharan Africa.

India faces what has become known as the “India enigma,” which describes the paradox that exists where improvements in stunting and undernutrition have not kept pace with economic growth and where Indian malnutrition rates are actually higher than some locations in Sub-Saharan Africa.^{iv} Women in South Asia also tend to have lower empowerment status and less

decision-making power than women in Sub-Saharan Africa.^v Thousands of women and girls in India therefore still lack food and nutrition security due to socio-cultural barriers.^{vi}

Rajasthan is India's largest state by area and is located in the north-west of the country, bordering Pakistan. Rajasthan's economy relies primarily on agriculture, with cotton and tobacco as its key cash crops; it is one of India's poorest states, with its poverty concentrated in its western and southern districts.^{vii}

In the 2011 census, Scheduled Tribes constituted approximately 13 percent of the total population in Rajasthan, making Rajasthan one of the top four states in terms of the concentration of the Scheduled Tribe population in India.^{viii} Scheduled Tribe populations are often defined by their historic geographic isolation from the general population in India, which has manifested in relative as well as absolute deprivation. Scheduled Tribe households generally face the greatest poverty and hunger, lowest levels of education attainment, and the poorest health outcomes.^{ix} Seventy-six percent of the population in Banswara district in Rajasthan is Scheduled Tribe, making Banswara the district with the highest concentration of Scheduled Tribes in the state.^x

Within the Indian state of Rajasthan, women face poor health outcomes and gender constraints, often at levels greater than the national average. Approximately 60 percent of children and 46 percent of women suffer from anemia, 39 percent of children under the age of five are stunted.^{xi} Stunting is highest among tribal children in the region compared to non-tribal

children (54 percent compared to 45 percent, respectively); severe stunting was greatest among tribal girls compared to tribal boys (31 percent vs. 27 percent, respectively), clearly indicating gender discrimination in intra-household feeding patterns.^{xii}

Within the Indian state of Rajasthan, women face poor health outcomes and gender constraints, often at levels greater than the national average. Approximately 60 percent of children and 46 percent of women suffer from anemia, 39 percent of children under the age of five are stunted.

The child sex ratio is one of the lowest in India: there are 888 girls to every 1000 boys.^{xiii} Moreover, women's empowerment status falls below the national average in Rajasthan as measured by a Gender Empowerment Index. Rajasthan scores 0.4, compared to the national average of 0.5, on a scale of 0-1 where 1 represents greater empowerment.^{xiv} Only 25 percent of married women make decisions about their own healthcare; only 35 percent of women participate in the workforce.^{xv}

From a financial inclusion perspective, there has been an approximate 20 percentage-point growth in savings account ownership of both men and women between 2011 and 2014 in India, but women still lag far behind men in terms of account ownership. In 2014, it was estimated by the Global Findex that 63 percent of men had an account whereas 43 percent of women did.^{xvi} Per the NHFS-4, women in Rajasthan have made significant gains since the NHFS-3 survey such that approximately 58 percent of women have an account compared to 7.6 percent as measured in 2005-06.^{xvii} The Indian government's Pradhan Mantri Jan-Dhan

Yojana (PMJDY) program, which was designed to increase financial inclusion by extending digital financial service-capable bank accounts to the entire unbanked adult population, is credited for much of the growth in account ownership.^{xviii}

RAJASTHAN NUTRITION PROJECT

There is a critical window of opportunity to prevent under-nutrition by targeting children in the first two years of life, girls during adolescence and mothers during pregnancy and lactation—when proven nutrition interventions offer children the best chance to survive and reach optimal growth and development.

The Rajasthan Nutrition Project (RNP) was designed as a cross-sectoral project that aimed to build on the existing women's self-help group (SHG) movement to supplement standard savings and livelihood activities with vital health and nutrition knowledge, budgeting/ planning skills, nutrition-sensitive agriculture techniques, improved gender awareness and linkages to nutrition-related services and advocacy for improved service delivery. RNP aimed to reach at least 8,000 women SHG members and their households (an additional 28,000 family members) in Rajasthan's southern districts of Sirohi and Banswara (Figure 1).

Figure 1. Map of Rajasthan



Grameen Foundation, together FFFIT, CHETNA, PRADAN and VAAGDHARA came together to improve household nutrition through the integration of agriculture, nutrition, financial services and gender in a project collaboratively known as the Rajasthan Nutrition Project.

There were three main goals of RNP:

1. To improve knowledge, behaviors and access to local nutrition-related services for women, adolescent girls and young children.
2. To facilitate dialogue that will lead to increased women's empowerment and more gender-equitable resource management and food distribution within the household.
3. To improve women's financial literacy, resource management ability and skills related to planning for better household nutrition.

The nutrition conceptual framework used by the RNP, provided in Annex 1, is closely aligned with the current USAID and UNDP Multi-Sectoral Nutritional Strategies, and depicts the multi-sectoral nature of the problem and its solution. While the interventions of the RNP directly engage SHG members, who are primarily women of reproductive age plus influencers

(mothers, mothers-in-law), the indirect target beneficiaries include adolescent girls and young children in their households.

Four impact areas and targets were chosen to guide the RNP and measure its success at achieving improved food security and health-seeking behaviors among the rural Rajasthan population during its two-year implementation period:

1. Infants breastfed within first hour after birth and exclusively for six months: Target was to reach Rajasthan's breastfeeding rate for breastfeeding in the first hour
2. Use of ORS and increased fluids in treating diarrhea: Target was to reach Rajasthan's ORS use-rate
3. Improved household food security: Target was to improve upon the baseline rate by the endline
4. Improved linkages and use of local health and nutrition services, such as the Integrated Child Development Services (ICDS) program, an Indian government welfare program which provides food, preschool education, and primary healthcare to children under 6 years of age and their mothers: Target was to improve upon the baseline rate by the endline.

RNP Targets

- Reach Rajasthan's state-level breastfeeding rate for breastfeeding in the first hour
- Reach Rajasthan's state-level ORS use-rate
- Improve upon baseline food security levels
- Improve upon baseline use of ICDS services

Table 1 highlights the baseline rates and targets, which will also be described later in this report. The measures provided in the table for Rajasthan for the RNP baseline measures are the RNP averages of the measures from Banswara and Sirohi Districts (they are not a state-wide measure as with the NFHS-4). It is important to note, that the NFHS-4 had not yet been completed when the original targets were set. The RNP team had to use various sources (such as the NFHS-3 survey which was 10 years out of date) to estimate baseline averages for the metrics the project used to set targets. However, for simplicity and because the NFHS-4 survey implementation corresponded with the implementation of the RNP, these measures are used instead below. As seen below, the RNP baseline averages for breastfeeding within one hour of birth were already greater for RNP participants than the national and state targets set prior the baseline assessment. All other indicators had room for improvement. While the main target for breastfeeding was based on the "breastfed within 1 hour of birth" because it was assumed that seeing change in exclusive breastfeeding might be more challenging to accurately measure, the exclusive breastfeeding rate is provided as an additional reference.

Table 1: RNP Targets and Baseline Averages

Statistic	India National	Rajasthan	Banswara District	Sirohi District
% who breastfed within 1 hour of birth				
NFHS-4	41.60%	28.40%	37.80%	28.60%
RNP Baseline	—	47.1%	42%	48%
% who exclusively breastfed first 6 months				
NFHS-4	46.30%	32.10%	36.40%	42.60%
RNP Baseline	—	27.1%	27%	28%
% who had a child with diarrhea that used ORS				
NFHS-4	50.60%	56.20%	n/a	59.40%
RNP Baseline	—	34.1%	42%	33%
% food secure				
NFHS-4	—	—	—	—
RNP Baseline	—	21.1%	24%	20%
% utilizing ICDS Services in last 12 months				
NFHS-4	—	—	—	—
RNP Baseline		60.6%	79%	54%

To achieve impact in the target areas established above, the RNP developed a comprehensive, cross-sectoral approach that built upon the strength of the existing SHG programs of both PRADAN and VAAGDHARA. Prior to RNP, both organizations were growing their SHG strategy by starting new groups as well as supporting their existing groups with agricultural programming, such as support to raise livestock, grow home gardens, providing irrigation technologies as well as hosting community events to engage men in a learning agenda around gender, combating alcoholism, etc. In collaboration with Grameen Foundation and Freedom from Hunger India Trust, both organizations expanded their SHG platform to new groups and were able to integrate the following nutrition and health approaches to supplement these groups:

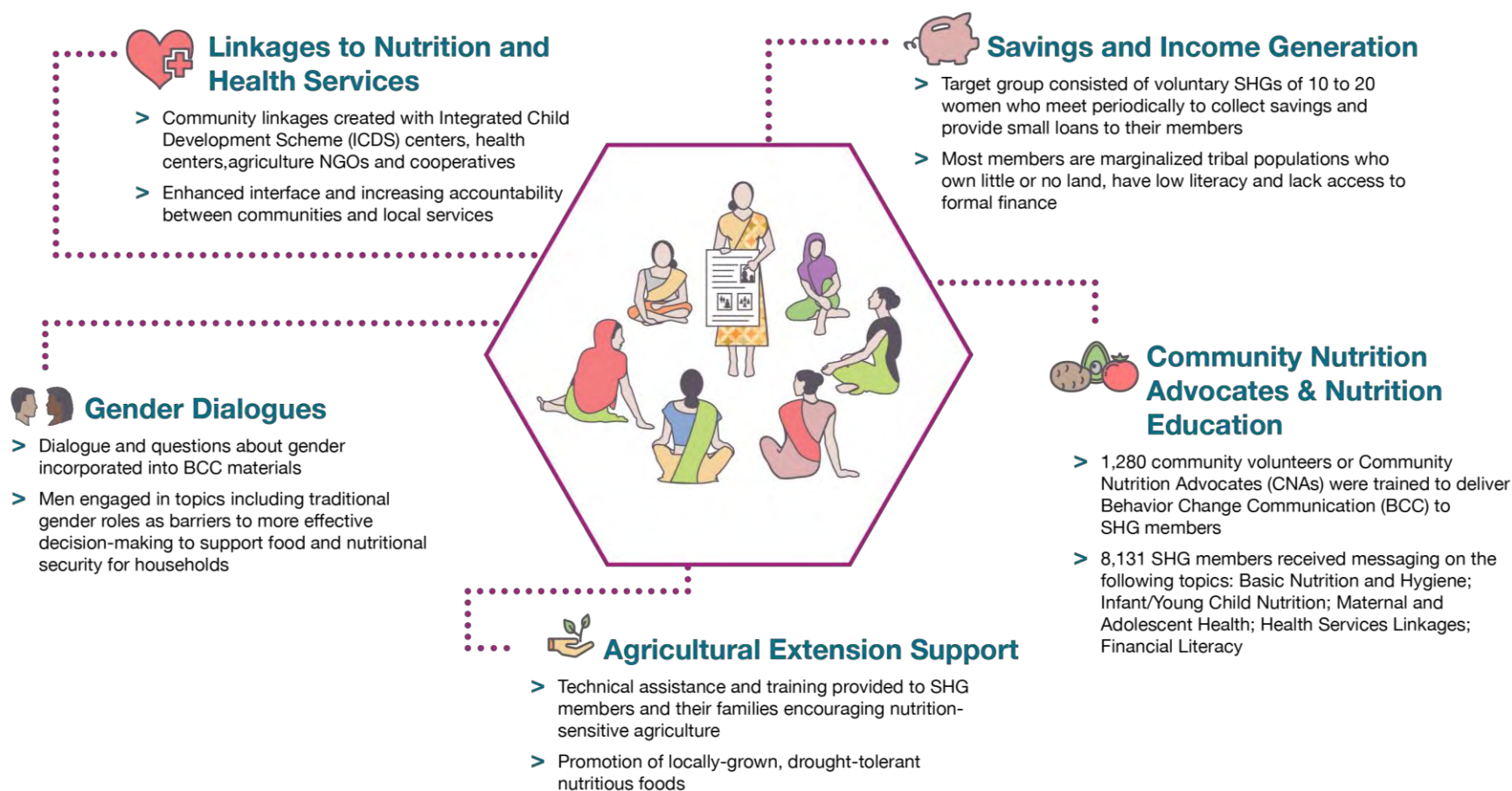
1. **Community Nutrition Advocates:** 1,280 community volunteers, or Community Nutrition Advocates (CNAs) across PRADAN and VAAGDHARA were recruited and trained to deliver the health Behavior Change Communication (BCC) to SHG members. At PRADAN, CNAs were known locally as *Shakti Bai*. At VAAGDHARA, they were known as *Annapurna*.
2. **Nutrition and Health BCC:** Formative research, conducted prior to project design, was used to understand the local contexts within Banswara and Sirohi districts and

assessed health behaviors, seasonality patterns, services provided by local health providers, etc. While the topics of inquiry focused on diarrhea, breastfeeding, child feeding practices, and gender roles within each of those, the formative research also revealed additional topics such as prenatal care were needed to complement an agenda focused on household nutrition. With the support of CHETNA, CNAs were trained to deliver education, or BCC messaging, to SHG members on the following modules ultimately developed by CHETNA and FFHIT: Basic Nutrition and Hygiene, Infant and Child Nutrition, Maternal and Adolescent Health, Health Services Linkages, Financial Literacy (saving/planning for health and nutrition needs). The primary 12 messages shared during the BCC are included in the Annex.

3. **Gender Sensitization and Dialogues:** Integrated into the BCC were gender messages and dialogues such as the importance of supporting women during pregnancy with additional nutritious foods and support in chores and labor. Men were also engaged in topics regarding household decision-making for supporting food and nutritional security. For example, breaking tradition, husbands and wives and their families were encouraged to eat at least one meal per day together so as to visually see the portions and foods on each other's plates. Leadership from both PRADAN and VAAGDHARA also participated in a workshop on gender in order to sensitize key project staff on the importance of gender for the RNP.
4. **Linkages to Health and Nutrition Services:** PRADAN and VAAGDHARA were both trained in a community score-card approach^{xix} which mapped and assessed the health and nutrition services (such as the ICDS, Public Distribution System which is India's food security services) being provided in their communities and the gaps in those services. Through this process, approximately 50 out of the total 330 villages (270 for VAAGDHARA and 60 for PRADAN) reached with RNP participated in the mapping exercises.
5. **Nutrition-sensitive agriculture:** While agriculture extension services were already integral to PRADAN and VAAGDHARA, emphasis was put on promotion of locally-grown, drought-tolerant nutritious foods and linking the foods being grown in kitchen gardens to the nutrients they provide for vulnerable members of households. These foods included promotion of tomatoes, green and black gram (lentils), pomegranate, dates, mangos, spinach and eggplant, etc.

Figure 2 summarizes the key interventions. Further information on project details can be found elsewhere.^{xx} In total, the RNP reached 8,131 SHG members by March 2017 and trained and engaged 1,280 CNAs.

Figure 2: RNP Project



METHODS

The RNP consisted of a formative research phase which was used to guide project development design and activities as well as an evaluative phase which consisted of a quantitative pre- and post-test assessment conducted with RNP project participants as well as a qualitative study which engaged partner staff, CNAs, project beneficiaries and their husbands as well as men and women from communities not being served by PRADAN and VAAGDHARA's SHG programs.

QUANTITATIVE

Data collection

A baseline assessment^{xxi} was conducted in May–June 2015 with 403 women belonging to self-help groups (SHGs) in Banswara and Sirohi districts of Rajasthan. A simple representative random sample was applied, stratified to include at least 20 percent of currently pregnant women, with the remaining sample consisting of mothers with children between the ages of 0–2 years. Dr. Arindam Das and other independent consultants from the Institute of Health Management Research (IHMR), developed the sampling strategy, pre-tested the survey instrument, and collected the data for the baseline survey. While the intervention was designed to reach all women clients of VAAGDHARA and PRADAN, pregnant and lactating women were targeted for the survey in order to detect changes in key variables related to breastfeeding and infant and child feeding. Researchers from Brigham Young University helped support baseline analysis.

The endline assessment was conducted between March and April 2017, with 470 women, 409 of which were SHG members and 61 of which were community nutrition advocates; 82 percent of the sample at endline were participants in the baseline. When an original participant was unable to participate in the endline, they were substituted with a woman who fit the criteria set out at baseline. This means the alternate had to be a mother with a child less than 2 years of age or be pregnant. She was randomly selected from the same group from which the original respondent came, if possible. The same team that conducted the baseline data collection, collected endline data. They also supported in the analysis of comparing baseline to endline data, which is presented in this report.

Metrics and Data Analysis

The survey assessed household poverty level, drawing on the India Progress out of Poverty Index® (PPI®) Scorecard developed by the Grameen Foundation;^{xxii} a set of health indicators^{xxiii} previously tested by Freedom from Hunger for use with microfinance institutions, which includes food security; a coping strategies index;^{xxiv} a dietary diversity index;^{xxv} nutrition, sanitation and safe water; curative care; household decision-making; use of Integrated Child Development Scheme (ICDS) services; and breastfeeding and infant/child feeding.

The International Poverty Line (IPL) \$1.25/day, IPL \$2.50/day, and National Tendulkar (hereafter: national poverty line, or NPL) indices were constructed using values from the *India*

Progress out of Poverty Index (PPI): Scorecard. Raw values were generated based on responses, summed, and then matched with probability ranges using PPI® documentation.^{xxvi}

Food security, specifically, was measured by asking the respondent to reflect on the prior twelve months, and choose among four statements that would best describe their household which were then categorized into food security categories as depicted in Table 2:

Table 2: Food Security Measures and Classifications

Statement	Food Security Category
...have enough food and of the kinds of nutritious foods we want to eat	Food Secure
...have enough food but not always nutritious food	Food insecure without hunger
...sometimes not enough food to eat and was sometimes hungry	Food insecure with moderate hunger
...often not enough food to eat, was often hungry	Food insecure with severe hunger

For analysis purposes, clients were described as either food secure or food insecure, whereas food secure households were those who answered “had enough food and of the kinds of nutritious foods we want to eat” and food insecure households combined the food insecure with no hunger, with moderate hunger, and with severe hunger categories into one category. Similarly, participants were asked to answer the same question in regards to their children, resulting in a child-level food security measure.

To calculate the Dietary Diversity Score (DDS) participants were assigned a value of 1 if they indicated they had eaten any of the foods that corresponded to a specific food group (e.g., meats, dairy, etc.) and a value of 0 if they indicated they had not eaten any of the foods that corresponded to a specific food group. Scores were summed to generate an overall index score for diet diversity (0=least dietary diversity, 9=most dietary diversity).

The Coping Strategies Index (CSI) at baseline used the original 13 variables to assess respondents’ coping behaviors during a food shortage. Examples of coping behaviors assessed included relying on less preferred or less expensive foods, borrowing food or relying on help from relatives, sending household members to beg, and limiting portion size at meal. Participants were assigned a value of 1 if they indicated that they had participated in the coping behavior and a value of 0 if they indicated they had not participated in the coping behavior. Scores were summed to generate an overall index score for coping strategies (0=least number of coping behaviors, 13=most number of coping behaviors). At the endline, additional coping strategies related to use of financial services and mechanisms were added, resulting in 18 coping behaviors. Therefore, at endline, two measures are provided: one based on the original 13 behaviors assessed at baseline and one based on 10 behaviors.

Statistical tests were run in SAS (Statistical Analysis Software) 9.4 to obtain frequencies, percentages, and means of demographic questions and to compare key variables of interest to other variables using t-tests and chi-square tests.

QUALITATIVE

The qualitative phase of the final evaluation was conducted concurrently with the endline quantitative survey. A total of sixteen focus group discussions (FGDs) and seventeen key informant interviews (KIIs) were conducted. The FGDs consisted of: women participants of the RNP project, women non-participants, males whose wives were participants and with males whose wives were not participants, as well as FGDs with the CNAs. The KIIs consisted of: interviews with project leadership and staff at PRADAN and VAAGDHARA, leadership from CHETNA, interviews with CNAs, one SHG family, and with men and women who were classified as either empowered or disempowered and were recruited from among the communities being served by RNP. In total, 237 individuals were interviewed through the FGDs and KIIs. The qualitative research was designed by Grameen Foundation and implemented by Dr. Arindam Das and independent consultants from the Institute of Health Management Research (IIHMR) as well as by D.S.K. Rao of RESULTS Education Fund and Vandana Mishra of FFHIT. Several of the interviews were conducted to understand implementation lessons and these lessons will be covered elsewhere. Findings from the qualitative that help explain the quantitative results found in this report will be provided throughout the report.

RESULTS

DEMOGRAPHICS

At endline, as with baseline, the majority of survey participants were approximately 29 years of age, Hindu (91.1 percent), part of a tribe (91.5 percent), married (97.7 percent), and had children under the age of two (86.6 percent) (Table 3). A total of 18 percent of participants were currently pregnant, which was intentional due to sampling procedures. Among participants, there was an average of 3.2 children (1.7 girls and 1.5 boys). The average age of the participants' youngest child was 1 year of age.

At baseline, the respondents reported an average of 2.4 years of membership with their SHG. Only 9 percent of the respondents had just joined an SHG at baseline. At endline, the average was 1.91. It is believed that the respondent's unfortunately interpreted this question as length of time participating in the health project and therefore, the majority used 2015 as the reference point instead of the year they mentioned in the baseline. If the year mentioned in 2015 were used as a reference point instead of what they reported in 2017, the average length of membership in the SH would be approximately 4.5 years.

Table 3: Demographics

Variables	Baseline		Endline	
	Percent	Mean	Percent	Mean
Age	27		29	
Years with SHG	-	2.4	-	1.91 (4.5)
Religion				
Hindu	99.75	-	91.10	-
Muslim	0.25	-	0.40	-
Christian	-		8.50	-
Caste or tribe				
Caste	9.18	-	8.10	-
Tribe	90.82	-	91.50	-
No caste/tribe			0.40	-
Marital status				
Single	1.49	-	0.90	
Married	96.53	-	97.70	
Separated/Divorced	0.25	-	-	
Remarried	1.74	-	-	
Widow	-		1.40	
Children <2 years old	94.43		86.00	
Number of children	-	3.21		3.16
Number of girls	-	1.72		1.70
Number of boys	-	1.55		1.46
Age of youngest child	-	1.09		1.02
Pregnancy at time of survey	21.09		18.10	

POVERTY AND FOOD SECURITY STATUS

Of the total sample population at endline, 53.8 percent lived below the IPL \$1.25/day, 85.5 percent lived below the IPL \$2.50/day and 45.7 percent live below the NPL (Table 4), as measured by the PPI. At the endline, households appeared to be slightly poorer than at the baseline. This may be due to the additions of the CNAs to the sample as well as the substitutions that were made during the endline when those at baseline could not be included again at the endline. It is also important to note that household poverty is slow to change, relative to other indicators of household well-being, such as food security.

At baseline, nearly 77 percent of the children and 79 percent of women were reported as being food insecure. At endline, there was a statistically significant improvement in food security among children and women, with an approximate 30 percentage-point improvement in both groups.

The majority of households (85 percent) served by PRADAN and VAAGDHARA report receiving food supplementation from the Public Distribution System (PDS), which is a program by the

Government of India that provides grains to vulnerable families and targets to cover at least 75 percent of the rural population at a national level and between 80-90 percent of the poorest states.^{xxvii} This question of PDS supplementation was only posed at endline, but indicates a significant level of recognized vulnerability by the Government of India for the respondents in this survey and those being served by this project.

When asked whether the household was registered as a Below Poverty Line (BPL), only 43 percent reported yes. All those who receive PDS entitlements either have to be BPL or “Antyodaya Anna Yojana (AAY) households” who are the poorest households. Therefore, it may be that respondents are aware of their PDS entitlement status, but not their particular poverty status per the government definitions of these households.^{xxviii}

Table 4. Poverty and Food Security Status

Variables	Baseline Percent	Endline Percent
IPL \$1.25/day	44.7	53.8
IPL \$2.50/day	82.4	85.5
PPI (NPL)	36.7	45.7
Child food security		
Secure	23.33	52.80*
Insecure	76.67	47.20
Female head of household food security		
Secure	21.09	52.60*
Insecure	78.91	47.40
Receive rations from the Public Distribution System		
Not at all	--	10.0
Once in a month	--	85.6
Less than once a month	--	1.0
Do not know	--	3.4
Household is registered as a Below Poverty Line (BPL) household, per the government system	--	42.8

*Statistically significant at $p < 0.05$ or greater

DIETARY DIVERSITY

During the formative research phase, the focus group discussions conducted with men and women revealed that men seemed to not want to acknowledge that women often ate last and least, even though the women talked about this as a cultural expectation. Working members of the household were typically fed prior to other family members eating. For this reason, one of the interventions designed under RNP was to encourage households to eat at least one meal per day together.

At baseline, the most consumed foods in the 24 hours prior to the survey were wheat products, followed by oil products, beans, peas, lentils, roots or tubers, and milk products and other vegetables. There was very little consumption of nuts and seeds, green leafy vegetables, eggs, meat and meat products. The average number of food categories consumed by the

respondents was 4.5 food groups; the minimum consisted of one food group and the maximum of 10 food groups.

At endline (Table 5), wheat was still the most consumed followed by oil products, but “other vegetables” like tomatoes or okra, milk, roots or tubers and beans and lentils were also highly consumed. In all but five food groups (nuts/seeds, organ meats--both domesticated and wild, vitamin A fruits, grubs and snails), there were statistically significant improvements in consumption of the food items listed. “Other vegetables”, green leafy vegetables and milk saw the largest percentage point improvements in consumption; all saw at least a 34 percentage-point improvement in consumption. One reason for the low consumption of fruits high in Vitamin A such as mango, is that mangos are not ripe and available to eat until late May or early June. The endline was conducted two months prior to when mango would be readily available for consumption.

In analysis of the dietary diversity scores, there were statistically significant improvements in the diversity of foods eaten with the average number of food items consumed improving from 4.5 food items to 7.34 foods, suggesting women and their households were consuming a more diverse and nutrient-rich diet. While there was concern, overall, that seasonality was influencing food security and the dietary diversity measures, the RNP team agreed that the months of May/June (baseline) and March/April (endline) were similar in terms of food availability given they represent the dry months prior to the rainy season where food becomes is generally more scarce. During the formative research, men and women actually perceived food scarcity differently when invited to develop a seasonality calendar where women felt June had more food scarcity and men thought March had more food scarcity.

Table 5. Dietary Diversity of Client

Variables	Baseline		Endline	
	Percent	Mean	Percent	Mean
Wheat products	98.8	-	100*	-
Roots or tubers	51.4	-	82.4*	-
Beans, peas, lentils	63.0	-	80.4*	-
Nuts or seeds	12.4	-	14.7	-
Milk products	47.6	-	82.2*	-
Eggs	6.2	-	12.2*	-

Table 5. Dietary Diversity of Client (continued)

Variables	Baseline		Endline	
	Percent	Mean	Percent	Mean
Meat	1.5	-	4.6*	-
Organ meat from domesticated animals	2.7	-	3.9	-
Organ meat from wild animals	1.2	-	0.7	-
Fish	0.3	-	4.6*	-
Grubs/insects/snails	0	-	0.7	-
Green leafy vegetables	12.7	-	57.7*	-
Yellow/orange vegetables	2.2	-	20.8*	-
Fruit high in vitamin A (mango)	23.3	-	22.5	-
Oil products	81.39	-	95.8*	-
Other vegetables	33.25	-	84.6*	-
Other fruits	7.94	-	36.2*	-
Minimum diet diversity score	-	1	-	2*
Maximum diet diversity score	-	10	-	32*
Average diet diversity score	-	4.5	-	7.3*

*Statistically significant at $p < 0.05$ or greater

At the endline, respondents were asked additional questions regarding food consumption since household nutrition was so integral to the goals set out by RNP (Table 6 below). First, respondents were asked how often household members ate eggs or how often children under two years of age or pregnant/lactating women drank milk. The results revealed that egg consumption is not regular for most people, as is indicated above in Table 5 above, with approximately a quarter of households eating eggs weekly, less than 3 percent eating eggs daily, and 40 percent eating eggs only perhaps once a month. Milk consumption, on the other hand, is more prevalent with 73 percent reporting children and/or lactating and pregnant women drinking milk daily and 12 percent drinking it weekly.

Often, the colors of the Indian flag (orange, white, green) as well as the color brown are used to communicate a rule of thumb regarding the colors of food a person should consume each day. When asked which food or color groups a person should consume, a grand majority were able to mention green (95 percent), white (95 percent), and orange/yellow (92 percent). Less than half mentioned brown foods or “other” foods.

Sixty-six percent felt that the quantity of foods eaten in their household had improved at least somewhat in the last twelve months. Among those, they attributed the increase in the quantity of food eaten mainly to their improved knowledge, or learning about the importance of eating more food. Among those who felt the quantity of food eaten had decreased or worsened, most attributed this to poor agricultural production.

Seventy percent reported that the quality of the foods eaten had improved in their household, the majority of which again attributed this improvement to learning about the importance of eating better quality foods followed by improved agricultural production and diversity of foods planted.

While household decision-making and conflict were approximately 20 percent of the reasons for both increased and decreased quantity and quality of foods eaten, this does suggest that household dynamics play an important role in food consumption, which Grameen Foundation has found elsewhere.^{xxix}

On average, most households (75%) will eat three meals a day, with most of those households (70%) still reporting to eat three meals a day during the lean season; however, there is more report of eating fewer meals during this time. Slightly over half of households will eat three meals with their family members with slightly over half reporting that the number of meals they eat together with other family members increased in the last year. As was mentioned in the project design, one activity that was encouraged was for husbands and wives to eat at least one meal together where both are present so they are able to see the amounts and diversity of foods being eaten by each person.

Table 6: Food consumption

Variable	Endline Percent
Frequency of egg consumption	
Daily	2.9
Weekly	25.2
Monthly	40.1
Only a few times a year	4.6
Never	27.1
Frequency of milk consumption by children under 2 years or pregnant/lactating women	
Daily	73.3
Weekly	11.7
Fortnightly	2.7
Monthly	1
Only a few time a year	4.9
Never	5.9
No children under age of 2/No pregnant or lactating women	0.5
In general how many different groups of foods (colors) should you eat?	
Green	95.6
White	95.1
Yellow/Orange	92.2
Brown	42.5
Other	44.5

Table 6: Food consumption (continued)

Variable	Endline Percent
Change in quantity of food consumed in last 12 months	
Worsened	3.4
Stayed the same	30.6
Improved somewhat	49.1
Improved Significantly	16.9
Reasons for improved quantity of food eaten: (n=270)	
Increased Agricultural Production	62.2
Increased Income to buy more food	32.6
Grew more diverse food	31.5
Improved knowledge (learned the importance of eating more food)	92.2
Better planning	27.8
More decision making (conversation with spouse or other)	19.6
Other improvement	3
Reasons for decreased quantity of food eaten: (n=14)	
Reduced agricultural production	64.3
Reduced income to buy more food	7.1
Lack of planning	35.7
More household conflict	21.4
Other reduction	28.6
Change in quality of food consumed in last 12 months	
Worsened	0.2
Stayed the same	29.3
Improved somewhat	54.0
Improved Significantly	16.4
Reasons for improved quality of food eaten	
Better Agricultural Production	60.1
Increased Income to buy better quality food	28.5
Grew more diverse food	44.1
Improved knowledge (learned the importance of eating better quality food)	92.0
Purchased more diverse food	28.1
Better planning (grew different foods to meet gaps in food during lean season)	26.7
More decision making (conversation with spouse or other)	14.9
Other improvement	2.4
Reasons for decreased quality of foods eaten	
Reduced agricultural production	0.2
Reduced income to buy more food	0.2
Lack of planning	0.2
More household conflict	0.2
Other reduction	0.2

Table 6: Food consumption (continued)

Variable	Endline Percent
During a typical day, the number of meals eaten	
Two	23.2
Three	75.3
Four	1.5
During the lean season, number of meals eaten	
Zero	0.2
One	1
Two	27.1
Three	70.2
Four	1.5
Number of meals where all family members eat together	
Zero	6.6
One	3.7
Two	33.5
Three	55.3
Four	1.0
Change in number of meals eaten together with family members	
Increased	53.3
Stayed the same	46.7
Reduced	0

COPING STRATEGIES

Qualitative research conducted prior to the design of RNP and the baseline study found that to cope with food insecurity, families often borrowed food and or purchased food on credit or borrowed to purchase food. However this created a burden for the future when it was time to repay creditors. Families consistently limited size of meals and number of meals provided per day, with the goal of consuming at least one meal per day. Women reported often eating the next year's seed stock in order to tie them over to the next meal. The baseline assessment found similar coping mechanisms.

The majority of households at baseline relied on less-preferred foods, borrowed food from relatives and friends, followed by consuming next year's seed stock, limiting portion sizes and reducing the number of meals per day. The minimum number of coping strategies used was zero; the maximum was ten, which suggests some used almost all coping mechanisms listed here. The average number of coping mechanisms used by the households was four.

At endline (Table 7), several coping mechanisms associated with the use of financial services were added to the Coping Strategies Index, including: borrowing money from a financial

institution, borrowing in merchant credit, using savings and receiving help from SHG members as well as household members migrating for work.

From the original coping strategies assessed, there were statistically significant reductions in the use of:

- Relying on less preferred foods
- Borrowing food from friends or relatives
- Skipping the entire day without eating
- Restricting consumption by adults in order for small children to eat
- Reducing the number of meals eaten per day.

There were statistically significant increases in the use of: consuming next year's seed stock and sending household members to beg. There was a noted increase in the use of pulling children out of school ($p=0.0548$). Consumption of next year's seed stock was interpreted as simply consuming wheat, such as for making bread. Therefore, this was not interpreted locally as a negative coping mechanism as few households grew maize or wheat as cash crops but for personal consumption. During discussions with the research team as well as the implementing organizations, it was believed that the respondents likely interpreted the concept of "begging" as asking others for help with food, such as family, SHG members, creditors, etc. It is unclear why more households reported pulling children out of school.

From the coping strategies added at the endline related to financial behaviors, there was heavy use of household savings and requesting support from other SHG members. There was very little use of borrowing money from formal financial institutions but over half of the women reported use of borrowing from merchants on credit. Over half of the respondents also mentioned that someone in the household migrated.

When assessing the minimum, maximum, and average number of coping mechanisms used, there is very little change in the number of mechanisms used with assessing the mechanisms being measured during both baseline and endline. There was a slight decrease from an average of 4 coping mechanisms at baseline to 3.4 coping mechanisms used at endline when assessing the original list.

Due to the addition of coping mechanisms assessed at endline, the average number of coping mechanisms significantly increased between the baseline and endline. This also likely explains the statistically significant decrease in the report of using "other" coping mechanisms.

Table 7. Coping Strategies

Variables	Baseline		Endline	
	Percent	Mean	Percent	Mean
Rely on less preferred foods	91.56	-	81.40*	-
Borrow food from friends or relatives	91.32	-	54.50*	-
Gather wild foods	27.05	-	30.10	-
Consume next year's seed stock	45.66	-	72.60*	-
Limit portion sizes	39.70	-	33.50	-
Send household members to eat elsewhere	7.69	-	8.80	-
Skip entire day without eating	21.59	-	12.00*	-
Restrict consumption by adults in order for small children to eat	18.86	-	9.00*	-
Feed working members at expense of non-working members	6.20	-	6.40	-
Reduce number of meals per day	35.48	-	27.40*	-
Take children out of school	3.97	-	7.10	-
Send household members to beg	4.96	-	12.00*	-
Borrowed money from financial institution	-	-	17.40	-
Borrowed money/food on merchant credit	-	-	54.00	-
Used Savings	-	-	76.50	-
Asked help from SHG members	-	-	76.80	-
Family members migrate for work	-	-	55.00	-
Other	4.47	-	0.7*	-
Minimum number of coping mechanisms used	-	0	-	0 (0)**
Maximum number of coping mechanisms used	-	11	-	12 (23)**
Average number of coping mechanisms used	-	4	-	3.4 (7)**

*Statistically significant at $p < 0.05$ or greater

** numbers provided in parentheses represent the coping mechanisms that incorporate the newly added mechanisms assessed at endline only. The numbers not encapsulated in the parentheses account for the mechanism used at endline that were the same as those measured at baseline.

USE OF INTEGRATED CHILD DEVELOPMENT SERVICES (ICDS) SCHEME BENEFITS

The majority of participants (61%) indicated that they themselves, or someone in their family, had received benefits from the ICDS center in the last 12 months at baseline and this significantly increased to 93 percent at endline (Table 8).

Among participants who had received benefits, the most commonly received services were immunizations and supplementary food at both baseline and endline, with use of supplementary food significantly increasing between baseline and endline by 5 percentage points. Use of growth monitoring, health checkups, education services and breastfeeding support all significantly increased at endline as well.

Of those who received supplementary food from the ICDS center, the majority received it monthly. While this interval of time for access to supplementary foods did not significantly

change between baseline and endline, there was a statistically significant increase between baseline and endline for weekly access but a decrease in the report of accessing food daily.

There was also a significant increase in women reporting they had received health information from the ICDS center as well as from midwives or traditional birth attendants in the past year. While not tracked at baseline due to the non-existence of the CNAs at that time, almost all respondents (95 percent) reported receiving information from the CNAs at the endline.

At endline only, respondents were asked about who the key beneficiaries of the supplemental food from the ICDS centers were. Eighty-three percent of respondents mentioned their children followed by lactating women and pregnant women. Seventy-five percent utilized ICDS center services once a month; 75 percent reported that their use of ICDS center services had stayed about the same as the prior year but 14 percent indicated they had used the services more. While the outcomes here are positive, the RNP team was skeptical that they reflected the reality given their knowledge of the inconsistent services provided by the ICDS services. This is explored further in the Discussion section.

Table 8. Use of ICDS Center Benefits

Variables	Baseline Percent	Endline Percent
Received benefits from the ICDS center in the last 12 months	60.6	92.7*
Benefits received from ICDS center		
Supplementary food	84.4	90.2*
Growth monitoring	34.8	82.1*
Immunizations	89.3	92.9
Health checkup	33.6	73.9*
Education	16.0	65.2*
Breastfeeding support	10.7	80.2*
Iron-Folic Acid (IFA) tablets	--	81.3
Received food from ICDS center at least once a month	57.8	52.5
Received food from ICDS center weekly	17.2	34.8*
Received food from ICDS center daily	15.1	3.4*
Source of information for Nutrition		
Radio	1.74	2.4
Television	6.70	6.8
Magazine or newspaper	1.49	2.2

*Statistically significant at $p < 0.05$ or greater

Table 8. Use of ICDS Center Benefits

Variables	Baseline Percent	Endline Percent
Midwife/traditional birth attendant	0.99	40.3*
Anganwadi or ICDS center	47.2	90.0*
ASHA	--	57.7
Private doctor	22.8	27.4
Community Nutrition Advocate	--	95.1
Bhopa/traditional healer	--	14.4
Other	--	14.2
Persons benefitting from supplementary food provided ICDS services (N= 358)		
Pregnant Women	--	15.6
Lactating Mother	--	30.7
Children	--	83.0
Others	--	0.8
Frequency of medical care accessed through ICDS center in past year		
Not at all	--	7.8
Daily	--	1
Weekly once	--	3.9
Monthly once	--	75.1
Less often	--	11
Do not Know	--	0.2
In the last 12 months, has your household used ICDS services more, about the same, or less?		
More	--	14.2
About the same	--	73.8
Less	--	6.4
NA	--	5.6

*Statistically significant at $p < 0.05$ or greater

WATER AND SANITATION

Tube wells or boreholes were the main sources of water at both baseline and endline, with unprotected dug wells a second-most used source (Table 9). There was a statistically significant 34 percentage-point reported increase in the treatment of water between baseline and endline; however, all reported using sedimentation and straining the water through the cloth as the form of treatment. At baseline, 97 percent of the households reported not having a sanitation facility; this significantly decreased to 80 percent at endline. While at baseline all but four people (99 percent) reported defecating in the open in the prior day, there was a statistically significant decrease of 11 percentage points at endline. This might be explained by the increase in households reporting use of a flush/pour flush toilet at endline. The RNP project did not directly aim to improve drinking water and sanitation facilities, despite the positive

changes, which suggests there were other activities likely occurring in the project areas, or these improvements are potential by-products of SHG members' focus on their health and nutrition.

Table 9. Drinking Water and Sanitation Facilities

Variables	Baseline Percent	Endline Percent
Main source of drinking water for household		
Piped water	7.9	9.8
Tube well or borehole	64.0	58.9
Dug well (protected)	1.0	2.9
Dug well (unprotected)	26.0	28.1
Rainwater	0.25	0.2
Surface water	1.0	0.1
Treats water	57	91.0*
Water treatment method used		
Sedimentation	--	29.2
Strain through a cloth	95	67.5*
Other	5	3.3
Sanitation Facility		
Flush or pour flush toilet that flushes to piped sewer system	0.0	0.7
Flush or pour flush toilet that flushes to septic tank	0.74	3.7*
Flush or pour flush toilet that flushes to pit latrine	1.24	8.8*
Pit latrine with slab or open pit	0.0	6.6
Dry latrine	0.5	0.0
No facility	97.5	80.2*
Reported having defecated in open in past day	99.0	88.5*

*Statistically significant at $p < 0.05$ or greater

DIARRHEA

Diarrhea is the third most common cause of death in children in India under the age of five and kills approximately 300,000 children each year.^{xxx} Households with poor water sources and no sanitation facilities are going to be prone to diarrhea and other ailments related to exposure to unsanitary conditions.^{xxxi} It was found during the formative research that most households consume well and hand-pump water of which is often stored in earthen containers at home. While some latrines and toilets exist, they are rarely used due to lack of water. Health practitioners will therefore frequently see children and others for cases of diarrhea. In Banswara, they report anywhere between 10-30 cases of diarrhea per month, with the higher frequency occurring during the rainy season (July, August, September). While they will often prescribe ORS, they realize it is not used or used as suggested, resulting in additional visits that will often require higher-level medical referrals and services. *Bhopa*, considered as local traditional healers, revealed that they often are visited for diarrhea and they will give the person a purified solution to drink and in rare cases, ORS will be given. They may also give lemon

water, black tea, and blackberries. The *Bhopa* shared that they are the preferred provider when seeking treatment for diarrhea in the region. One *Bhopa* indicated that only sorcery is provided as it cures 100 percent.

In the evaluation, it was found that the percent of respondents reporting a child with diarrhea in the prior two weeks was fairly consistent between baseline (21 percent) and endline (19 percent) (Table 10). Given the evaluation occurred prior to the rainy season also indicates this is likely on the lower end of reported cases for the year; however, it is greater than the state-level average of 7.4 percent of households that reported diarrhea in the two weeks preceding the survey.^{xxxii}

There was a significant increase in respondents reporting to have knowledge of ORS (35 percentage-point increase) as well as knowing they should give a child with diarrhea more to drink. This increase in knowledge is also reflected in improvement in behaviors related to treating a child with diarrhea.

There were statistically significant increases in respondents reporting to have given a child with diarrhea more to drink, eat, and have given ORS. There was a 50 percentage-point increase in use of ORS for treating a child with diarrhea. This increase surpassed the benchmark of 56.2 percent of households in Rajasthan that reported a child with diarrhea received ORS in the past two weeks.^{xxxiii}

Table 10. Diarrhea

Variables	Baseline Percent	Endline Percent
Child had diarrhea in past 2 weeks	21.1	18.6
Child with diarrhea was given more to drink	7.1	42.1*
Child was given more to eat	1.2	15.8*
Have heard of ORS	57.7	92.1*
ORS used to treat diarrhea	34.1	84.2*
Purchased ORS in past year to treat diarrhea	18.6	20.0
Knowledge about amount of liquid a child with diarrhea should be given		
More	16.4	50.9*
Same	24.8	37.9*
Less	54.1	10.3*
Don't Know	4.7	1.0*

*Statistically significant at $p < 0.05$ or greater

TREATMENT-SEEKING BEHAVIORS AND PERCEPTIONS

At baseline, the key barriers to seeking medical care for the respondents were: needing money for treatment, concern that there may be no drugs available and the distance to the facility (Table 11). By endline, there was a significant decrease in those reporting the concern about drug availability and availability of money for treatment. The concern about distance to the facility remained static, as might be expected unless new health services were made available in the villages. The concern about the availability of a female healthcare provider increased significantly between baseline and endline. There was also a notable increase in the concern

over any healthcare provider being available and having to take transport (statistically significant at the $p < 0.10$ level). This could be attributed to the education informing SHG members of their rights and what they should expect and demand from their local health services as well as focusing their attention on the direct costs for seeking health services.

Table 11. Treatment-seeking behaviors and perceptions

Variables	Baseline Percent	Endline Percent
Factors that respondents identified as big problems preventing them from seeking medical care for themselves		
Concern there may be no drugs available	58.3	45.0*
Concern there may not be any healthcare provider	39.5	46.7
Concern there may not be a female health care provider	19.9	41.3*
Finding someone to go with you	23.1	30.6*
Having to take transport	47.2	52.8
The distance to the ICDS center	--	23.7
The distance to the health facility	58.8	55.0
Getting money needed for treatment	65.8	50.9*
Getting permission to go	15.9	24.2*
Delayed medical treatment for children in past year due to cost	55.1	15.9*
Delayed medical treatment for herself (respondent) in past year due to cost	61.5	28.4*

*Statistically significant at $p < 0.05$ or greater

HOUSEHOLD DECISION-MAKING, COMMUNICATION, AND MOBILITY

At baseline, respondents were asked a series of questions related to who makes the final decisions regarding food purchases, portions served to household members, how money is spent, medical treatment for herself, and whether she can visit friends or families (Table 12). At endline, the options of mother-in-law and father-in-law were added to add greater specificity to the “other” or “someone else” answer option. At baseline, except for the question regarding who makes decisions about how much food to serve family members, husbands were predominantly identified as the key decision-makers. At endline, this dynamic was changed and in many cases, women identified themselves as the key decision-maker or they shared that this was a joint decision. For example, at baseline, 37 of the respondents indicated their husbands made the decision about food purchases; at endline, only 18 percent did, and this difference was statistically significant. At endline, respondents were even more likely to report they made decisions on how much food to serve family members, a 26 percentage-point increase. While mothers-in-law and fathers-in-law were not predominant decision-makers, together they still make up approximately 16 percent of the decisions for any of the decisions studied.

Respondents at endline were more likely to report improved mobility. There was between a 20-30 percentage-point improvement in a woman’s ability to visit the market alone, visit the health

center alone, as well as visit friends and family both within and outside of the village alone. Less than 2 percent reported not seeking healthcare due to lack of permission to seek it.

While more respondents reported to have spoken to their husband about household food needs at endline, there was no statistically-significant improvement in women reporting to have unrestricted access to income or having spent money without discussing it with their husband first.

At the endline only, additional questions were asked regarding preferences or types of health providers usually sought. While 96 percent report using formal medical providers (the majority of which are public health providers), 4 percent will consult a *bhopa*, which is the locally-known quack or traditional healer. Respondents were also asked about how often they made decisions about how much and types of food that would be served to her children without asking her husband and in-laws. Sixty-four percent reported making decisions without talking to their husbands or in-laws with 24 percent reporting they do this only some of the time and the remaining 9 percent never making these decisions without consulting first.

Approximately three-quarters of households have a mobile phone, but less than 6 percent, as measured at the endline, of the respondents have their own phone. This percentage is much lower than the numbers reported for the state of Rajasthan where approximately 34 percent of women in rural areas reported to have a mobile phone that they themselves use.^{xxxiv}

Table 12. Household Decision-making, Communication, and Mobility

Variable	Baseline Percent	Endline Percent
Decisions about Food Purchases		
Wife decision	19.6	8.8*
Husband decision	36.7	18.3*
Both	24.8	48.7*
Someone else	18.6	7.1*
Mother-in-law	-	8.3
Father-in-law	-	8.8
Decisions about how much food to serve family members		
Wife decision	40.5	66.3*
Husband decision	30.8	3.2*
Both	11.7	18.8*
Someone else	17.1	1.2*
Mother-in-law	-	7.7
Father-in-law	-	2.8

Table 12. Household Decision-making, Communication, and Mobility (continued)

Variable	Baseline Percent	Endline Percent
Decision on how money is spent		
Wife decision	5.2	14.9*
Husband decision	71.2	15.9*
Both	23.6	51.1*
Someone else	-	0.2
Mother-in-law	-	2
Father-in-law	-	4.2
NA	-	11.7
Decision on whether she seeks health care for herself		
Wife decision	3.5	8.6*
Husband decision	69.5	28.4*
Both	27.1	55.3*
Someone else	-	0.0
Mother-in-law	-	5.4
Father-in-law	-	2.3
Decision on whether she can visit family or friends		
Wife decision	4.2	10*
Husband decision	63.8	25.2*
Both	32	51.6*
Someone else	-	0
Mother-in-law	-	8.6
Father-in-law	-	4.4
Spoke to husband in past 6 months regarding food needs	71.2	78.5*
Have unrestricted access to income	69.4	70.9
Spend money most of the time without discussing with husband first	27.5	32.3
Mobility		
Can go to market alone	28.3	73.1*
Can go to health facility alone	23.3	62.1*
Can visit friends or family within the village alone	37.7	62.8*
Can visit friends or family outside of the village alone	11.9	40.1*
Where medical treatment is sought most often		
Formal medical provider from the public health sector	--	81.4
Formal medical provider from the private health sector	--	14.7
Bhopa/traditional healer/quack	--	3.7
Other	--	0.2

*Statistically significant at $p < 0.05$ or greater

Table 12. Household Decision-making, Communication, and Mobility (continued)

Variable	Baseline Percent	Endline Percent
Did not seek medical care for self or children due to lack of permission from other household member	--	1.7
Frequency of making decisions on what will be fed to children without asking husband or in-laws		
Most of the time	--	63.8
Some of the time	--	24.4
Never	--	9.3
NA	--	2.4
The household has a mobile phone	76.4	70.2
The respondent has her own mobile phone	--	5.9

*Statistically significant at $p < 0.05$ or greater

SAVINGS

Table 13 below shows fairly high levels of planning and saving at baseline for future health and food expenses, as well as statistically significant improvements in those behaviors at endline. Eighty percent of respondents mentioned they both set money aside for savings in the last six months as well as set money aside for future food expenses at endline, up approximately 15 to 20 percentage points, respectively. Almost all respondents (92 percent) mentioned setting aside grain for food or health expenses, which represents an approximate 18 percentage point increase from baseline. While still relatively high at 80 percent at endline, there was no significant change in saving in livestock for future food or health expenses.

At the endline only, respondents were asked an additional question related to how their savings have changed in the past year. Fifty-two percent indicated their savings had increased; 27 percent reported they had about the same amount as they normally have, and 21 percent reported that their savings had decreased. Sixty-seven percent reported taking a loan from their SHG in the past year while 22 percent reporting taking a loan from any person to cover food or health costs in the past year and 11 percent took a loan from a formal financial institution to cover food or health costs.

Table 13. Savings Behaviors

Variables	Baseline Percent	Endline Percent
Set aside savings for health in past 6 months	65.5	80.0*
Saved or set aside any money to cover future food expenses in past 6 months	61.8	80.4*
Saved in grain for food or health expenses in past 6 months	74.9	92.4*
Saved livestock to cover any future food or health expenses in past 6 months	75.7	79.5

*Statistically significant at $p < 0.05$ or greater

Table 13. Savings Behaviors (continued)

Variables	Baseline Percent	Endline Percent
In the past 6 months, has the amount of money you have saved generally, increased, stayed the same, or decreased?		
Increased	--	51.6
Stayed the Same	--	27.1
Decreased	--	21.3
Have taken any type of loan from SHG in last 12 months	--	66.7
Have taken any type of loan from a person in last 12 months to cover food or health expenses	--	21.8
Have taken any type of loan in last 12 months from a formal financial institution to cover food or health	--	10.5

*Statistically significant at $p < 0.05$ or greater

BREASTFEEDING & CHILDBIRTH

During the formative research, questions regarding who makes and how decisions are made regarding breastfeeding and child feeding were explored with health practitioners as well as with women in the project areas. Myths were captured that demonstrated misunderstandings regarding breast milk as well as barriers created by members of the family. For example, mothers shared that one reason women discontinue breastfeeding is due to mothers who work on their farms believe that if their breast milk is warm and hot, that the baby would equally become hot and feverish. Health workers acknowledged that while a woman is counseled to breastfeed within the first hour, this is often a challenged by beliefs held strong by generations of women that the first milk can cause indigestion for the baby, that it lacks nutritional value, and the perceived importance of cleaning the mother and the baby prior to breastfeeding. Also, illnesses and weaknesses (such as anemia) among mothers is also a reason why breastfeeding is often not immediate as there is a delay in milk arrival or poor quantities of milk. RNP education worked to dispel these myths by helping mothers understand the nutritional value of colostrum and to remember the rules of thumb related to exclusive breastfeeding such as a child needing only breast milk or formula for the first six months.

At endline (Table 14), almost all respondents (91-92 percent) knew that a child should be initially breastfed within the first hour of birth as well as exclusively for six months. For initial breastfeeding, this represents a 20 percentage-point improvement over the baseline; for exclusive breastfeeding, a 54 percentage-point improvement over the baseline level of knowledge. When asked if any of their children under the age of 12 months had been initially breastfed, 83 percent reported their infants were initially breastfed within the first hour, representing a statistically-significant increase of 36 percentage points between baseline and endline.

When respondents were asked whether they gave the child something other than breastmilk in the first three days of life, there was a statistically significant decrease of 53 percentage points in those reporting to have given anything other than breastmilk. At baseline, 66 percent reported to have given something other than breastmilk; at endline, only 13.4 percent did. If

something other than breastmilk was given, respondents reported to have given milk, water, honey, or Janam Ghutti⁵. There was a decrease in those between baseline and endline that reported to have given milk or water, but an interesting increase in the use of honey and Janam Ghutti.

When asked if their child had been exclusively breastfed, 91 percent reported to have exclusively breastfed their child, representing a statistically significant improvement of 54 percentage points for exclusive breastfeeding between baseline and endline. When asked if they gave other liquids and foods during the first six months of life, there was a decrease in the use of water, although a little under half still reported to have given water, as well as a decrease in use of powdered milk. However, there were statistically-significant increases in the reported use of mashed potatoes or other tubers, yogurt, mashed mangos and green leafy vegetables.

When asked about when soft or semi-soft foods should be introduced to infants, 81 percent knew at endline (an increase of 54 percentage points from baseline) that these foods should be introduced between 6 and 8 months. There was also a statistically significant increase in those that knew a child between the ages of 6 and 8 months should consume at least 2 food groups per day. Almost all respondents (99 percent) knew this at endline, representing a 66 percentage-point increase over the baseline.

Table 14. Breastfeeding and Complementary Foods

Variable	Baseline Percent	Endline Percent
Knowledge		
Say a child should be breastfed immediately or within the first hour	72.0	91.9*
Say a child should be breastfed exclusively for 6 months	37.0	91.2*
Know a mother should begin giving a child soft and semi-solid foods between 6 and 8 months	26.3	80.7*
Know a mother should give a 6-8 month old at least 2 food groups per day	32.8	98.8*
Behaviors		
Households with a child 12 months of age or younger	46.7	31.1*
Children (12 months or younger) ever breastfed	99.5	100
Children (12 months or younger) breastfed within first hour	47.1	82.7*

*Statistically significant at $p < 0.05$ or greater

⁵ This is an herbal over-the-counter preparation that is often used for colic, constipation, and other ailments that infants face. It is generally not recommended for infants because some preparations contain honey, which is not recommended for children under 1 year of age.

Table 14. Breastfeeding and Complementary Foods (continued)

Variable	Baseline Percent	Endline Percent
Children (12 months or younger) given something other than breastmilk in first 3 days of life	66.0	13.4*
Child given milk in first 3 days of life	65.3	41.2*
Child given plain water in first 3 days of life	53.2	23.5*
Child given sugar/sugar water in first 3 days of life	0.81	0
Child given infant formula, fruit juice, or gripe water in first 3 days of life	0.0	5.9*
Child given tea in first 3 days of life	4.0	5.9
Child given honey in first 3 days of life	11.3	29.4*
Child given Janam Ghutti in first 3 days of life	0.81	23.5*
Child given something else ("Other") in first 3 days of life	11.3	5.9
Percentage of children (12 months or younger) breastfed exclusively for 6 months	27.7	36.2
Child was given infant formula in first 6 months of life	12.2	11.8
Child was given water in first 6 months of life	75.0	43.3*
Child was given juice in first 6 months of life	6.4	9.4
Child was given milk, such as tinned, powdered or fresh animal milk, in first 6 months of life	52.7	22.0*
Child was given clear broth in first 6 months of life	1.1	0.8
Child was given packaged baby food in first 6 months of life	0.5	3.1
Child was given yogurt in first 6 months of life	0.0	5.5*
Child was given commercially fortified baby food (Celerax or Farex) in first 6 months of life	2.1	4.7
Child was given bread, chapati, rice, noodles, biscuits, or any other foods made from grains in first 6 months of life	26.0	18.9
Child was given pumpkin, carrots, squash or sweet potatoes that are yellow or orange inside in first 6 months of life	2.1	6.3
Child was given white potatoes, white yams, manioc, cassava, or any other foods made from roots in first 6 months of life	1.6	9.4*
Child was given dark green, leafy vegetables in first 6 months of life	1.1	10.2*
Child was given ripe mangoes, papayas, cantaloupe or jackfruit in first 6 months of life	1.6	7.9*

*Statistically significant at $p < 0.05$ or greater

At endline (Table 15), additional questions were added to the survey instrument to develop a deeper understanding of childbirth preferences given the intervention ultimately included more education on institutional birth and prenatal care than was originally conceived. For this reason, the questions below were not posed at the baseline.

Of the households that had a child under the age of 12 months (31 percent), the majority were born in a hospital (87 percent) and 11 percent were born at home. If they were born in the hospital, most (79 percent) also were availing *Janani Suraksha Yojana* (JSY, or *Mother Security Scheme* in English)^{xxxv} benefits. JSY benefits consist of the financial assistance of Rs. 500 per birth to pregnant women who are below to “below poverty line” (BPL) households. The goal of JSY is to reduce maternal and neonatal mortality by incentivizing poor households to give birth in formal medical institutions. The last National and Family Health Survey (NFHS-4), indicates that for Rajasthan, 84 percent of pregnant women gave birth in an institution and approximately 56 percent of them who gave birth in an institution had received JSY benefits.^{xxxvi} This suggests that the SHG members participating in this study are consistent with the state-level statistics.

If they delivered their child at home, most respondents said they were the ones to make this decision; less than 40 percent of those households had the childbirth attended by a dai (midwife) or auxiliary nurse midwife (ANM).

Out of all women who had given birth in the prior twelve months, 37 percent indicated they incurred no out-of-pocket expenses. Of those who incurred some expense (63 percent), the majority incurred less than 1000 rupees (~USD 15)⁶; almost 9 percent of the respondents incurred more than 5000 rupees (~USD 78), which is likely indicative of complicated childbirth or cesarean section. NFHS-4 data suggests the average out-of-pocket expense per delivery in a public health facility was 3,052 rupees (~USD 47).

Table 15: Childbirth

Variable	Endline Percent
Where was the child born? (N= 127)	
Hospital	87.4
Home	11
Other	1.6
If born in hospital, reported receiving JSY benefits.	78.8
If delivered at home, whose decision was it to deliver at (N=13)	
Your own	37.5
Husband	12.5
Mother-in-law	18.8
Other	31.2
If delivered at home, birth was attended by an ANM or Dai (midwife)	
ANM	6.2
Dai	31.2
Other	62.5

*Statistically significant at $p < 0.05$ or greater

⁶ 1 USD = 64 as of September 5, 2017 via
<http://www.xe.com/currencyconverter/convert/?Amount=1&From=USD&To=INR>

Table 15: Childbirth (continued)

Variable	Endline Percent
Amount of money paid out-of-pocket for the delivery of child	
There were no out-of-pocket costs (0 Rupees)	37.0
Less than 1000 Rupees	25.2
Between 1001-2000 Rupees	8.7
Between 2000-3000 Rupees	5.5
Between 3000-4000 Rupees	3.9
Between 4000-5000 Rupees	6.3
More than 5000	8.7
Don't know	4.7

*Statistically significant at $p < 0.05$ or greater

ATTITUDES AND DOMESTIC VIOLENCE

Fifty-four percent of respondents felt very or somewhat confident they could afford nutritious foods for all of their family members at baseline; at endline, 86 percent felt very or somewhat confident, with the majority, feeling somewhat confident (Table 16). These represent statistically significant improvements over the baseline. There were also significant increases in feeling hopeful, with almost all feeling at least somewhat hopeful, but the majority feeling very hopeful.

While there was a significant increase in those who felt very satisfied with their life, the majority are only somewhat satisfied. At baseline, ninety-three percent of respondents were either some or most of the time afraid of their husband or partner in the past year suggesting domestic violence was likely highly prevalent; at endline, only 5 percent reported being afraid most of the time and 65 percent were somewhat afraid, representing statistically significant decreases compared to the baseline. Only 2 percent at endline felt that a husband was justified in hitting or beating his wife, representing an 18 percentage-point decrease from the baseline.

Table 16. Attitudes and Domestic Violence

Variables	Baseline Percent	Endline Percent
Feels very confident that she can afford nutritious foods	15.4	33.3*
Feels somewhat confident that she can afford nutritious foods	38.7	52.8*
Felt hopeful in the past year (very)	25.6	66.5*
Felt hopeful in the past year (somewhat)	59.8	31.5*
Feels very satisfied with life she leads	9.7	28.6*
Feels somewhat satisfied with life she leads	52.1	62.8*
Feels a husband is justified in hitting or beating his wife	20.1	2.2*
In the last 12 months, was afraid of husband/ partner (most of the time)	17.4	4.6*
In the last 12 months, was afraid of husband/ partner (some of the time)	75.4	64.5*

*Statistically significant at $p < 0.05$ or greater

AGRICULTURE AND KITCHEN GARDENS

Kitchen Gardens

At the endline only (Table 17), questions were asked about the household's kitchen gardens and agricultural practices. These were not asked at baseline given the limited knowledge of the agricultural programs that would ultimately interact with RNP overall.

Sixty-eight percent of households reported having a kitchen garden. Of those without one, the main reason was due to lack of water. If they had a kitchen garden, most grew tomatoes, green chili, green spinach, fenugreek and coriander leaves and ladies finger (okra). Most had been growing the vegetables they noted for more than a year, but approximately 14 percent had started growing the vegetables in the past year. However, 92 percent indicated they had increased the types of vegetables grown in their garden, suggesting that their interpretation of the question about how long they had been growing the noted vegetables is likely reflective of how long they had maintained a kitchen garden generally. Of those who noted growing new vegetables, most noted they introduced leafy green vegetables or other vegetables (such as tomatoes) to their garden. About half mention planting fruit trees for the first time.

When respondents were asked about the value the new kitchen garden vegetables added to their food security, the majority mentioned improved diversity in their diet, reduced costs for purchasing these items in the market, and increased quantity of food throughout the year. Thirty percent mentioned earning an income from these vegetables due to their selling of them in the market.

While the majority of respondents (64 percent) indicated decisions regarding the kitchen garden were made jointly with her husband, 18 percent indicated their husband only and 10 percent indicated their father-in-law made the decisions regarding the garden. Eighty-eight percent of the respondents shared they had spoken to someone in their household regarding starting or improving upon the garden in the past year.

Income-generating crops

Fifty-eight percent of the households reported growing crops as an income source. Of those that grow crops for income, most grown grains, vegetables or lentils. Eighty-six percent feel that their production has increased in the last year and 73 percent reported that the amount they grow is sufficient to cover household food consumption needs for the entire year; however, 27 percent will periodically or often have insufficient production and will have to resort to purchasing grains from others to meet household needs. While 57 percent indicate they make joint decisions with their husband regarding these crops, 34 percent of these decisions are made by others, such as her husband or in-laws. Only 7 percent of respondents indicate they make the key decisions related to these crops.

Livestock

Ninety-two percent of households raise livestock of which the majority are oxen followed by goats and chickens. Eighty-five percent raise these livestock to eat (likely referencing the goats and chickens since oxen are usually raised for labor purposes such as plowing fields), 71 percent raise livestock as an income-generating activity, 33 percent sell any by-product, such as milk and eggs, and 82 percent report raising these livestock to also sell in the time of crisis.

Table 17: Agriculture and kitchen gardens

Variable	Endline percent
Kitchen Gardens	
Household has a kitchen garden (poshanwadi)	67.7
Reasons for lack of kitchen garden (N=132)	
No land/not sufficient land or space to grow one	8.3
Not enough time	0.8
Lack of water	89.4
Other	1.5
Products of kitchen garden (N=277)	
Green spinach	80.1
Fenugreek leaves	82.7
Coriander leave	85.9
Pigeon pea	62.8
Green Chili	93.1
Tomatoes	93.9
Eggplant (brinjal)	88.4
Carrots	58.5
Colocasia (taro root)	30.3
Balore (beans)	63.5
Pumpkin	52.3
Ladies finger (okra)	88.1
Potatoes	52.0
Radish	63.5
Beans	50.1
Gourd	65.3
Papaya	55.2
Length of time noted vegetables have been grown in the garden	
For past 6 months	1.8
For past year	13.0
For past two years	44.4
For past 3-4 years	27.8
For past 5 years or more	13.0
Change in number (types) of vegetables grown in kitchen garden in past year	
Increased	91.7
Stayed the same	6.5
Decreased	1.8

Table 17: Agriculture and kitchen gardens (continued)

Variable	Endline percent
Types of new vegetables, spices introduced into kitchen garden	
Spices or herbs	46.2
Leafy vegetables	82.3
Other than leafy vegetables	75.1
Fruit trees	50.9
Did not introduce any new vegetables	9.4
How new crops/vegetables added value to household food security	
Food diversity	73.6
More food to eat throughout the year	77.6
Saved money on buying vegetables from market	78.7
Earned money on selling vegetables in market	38.6
Other	0.7
Decision-making regarding kitchen garden	
Mainly her decision	1.4
Mainly husband's decision	18.1
Joint decision	63.5
Someone else makes the decision	0.4
Mother-in-law	5.8
Father-in-law	10.8
Has spoken with spouse or other household decision makers regarding starting/improving kitchen garden	87.8
Income-generating crops	
Does your household have any crops that it grows and sells for income? (% yes)	57.5
Crops grown to sell for income (n=235)	
Vegetables	57.0
Lentils	43.4
Grains	75.3
Cotton	34.9
Other	23.8
Change in agricultural production in the last year	
Increased	86.4
Stayed the same	8.5
Decreased	3.0
NA	2.1

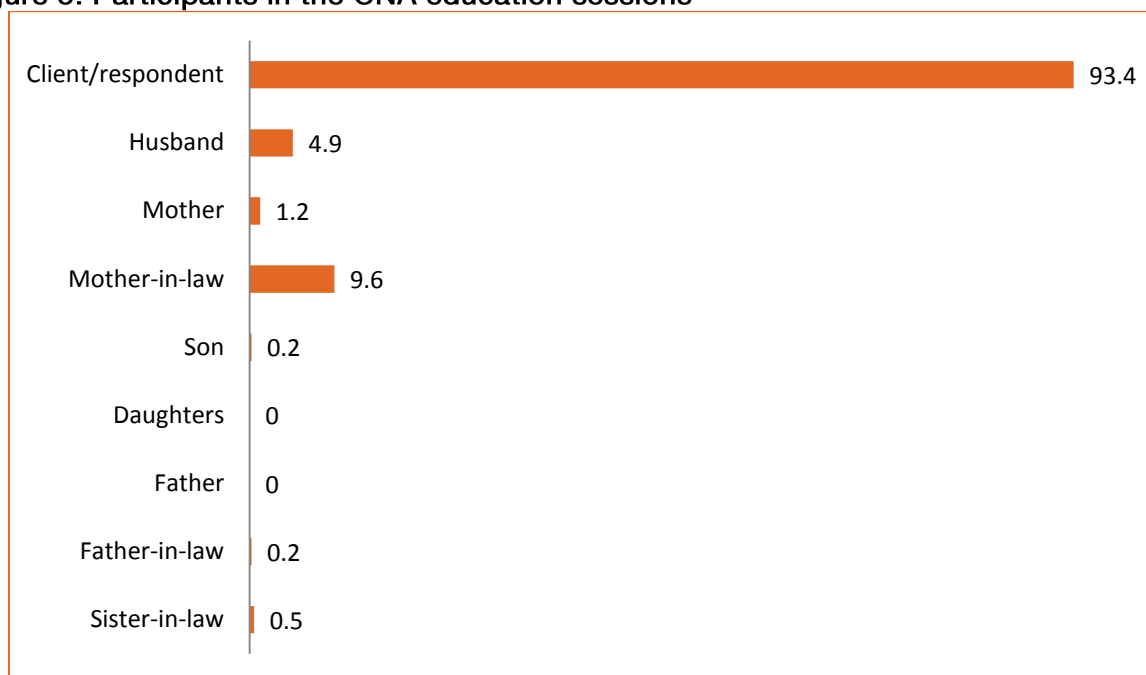
Table 17: Agriculture and kitchen gardens (continued)

Variable	Endline percent
If growing any kind of grains (staple food crop), capability to produce enough for household consumption:	
Always have enough for 12 months	72.8
Most of the time has enough for 12 months, sometimes has to buy grain from others	19.2
Usually not enough and have to often buy grain from others	7.5
NA	0.5
Who generally makes the decisions regarding these crops	
Mainly her decision	7.7
Mainly husband's decision	17.4
Joint decision	57.0
Someone else makes the decision	0.4
Mother-in-law	6.8
Father-in-law	9.4
Other	1.3
Livestock	
Household raises livestock	91.9
Types of livestock raised (n=376)	
Oxen/Cattle/Buffalo	86.4
Goats	79.5
Chickens	43.9
Sheep	0.8
Other	4.6
Raise livestock to consume/eat	84.6
Raise livestock to sell as an income generating activity	70.2
Sell bi-products from livestock for income (for example, milk or eggs)	33.2
Raise livestock to sell in times of crisis (ie. selling chickens to cover medical expenses)	82.2

PROJECT PARTICIPATION

When asked if anyone within the household had participated in education sessions provided by a CNA, 99.3 percent indicated at least one person had. When asked whom (Figure 3), the majority were the respondent/client herself, followed by a mother-in-law; 5 percent of respondent's husbands participated in the education as well. The average number of sessions attended were 16 out of 25 possible sessions.

Figure 3: Participants in the CNA education sessions



The majority of respondents reported that they found most project components to be very useful (Table 18), meaning they learned something new that they could apply in their own lives. The area that seemed to have the least amount of utility was about raising livestock and this may have been due almost all of the respondents already raising livestock. The content area that was found to be the most useful was regarding the use of iron pots for cooking food as one means to help curtail anemia as well as the sessions on nutrition, generally.

Table 18: Satisfaction with education and project components

Variables	Endline percent			
	Very useful	Somewhat useful	Not useful at all	Not applicable
Nutrition (sessions on diversity of the diet, important foods to eat, etc.)	92.9	6.4	0.2	0.5
Kitchen gardening for improved nutrition	87.3	11.7	0.2	0.7
Drying of extra vegetables for ensuring food availability during lean period	80.4	15.6	2.4	1.5
Raising livestock	74.1	22.2	3.2	0.5
Access to health and nutrition services (interactions with ICDS, anganwadi, pre-natal care, PDS services)	78.5	18.6	2.2	0.7
Infant and child feeding	86.6	12	1.2	0.2
Use of ORS during diarrhea and giving more liquid to the child	90.0	7.8	1	1.2
Use of iron pot for cooking food to curtail anemia	95.6	2.4	0.7	1.2

Table 18: Satisfaction with education and project components

Variables	Endline percent			
	Very useful	Somewhat useful	Not useful at all	Not applicable
Hand-washing with soap to prevent infection	84.1	11.2	4.2	0.5
Intra-household relationships (sharing meals together, sharing workload, etc.)	86.8	11	1.7	0.5
Saving for health and food expenses	80.2	17.4	1.7	0.7

DISCUSSION

The Rajasthan Nutrition Project appears to have played an important role in the change in knowledge and behaviors among tribal women in rural Busara and Sirohi districts of Rajasthan, India. While this project evaluation has its limitations, due to lack of a control group and the lack of randomized assignment of the treatment to ensure we could attribute the impacts to RNP, the results are still promising. Knowing there would be no comparison group, the RNP project team established targets that were desirable to reach. This section will assess how well RNP was able to achieve those targets and will also integrate similar outcomes to assist in the triangulation of the findings.

Table 19 summarizes the targets (the majority of which were to reach the state-level average given the lower starting points measured in each district) as well as the baseline and endline averages for the metrics. While most of the results in this report have focused on the project average (and did not disaggregate by district), in the table below, the district averages are provided to help remain consistent with the way the data was presented in Table 1 earlier in the report.

All targets set by the RNP project were met, if not exceeded. One indicator, the percent that reported breastfeeding their newborn within 1 hour of birth, was already greater than the NFHS-4 target at baseline. Each of the impact areas will be further explored below.

All targets set by the RNP project were met, if not exceeded.

Table 19: RNP Targets and Baseline and Endline Averages

Statistic	India National	Rajasthan	Banswara District	Sirohi District
% who breastfed within 1 hour of birth				
NFHS-4	41.6%	28.4%	37.8%	28.6%
RNP Baseline	—	47.1%	42%	48%
RNP Endline	—	82.7%	73.9%	84.6%
% who exclusively breastfed first 6 months				
NFHS-4	46.3%	32.1%	36.4%	42.6%
RNP Baseline	—	27.1%	27%	28%
RNP Endline	—	36.2%	39.1%	35.6%
% who had a child with diarrhea that used ORS				
NFHS-4	50.6%	56.2%	n/a	59.4%
RNP Baseline	—	34.1%	42%	33%
RNP Endline	—	84.2%	88.9%	82.8%
% food secure				
NFHS-4	—	—	—	—
RNP Baseline	—	21.1%	24%	20%
RNP Endline	—	52.6%	65.7%	48.0%
% utilizing ICDS Services in last 12 months				
NFHS-4	—	—	—	—
RNP Baseline	—	60.6%	79%	54%
RNP Endline	—	92.7%	100%	90.1%

BREASTFEEDING AND CHILD FEEDING

There were improvements in the rate of those breastfeeding initially and exclusively for six months. The data also show related decreases from baseline to endline in mothers reporting to have given something other than breast milk during initial feeding as well as decreases in the reporting of mothers giving other liquids or foods to a child under the age of six months. However, 13 percent of mothers still reported giving something other than breast milk to their infant. It is very likely that that given the high rate of usage of Janam Ghutti and honey, mothers are still highly influenced by practices that have occurred for generations and are often based on myths and marketing. Janam Ghutti is an herbal tonic marketed as a treatment for colic and digestion in infants. The marketing in Amazon.com^{xxxvii} says that Janam Ghutti: *“Acts as a cooling and soothing agent for the stomach and has high nutritive value; It is an expectorant, laxative and blood purifier, and is useful in fevers and colds arising due to thrush in children; Prevents flatulence, indigestion, colic dyspepsia & diarrhea; Helps in toning up the digestive system of the infant; Goodness of traditional Ayurvedic ingredients like Anjeer (fig)⁷, Kishmish (raisins), Ajwain (caraway seeds), etc.”* Giving newborn infants honey is also

Women who initiated breastfeeding within one hour after delivery were more likely to be food secure, receive growth monitoring and breastfeeding support from the Integrated Child Development Services (ICDS) centers, and have correct knowledge of how long a mother should wait to breastfeed after delivery.

promoted by elders as a treatment to strengthen an infant's intestines but brings the risk of botulism in children under the age of one.^{xxxviii} However, parenting^{xxxix} and medical^{xl} websites equally debunk the myths that gripe water, Janam Ghutti, and honey are appropriate for infants given the fact there is no medical

proof that these indeed reduce colic or other digestive ailments in babies and can actually cause the very digestive ailments parents are trying to avoid.

Analysis conducted with the baseline data,^{xli} suggests that women who initiated breastfeeding within one hour after delivery were more likely to be food secure, receive growth monitoring and breastfeeding support from the Integrated Child Development Services (ICDS) centers, and have correct knowledge of how long a mother should wait to breastfeed after delivery. For women who exclusively breastfed for six months, neither interaction with the ICDS center or food security status were associated; however, gender dynamics mattered much more. Women who exclusively breastfed were more likely to have spoken to their spouse about household food and nutrition needs, have unrestricted access to any income and make joint decisions with their husband about money and health care. Shroff et al.^{xlii} have also found that mothers in India with higher financial autonomy within the home are more likely to exclusively breastfeed. Kaushal et al.^{xliii} have suggested that although mothers in rural Haryana, India in general had better knowledge of appropriate breastfeeding behaviors, grandmothers and

⁷ Definitions added by author.

sometimes the mothers-in-law would determine when a child was breastfed and complementary foods were introduced. While mothers and mothers-in-law may be present in the self-help groups supported by PRADAN and VAAGDHARA and receive the breastfeeding education, men typically are not included in this education. Research from neighboring Pakistan^{xliv} suggests that fathers can play an important role in the breastfeeding decisions, but require knowledge on how to provide optimum support to their wives. Given the positive role that spousal communication and a woman's autonomy in the home plays on breastfeeding behaviors, future breastfeeding education projects should consider including husbands.

DIARRHEA AND USE OF ORS

While the prevalence of diarrhea was fairly constant between baseline and endline, there were statistically significant improvements in knowledge of how to treat diarrhea with increased liquids, food, and ORS. While these improvements are important and the fact that still only 50 percent of respondents reported that a child should be given more to drink compared to the an 80-percent target that Grameen Foundation sets for knowledge indicators, suggests there is still room for improvement and for understanding the reasons why this rule of thumb is hard to understand or perhaps more importantly, reflects a different barrier. Other research has shown

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that caretakers will actually reduce liquid and food consumption due to beliefs that the increased liquid will increase the number of loose stools, “social norms advised ‘to keep bowels at rest’, or that a sick child’s refusal to drink more or eat more was ‘normal.’^{xlv}

Using unpublished baseline data analysis, it was found that of those who did increase the liquid intake of children with diarrhea, 89 percent reported knowing it was important to give a child more liquid, suggesting a strong link between knowledge and behavior change ($p < 0.0001$). In addition, as with the finding regarding initial breastfeeding rates, there was increased reported usage of ORS if the household also mentioned accessing services of the ICDS center. Of those who used ORS, 82.76% received benefits from the ICDS center ($p = 0.0182$). In contrast to the breastfeeding behaviors, at baseline, the data showed strong relationships between male-dominated decision-making and use of ORS. For example, of those that used ORS, 41.38% were in households where the husband or father made decisions alone about what foods to purchase and similarly whereas 37.93% were in households where the decision was made by both the father and mother. Of those that used ORS, 67.86% were in a household where the husband made most of the decisions about how money was spent and 32.14% made the decision together. The formative research found something similar. For example, when asked about treatment of diarrhea, men were more likely than women to mention that ORS was used at all.

Decisions to seek treatment was found to be dominated by the male head of the household, whether this is the father, father-in-law, or husband. Given there was a statistically significant increase in women reporting to be able to visit a health care facility alone as well as improvements in joint decision-making at endline compared to baseline, it would be interesting to see how much decisions regarding use of ORS continue to be dominated by male decisions.

Finally, while there was a statistically significant decrease in respondents reporting defecating in the open (from 99 percent to 86 percent at endline), the importance of understanding how to treat diarrhea will continue to be important given the link between open defecation, poor sanitation, and diarrhea.^{xlvi}

FOOD SECURITY

Measures of food security, use of Below Poverty Line (BPL) government social support and supplemental feeding programs, dietary diversity and the coping strategies index were all measures used to understand both the prevalence of food security, the nutritional value of food consumed as well as how households coped with food insecurity. In addition, at the endline, questions were asked to measure the respondents' perceptions about how their food consumption changed in the past year. Based on the measure of food security, RNP achieved its target of improving the food security of the respondent and her children. Respondents experienced a statistically-significant improvement in food security of 32 percentage points. Their children saw a very similar improvement of the same magnitude. This improvement was reflected in the improved dietary diversity as well as the reduction in the use of particularly negative coping mechanisms such as skipping an entire day without food, reducing the size of meals, and relying on less-preferred foods. While only asked at the endline, there was a high percentage of respondents who reported using savings (77 percent) and asking support from self-help group members (77 percent) to help cope with food insecurity.

The improvement in food security was reflected in the improved dietary diversity as well as the reduction in the use of particularly negative coping mechanisms such as skipping an entire day without food, reducing the size of meals, and relying on less-preferred foods.

When asked at endline about whether households felt the quality and quantity of their foods had increased, stayed the same, or worsened, the majority felt it had at least improved somewhat (60 percent) and the majority of those who felt it had improved attributed this improved knowledge of the importance of diet and foods to eat (92 percent), 63 percent felt it was due to improved agricultural production and about 20 percent due to improved decision-making at home. The inverse was felt if they reported having decreased production: it was due to poor agricultural production, for example, and increased conflict at home. Also, 53 percent of respondents reporting eating more meals together as a family in the past year.

Given the importance of food security and nutrition for this project, much of the qualitative follow-up assessment probed into food consumption patterns. Most noted in the “new practices” reported by the respondents, inclusive of both beneficiaries and the CNAS, was the practice of eating at least one meal together.

One member of VAAGDHARA, named Karma, aged 50 shared: *“Before RNP, as was custom, the male members would eat first and as a housewife, you ate last. Her husband would not even be aware of what his wife ate. My husband never knew that I’d only eat chappathi (Indian flat bread) without any vegetables. It never occurred to me that I should make this an issue until I attended the RNP trainings. Only after the trainings, I discussed this matter with my family, including my husband, and insisted we should all eat together. As a result, nowadays, we eat breakfast and dinner together. I’m now getting my legitimate share of food.”* Amuli, a 30-year old mother from the same group shared, *“I used to cook only a little, and not everyone would have enough to eat. Now we cook enough so that everyone gets to eat well enough.”* Lali Bai, a 34-year member of a PRADAN SHG also shared, *“I realized after the trainings that you don’t have to be rich to eat nutritious foods. It is very much possible to source nutritious foods out of locally available fruits and vegetables and grains at affordable prices. I now mix*

“My husband never knew that I’d only eat chappathi without any vegetables. It never occurred to me that I should make this an issue until I attended the RNP trainings.” –Karma, VAAGDHARA client

atta (flour), dhal (lentils), and dried vegetables for use during the summer, cook food in an iron pot and feed myself and my family with fruit more often.” Many of the SHG members shared that by eating at least one meal per day with their

households, they get their equitable share of food, *“previously, we were never sure what food would remain for ourselves.”* *“Men do not know anything. We take the decision of what to cook. Now women have started cooking in iron pots, eating daal, green vegetables, now we produce food and eat it. We are illiterate; we did not know what to eat.”*

Even the husbands seemed to appreciate the new information on nutrition. When asked what they thought was the most significant change that had occurred while

"I never used to wait for the other family members to join me. Now I religiously wash my hands and eat along with the rest of the family." – Husband of Geeta, PRADAN client

their wives participated in RNP, they shared, *"her knowledge improved, we learned if we get good food, we will not fall ill."* An interview conducted with PRADAN member and CNA, Geeta, and her husband revealed some intra-household dynamics. Her husband shared that prior to his wife participating in the RNP education, he used to eat immediately after returning from the fields without even washing his hands. *"I never used to wait for the other family members to join me. Now I religiously wash my hands and eat along with the rest of the family."* Geeta is happy that by eating together, communication between them has improved enormously.

Food security status at baseline was found to be associated with women's autonomy^{xlvii} such that the more autonomy she had (as measured by her mobility, intra-household decision-making power and savings behaviors) the more food secure she was as well as her children were. Food security was also found to be associated with using more coping strategies and having savings and food security of children was found to be associated with having received food from the ICDS center.^{xlviii} These findings point to the important role that gender, community health and nutrition projects and financial services play in household food security status.

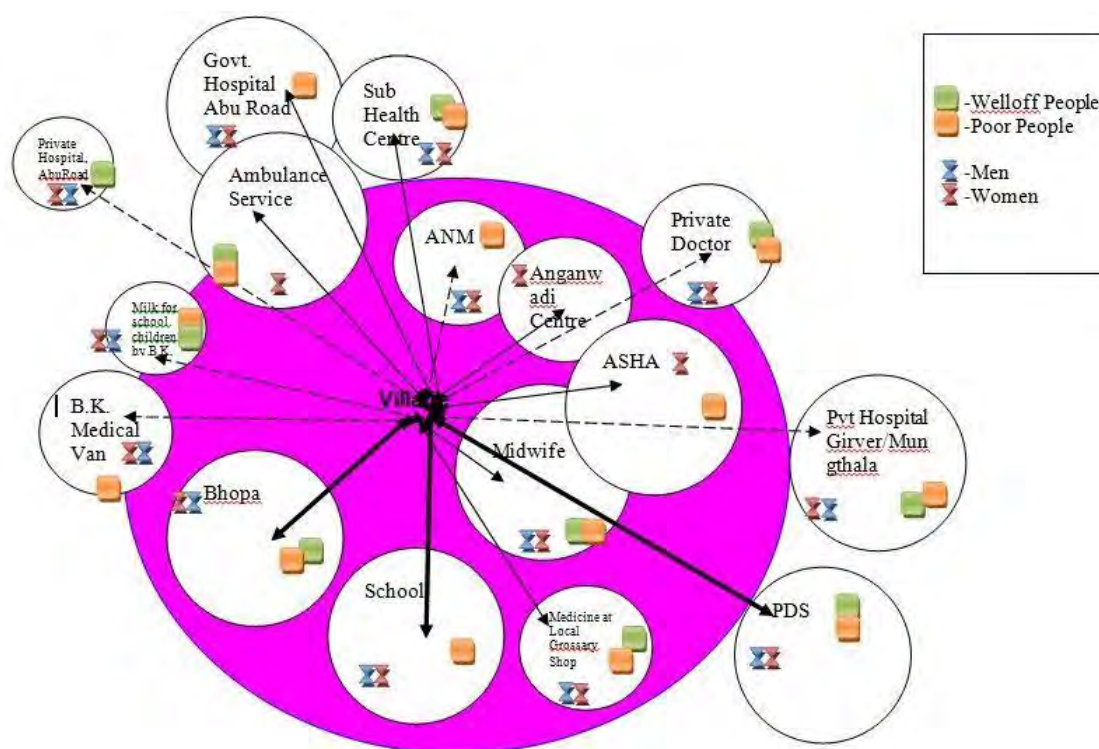
USE OF HEALTH SERVICES

Access to health and nutrition services was an integral part of the project despite the services already having been available to the communities in which PRADAN and VAAGDHARA operated. During the formative research, it was found that while services abound for households such as those served by the two organizations, they either appear or are fairly inaccessible or not well received. The map below (Figure 4) was drawn for one community within the project to demonstrate the proximity of the services as well as who used the service.

In short, the mapping exercise revealed that the anganwadi center or ICDS centers were not highly preferred for services; Bhopa, midwives and individual health workers were preferred. Food and nutrition programs, such as the Public Distribution System (PDS) were highly valued, but were harder to reach and required traveling outside of the community. The baseline assessment also seemed to reveal that people perceived that the distance to health facilities was a significant barrier (59 percent rated distance as a big barrier) as well as the cost and concern that drugs or providers not be available once they arrived to seek services.

By the endline, concerns over some these barriers didn't seem to change in a consistent manner; but it was interesting to see that in some cases, concerns about the availability of healthcare providers or in particular, female health care providers, increased from baseline to endline.

Figure 4: Community Services Map



There were fewer respondents at the endline that reported concerns about not having money needed for treatment and this is consistent with the decrease in respondents who indicated they delayed treatment for their children or themselves due to cost or lack of money.

Per the target, there was a 32 percentage-point increase in respondents reporting to have received benefits from the ICDS centers in the past 12 months with more reporting access to supplementary food, growth monitoring, health check-ups, education, and breastfeeding support. However, 74 percent of respondents when asked directly whether they accessed these services about the same, more or less than the prior year, 74 percent said about the same. There were equally concerns by the implementing partners and the FFHIT team that the report of those using ICDS services seemed completely out-of-line with what they understood locally about the use of these services. In fact, there was concern that the respondents may be over reporting their use of these services because the respondent is answering the question in a way they believe the interviewer wants them to answer. Project staff noted that ICDS centers provide inconsistent services from village to village where some operate well and others poorly. Some spend their government funds quickly and then have to close their doors until new funds are allotted and others manage their funds more effectively.

During the qualitative interviews at follow-up, one SHG shared that its members were not happy with the ICDS center workers in their village and complained that the anganwadi worker was not helpful and that they often wasted their 1-2 kilometer walk to the center to find that

supplies had run out. However, after participating in the RNP, the SHG group members shared that they approached the anganwadi worker as a group and demanded their entitlements and they felt that the center had worked properly ever since. One of the CNAs also reported that the education they received was an “eye-opener that the government had so many schemes for our welfare. All of these years and we did not know about them and therefore could not access them.” Though the SHG members shared they still complain about the ICDS center services, “we visit more often for collecting our entitlements.”

Data from RNP baseline data assessing the determinants of utilizing ICDS center services found that female involvement in health care decisions was positively associated with ICDS use.^{xlix} There was also a

“Women also make decisions. She runs the home and those decisions are good. All of the women in our village are like that. They are becoming so intelligent.....we both make decisions about money earned from labor, agriculture, vegetables.” –Husbands of RNP SHG members

positive relationship between use of ORS and utilization of ICDS services. These results, found within the endline and the baseline data, suggest an important relationship between women’s decision-making power and use of health services. This finding is consistent with other

research that demonstrates the link between women’s empowerment and utilization of health services.ⁱ

GENDER

While there were no specific targets set for changes in social norms and intra-household decision-making power or women’s autonomy, as can be seen throughout this report, “gender” was an important concept explored within the RNP and the associated research. While the quantitative research found that there were improvements in women’s empowerment in terms of decisions they make alone or with their husbands, the qualitative research was designed to help unpack how women perceived changes in their relationship with their spouses and other family members.

Decision-making power

Respondents reported in the quantitative that they made more joint decisions with their husbands regarding food purchases, but the majority of women reported that she alone made decisions on how much to feed the family members. Research conducted in Tanzania suggests that while these metrics are helpful to understand changes in a woman’s perception of the decision-making power she “delegates” herself, it can mask the decision-making power that her husband actually delegates to her. To really understand change in her actual power, husbands’ perceptions of their wives’ roles in decisions would equally need to be assessed.ⁱⁱ

In the focus groups with husbands whose wives participated in SHGs involved in RNP, there were stark differences in how they described women who made decisions compared to men whose wives were not members of SHGs. When asked how they would describe a woman who is able to make important decisions about her life and put those into action, men whose wives were members of SHGs shared, *“Women also make decisions. She runs the home and those decisions are good. All of the women in our village are like that. They are becoming so intelligent.....we both make decisions about money earned from labor, agriculture, vegetables.”* Compare this to men whose wives are not members of FDGs: *“In our community, men make the decisions. It is good. Men can think and take some decision. It is our tradition.”* When asked if there were women who made similar decisions as those made by men? *“No.”* They shared that money and liquor were the key areas of great conflict, and that *“when there is some disagreement, [the wives] may be beaten by their husbands, sometimes she’ll go to her parental home, too. In that case, we have to go with other family members and take her back. If the wife is not under control, she is usually beaten by her husband.”* When asked whether they helped their wives with her chores? *“Work that belongs to women is done by women. Work that belongs to men is done by men.”* Their wives, those who were not members of an SHG, shared a similar story. When asked about decisions made at home, they shared, *“mostly we take decisions together but it also happens that when a woman asks for even 20 rupees, her husband raises his eyebrows. Decisions are only taken by [men].”* Thus, there is some discrepancy in perceived joint versus independent decision-making. When asked if there were decisions that only women make? *“No, we ask our husbands.”* Women who belonged to an SHG participating in RNP shared when asked about who generally makes decisions, *“we both take decisions in the family. We discuss, and then take decision.”* Does her husband ever take a decision alone? *“No,”* they giggled, *“if so, we will not give him food.”*

“eating together with family not only strengthens family bonds but it also improves love within the family.” –SHG member

Members may have actual greater roles or a complete change in decision-making; however, it appears clearly that they are now able to voice their opinion with more confidence. FGD members shared they were able to decide small things like attending SHG meetings and routine purchases in the house. They sounded happy that they are now able to discuss and voice their opinion on big decisions such as purchase/sale of land, crops to be grown, marketing of produce, etc. and that more decisions are made jointly. Some members attributed this to them starting to eat meals together with their husbands, which they felt created a *“favorable atmosphere for conversation”* with their spouses. As one SHG member shared, *“eating together with family not only strengthens family bonds but it also improves love within the family.”*

Domestic Violence & Alcoholism

Despite fewer respondents reporting that they felt a husband was justified in ever beating their wives, a large majority of women (65 percent) still reported that sometimes during the past year, they felt afraid of their husbands. While prevalence of reported domestic violence has decreased since the 2005-6 NFHS survey from 46 percent of women reporting to have ever experienced spousal violence to 25 percent in 2015-6,^{lii} the fact that a large percentage still “feared” their husband is likely indicative of the conflict and potential violence that still remains. In fact, RNP participants, particularly the CNAs who took on new roles during RNP, shared conflict was not avoided with the promotion of new social norms, such as eating together, or leaving home for additional SHG meetings.

“Once the ice was broken, there was no stopping and we now enjoy the full support and cooperation of our husbands.” - CNA

Geeta, the PRADAN SHG member mentioned earlier in the report, and her husband were transparent about their own conflict.

Geeta’s husband used to drink heavily and spend more than Rs. 100 per day on alcohol. In his inebriated state, he’d fight bitterly with Geeta. He eventually gave up drinking when the SHG women in the village took out a “daru bandi rally” (a rally in favor of prohibition). He now drinks rarely and shared that he’d completely stopped beating his wife. He also claimed that many men in the village have equally drastically reduced drinking after the women’s rally. Geeta claims that the money they now save by her husband having given up drinking, they are now able to buy more vegetables and eat better. Stories such as this one were not rare, particularly regarding the collective action of the SHG members fighting against the alcoholism that runs rampant in their communities. One in-depth interview with Kankuri Bai, a PRADAN SHG member, highlights an additional story: *“last year, the SHGs in this area made the decision to fight the drinking. We demanded that the local government close down the shops selling alcohol.”* She continued to share that the fight would sometimes escalate. *“I heard there was a man selling alcohol, the SHG members stripped him down, covered him in black soot, and made him roam the village.”* Now, every year since 2015, seven to eight thousand SHG women will get together at the SHG federation level and will do a skit on alcohol at the community level where men are also present. Every 4th of March, the Federation of SHGs comes up with issues they want to address. This past year, they decided on growing SHG membership. Since March of this year, they’ve seen 200 new SHGs built already.

Chunni, one of the oldest members of her group, approximately 60 years of age, shared that there were a lot of changes in the attitude of their husbands. Many husbands started actively participating in the household, such as collecting water (which is a big drain on the time and energy of womenfolk), cutting vegetables, etc. Husbands started feeding children and looking after them as women attended SHG meetings. Another member shared emotionally about the biggest challenge they were facing regarding the drinking of their husbands. She said the majority of the men in the community, including the husbands of the SHG members, drink regularly which causes a big drain on their meager resources and that the addiction was also

ruining the health of the menfolk. She lamented that alone the CNAs have not been able to bring much change in this regard. Rameela, a CNA from VAAGDHARA shared that when the group learned that one of their group members was no longer able to attend SHG meetings and was subjected to domestic violence by her husband, all the other members of the group ganged up, went to her house and confronted the husband. They started conducting the SHG meetings in that member's household. After several meetings held in the home, the husband relented and stopped objecting to his wife attending the meetings.

Leadership

Community Nutrition Advocates, themselves, were not immune to conflict either. Given their new roles as leaders of their SHGs and as CNAs, they faced their own initial challenges. During interviews with the CNAs, they mentioned that their husbands initially resented their wives going out and spending additional time away from home. CNAs also found it difficult to manage their outside work and their housework. One group of CNAs from PRADAN shared that some CNAs dropped out because their husbands did not want to look after the children in their wives absence. However, those that remained *“silently persisted”* and were eventually able to convince their husbands to let them volunteer. They shared what they learned with their husbands. They said their husbands, upon seeing the enthusiasm of the SHG members, eventually accepted their roles and even started cooperating. The CNAs felt they were raised in the esteem of their husbands. One CNA shared, *“once the ice was broken, there was no stopping and we now enjoy the full support and cooperation of our husbands.”*

While the CNAs may not have absolute control over all decisions, such as having limited say on how the loans they take from the SHG are used, they are happy that they are able to discuss with their husbands and discuss their opinions, which by itself, in their opinion, is a significant change. Ramli, a 34 year old member shared that at first she feared the reaction of her husband of her role as CNAs, but with a smile on her face, she reported that she no longer seeks “permission” to attend the meetings but only informs him that she is going to attend meetings.

Self-help Groups

From the qualitative interviews, it appears that social norm change was underway as a result of women's involvement in the SHGs and that the messages and practices promoted by RNP were able to build upon some progress that had already been made by the introduction of the SHGs by PRADAN and VAAGDHARA to their project communities years prior. One study conducted in Andhra Pradesh to measure the impact of the introduction of SHGs^{liii} found that in communities where SHGs were introduced, participants and non-participants in those villages enjoyed increased social capital and economic empowerment, indicating that there were positive social externalities through the introduction of the SHGs even among women who were not members of a group. The researchers also found significant impact on the nutritional status on SHG members, despite a severe drought that occurred during the study

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period, suggesting that SHG members were able to smooth their consumption and diversify their food sources. These findings are consistent with research among savings and lending groups of women globally.^{liv} It is also conceivable, given other research^{lv} on change in social norms due to

participation in integrated agriculture, nutrition, and gender projects, that RNP played an additive role in changing underlying assumptions and practices regarding intra-household dynamics that influence household nutrition.

LIMITATIONS

This study was conducted as a pre- and post-test assessment with project participants; therefore, the changes measured in knowledge, behaviors, and perceptions cannot be interpreted as caused by the RNP project, but only suggestive of the possible impacts a project like this could potentially achieve. Despite this important limitation, the changes that occurred between the baseline and endline are promising. Given the important emphasis on gender and the efforts to influence social norm change, much effort was placed on assessing women's mobility, intra-household decision-making power, and her perceptions of her own well-being. Measuring these dynamics from only the woman's perspective is likely either over or under-estimating the actual agency she has given prior research^{lvi} demonstrating that there is often a difference between what decisions women delegate to themselves (or they perceive they have control over) in terms of decision-making and what their husbands or society actually delegate to them. Future research should include men in the evaluations where intra-household decision-making is being measured to fully understand changes in this area.

Also, it was often difficult to tease apart the RNP from programs that both partners were managing on an ongoing basis, such as women's empowerment. It is important to note that while RNP partners all participated in a gender training to unpack personal and organizational beliefs about the roles that men and women play and a key design by RNP project staff was to integrate gender messages within the education promoted by the CNAs, both partners equally had additional activities occurring supporting social norm change, such as the SHG federation and village meetings where men were invited to learn from the SHGs and communities were engaged around these issues. Therefore, it is important to note that the "gender" component of this project evolved over time, and the researchers' understanding of the "gender" activities evolved over time as well. Therefore, it would equally be quite difficult to interpret the changes in gender dynamics occurring as a result of a few simple "gender" messages being included within the health and nutrition education. The effectiveness of the "gender" component of this project is therefore likely subject to various factors, such as the legacy of the SHG movement, the community involvement in SHG activities as well as the additive effect of the RNP.

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RECOMMENDATIONS

There were many positive improvements measured in this assessment, both experienced by the SHG members and the CNAs. Given the numerous messages shared during such a short implementation time-period, there was concern that the findings would be mixed. The following short list reflects the recommendations by the implementing organizations as well as the RNP stakeholders in the replication of a project such as RNP:

1. *Involve men more:* One key reflection is that the SHG members' husbands should have been directly invited to participate in the education provided by the CNAs as this could have promoted behavior change among the husbands as well as their wives, and likely improved the changes among the SHG members. This recommendation is consistent with the research that shows that male involvement in health education increases the benefits among primary targets of many health interventions.^{lvii}
2. *Simplify the health messages, provide Frequently Asked Questions:* While the CNAs used flip books that were picture-based to help both remind them of the key messages they should share as well as to help them facilitate the session, there were a lot of topics to cover in the short 18-month period. Future replications of this project should prioritize the topics to be covered to avoid overloading the CNAs with their own trainings and those they facilitate. In addition, possible frequently asked questions should be discussed to further build the confidence of the CNAs to respond to questions from their SHG members.

3. *Continue to develop linkages with the government, health and food security services:* Despite improved reported use of ICDS services by SHG members, there remains the perception that not all ICDS services are viewed positively due to inconsistent availability and quality of services. NGOs such as PRADAN and VAAGDHARA can make members more aware of services, promote usage of services and support their financial capability to access those services, however, the services equally have to be reliable and of quality once a person arrives to ensure their use and benefit of those services. This requires deeper collaboration between organizations such as PRADAN and VAAGDHARA with these services to ensure greater reliability and accountability –as linking SHG members to poor services can only create risks for PRADAN and VAAGDHARA.

CONCLUSION

The Rajasthan Nutrition Project was designed to improve the equitable nutrition of tribal communities in rural Rajasthan. Progress towards this goal appears to have been made, but the goal has not been fully met yet. As the Rajasthan Project Coordinator for PRADAN shared, *“nutrition is a deeper issue and cannot be tackled by the effort of one institution. It’s a community issue, not just the issue of individual households.”*

Projects such as RNP are complicated and have many moving parts and stakeholders. Yet, complexity in design is necessary to match the complexity of the barriers that keep households malnourished despite economic growth. However it’s equally simple. RNP built upon the strengths of various organizations. PRADAN and VAAGDHARA were both long-term actors in the SHG movement in India and both had been working in agriculture with their SHG members as well as in women’s empowerment. Grameen, FFHIT, and CHETNA designed and trained PRADAN and VAAGDHARA facilitators on the nutrition education inclusive of the gender messages who in turn trained their own CNAs. Grameen and FFHIT worked with PRADAN and

“Nutrition is a deeper issue and cannot be tackled by the effort of one institution. It’s a community issue, not just the issue of individual households.” -- Rajasthan Project Coordinator for PRADAN

VAAGDHARA to assess local health and nutrition services and develop protocols for linking their SHGs with these services. Through these collaborations, PRADAN and VAAGDHARA

leadership and project team members both reflected that they equally were able to make the connection between the agricultural practices and crops and vegetables they had been promoting with the nutritional value these crops could provide to their members and communities.

At the beneficiary-level, this “design” complexity has to be perceived as simple action steps. In RNP’s case, SHG members were asked to take simple steps, such as eating meals with their husbands to ensure equitable distribution of food and conversation with their spouse,

purchasing iron pots to cook from to improve the iron content of their foods, mixing flours to improve the nutritional content of their daily bread, growing nutrient-rich vegetables and drying them for the lean months to smooth food consumption, saving money for health expenses, and leveraging the collective courage of their self-help group members to encourage change whether with their gatekeepers or within themselves.

The Rajasthan Nutrition Project demonstrates that leveraging self-help groups of women is both a sustainable and effective way to encourage, and at some times, push change as they give women a greater voice, greater confidence, and ultimately agency to work for themselves, their families, and the well-being of their communities.

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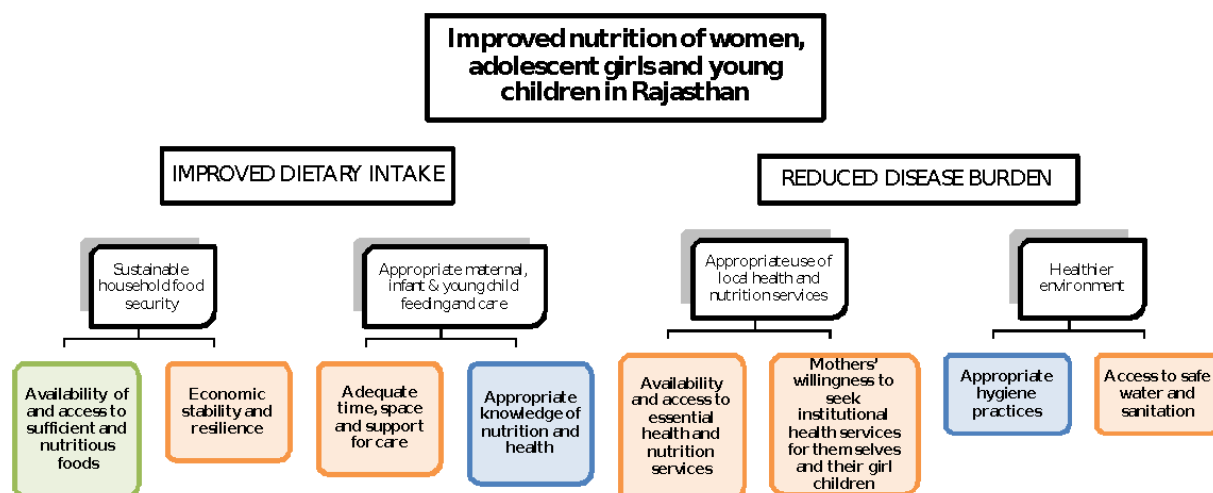
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ANNEXES

RAJASTHAN NUTRITION PROGRAM THEORY OF CHANGE

LOGIC MODEL: RAJASTHAN NUTRITION PROJECT THEORY OF CHANGE



NUTRITIONALLY ENABLED FAMILIES AND COMMUNITIES, DRIVERS OF CHANGE:

- Strong women's groups engaged in successful economic activity to improve agricultural livelihoods and food production
- Financially literate women and families who can budget and plan family resources to support annual food security and economic resilience
- Gender awareness and improved gender equality and women's empowerment for decision-making with respect to nutrition and health
- Nutritionally and health-literate women who have knowledge to support behaviors that improve nutrition and protect health
- Durable linkages to local nutrition, health and water/sanitation interventions in local communities
- Awareness of rights to local services and capacity for advocacy for accountability, improvement of quality and access

(Green box) Local partner agricultural/livelihood strengthening inputs
 (Orange box) Shared Freedom from Hunger and local partner technical assistance inputs
 (Blue box) Freedom from Hunger primary technical assistance inputs

RNP KEY MESSAGES

The following 12 messages are those that were reflected in the sessions provided by the CNAs but were also used with the SHGs to create songs and other mechanisms to remember the messages:

1. Initiate breastfeeding within 1 hour of birth.
2. Exclusively breastfeed an infant for 6 months. Infants do not need any water.
3. The benefit of giving birth in the government health centers is to prevent complications and avail of JSY and JSSK⁸ benefits
4. Eating seasonal fruits and vegetables is beneficial for better health and nutrition of every family.
5. Every family should start a “poshanwadi” (kitchen garden) in their backyard to ensure food security and better nutrition of the family.
6. Use ORS to treat diarrhea at the household level.
7. Wash hands with soap and water before eating and after defecation to prevent diarrhea and other illnesses.
8. Every pregnant woman, lactating woman and adolescent girls must consume IFA tablet to prevent anemia.
9. Every family is encouraged to cook their meals in an iron pot to ensure intake of iron for prevention of anemia.
10. Adopt the practice of eating together for better nutrition of women and girls and promote family bonding.
11. Visit Anganwadi, Mamata Diwas⁹ (MCHND) Sub-center and PDS to develop strong rapport with service providers such as ASHA, ANM, AWW.
12. Adopt the habit of health savings among SHG members to address emergency health care expenses.

⁸ Janani Shishu Suraksha Karyakaram (JSSK): A government program designed to provide completely free and cashless services to pregnant women including normal deliveries and caesarean operations and sick newborns (up to 30 days after birth) in Government health institutions in both rural & urban areas.

⁹ Village Health and Nutrition Day where households can access essential Reproductive and Child Health (RCH) services, once every month, in collaboration with Maternal and Child Development Department