# Project SuPoshan

## Narmada, 2024

An initiative of Adani Wilmar Ltd, implemented by Adani Foundation

*An Endline evaluation of SuPoshan interventions for children under five years in Narmada, Gujarat.*
*A report submitted by IIPHG to Adani Foundation*

## About SuPoshan Project

Project SuPoshan: A mission against malnutrition and anemia

Project SuPoshan, an initiative by Adani Wilmar, is implemented by the Adani Foundation. The project intends to support the Ministry of Women and Child Development's Poshan Abhiyaan, by facilitating a community-based model to tackle the issue of malnutrition among children. This initiative has been in association with the Adani Foundation who have been acting as the implementation partner. Project SuPoshan encompasses curative and preventive actions in line with the 'ten proven interventions to reduce under-nutrition'.

For further information, please visit: https://www.suposhan.in/

## About Indian Institute of Public Health Gandhinagar:

Indian Institute of Public Health Gandhinagar (IIPHG) is a university established under IIPHG Act 2015 of the Government of Gujarat. IIPHG has been recognized as an ICMR Collaborating Centre of Excellence. IIPHG aims to strengthen the overall health system in the country through education, training, research, and advocacy/policy initiatives. IIPHG is the evaluation partner of Project SuPoshan.

For further information, please visit: www.iiphg.edu.in

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## List of Abbreviations

| | |
|---|---|
| AF | Adani Foundation |
| ANC | Antenatal care |
| ASHA | Accredited Social Health Activist |
| AWC | Anganwadi Centre |
| AWW | Anganwadi Worker |
| BF | Breastfeeding |
| BMI | Body Mass Index |
| CF | Complementary Feeding |
| CMTC | Child Malnutrition Treatment Centre |
| EA | Enumeration Areas |
| EBF | Exclusive Breastfeeding |
| EIBF | Early Initiation of Breastfeeding |
| HAZ | Height-for-Age z score |
| HFIAS | Household Food Insecurity Access Scale |
| IDI | In-depth Interviews |
| IFA | Iron and Folic Acid |
| IIPHG | Indian Institute of Public Health Gandhinagar |
| IYCF | Infant and Young Child Feeding |
| LMIC | Low and Middle-Income Countries |
| MAM | Moderate Acute Malnutrition |
| MCP | Mother and Child Protection Card |
| MDD-C | Minimum Dietary Diversity of Child |
| MDD-W | Minimum Dietary Diversity of Women |
| MUAC | Mid-Upper Arm Circumference |
| NFHS | National Family Health Survey |
| NNS | National Nutrition Strategy |
| NRC | Nutrition Rehabilitation Centre |
| OBC | Other Backward Class |
| PPS | Probability- Proportional-to-Size |
| PSU | Primary Sampling Unit |
| SAM | Severe Acute Malnutrition |
| SC | Scheduled Caste |
| SD | Standard Deviation |
| SDG | Sustainable Development Goal |
| ST | Scheduled Tribes |
| SUW | Severe Underweight |
| THR | Take- Home -Rations |
| VHND | Village Health and Nutrition Days |
| WASH | Water, Sanitation and Hygiene |
| WAZ | Weight-for-Age z score |
| WCD | Women and Child Development |
| WFZ | Weight-for-Height z score |
| WHO | World Health Organization |
| WRA | Women of Reproductive Age |

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## Executive Summary

Malnutrition poses a significant challenge to global health, particularly affecting children under 5 years old, with over half of their deaths attributed to undernutrition, mainly in low and middle-income countries, including India. To drive action and monitor progress, the World Health Organization (WHO) established Global Nutrition Targets for six malnutrition indicators to achieve by 2025, aligned with the UN Sustainable Development Goals (SDGs) aimed at eradicating malnutrition by 2030. India, with its vast and diverse population of 1.4 billion in 2021, experiences varying levels of development, leading to a diverse distribution of health risks.

Addressing malnutrition among children and women is crucial for optimal cognitive growth, development, overall health, and productivity. Despite India's implementation of several flagship programs and initiatives like the Integrated Child Development Services (ICDS) scheme, Mid-day meal scheme, Pradhan Mantri Matru Vandana Yojna, and POSHAN Abhiyaan, which directly address undernutrition and promote appropriate dietary practices in communities, India still has 19.3% children under 5 years who are wasted. Given India's population size and the need to meet global targets, investing in actions to reduce all forms of malnutrition is crucial.

In response to this challenge, the Adani Foundation introduced the SuPoshan Project, an evidence-based, technology-powered, and community-cantered initiative. This project, launched as a CSR effort by Adani Wilmar Ltd., aimed to combat malnutrition and anaemia among children under 5, women of reproductive age, and adolescent girls across 20+ locations in India, starting in 2016. The project's mission was to strengthen community-level efforts in promoting good healthcare practices, nutrition, and WASH practices, utilizing government resources optimally and fostering sustainable behaviour change through community responsiveness.

To achieve its objectives, the SuPoshan Project engaged multiple stakeholders such as gram panchayats, local governing bodies, healthcare facilities, and frontline health workers like ASHA and ANM. Local community volunteers, known as SuPoshan Sanginis, played a crucial role in implementing program activities. An endline evaluation conducted externally by the Indian Institute of Public Health Gandhinagar assessed the project's impact in the Narmada district of Gujarat state. This evaluation used a mixed-method (quantitative and qualitative) approached, including structured interviews with beneficiaries, in-depth interviews with key stakeholders, anthropometric and dietary surveys. Analytical tools like ENA software, SPSS, and thematic qualitative data analysis were utilized to understand the cascading impact of the project interventions on beneficiary nutritional status and community behaviours.

**Highlights of the Endline Evaluation:**

**Nutritional Status of Children:** The prevalence of stunting, wasting and children with underweight was found to be 32%, 26% and 33% respectively among the children age 0-2 years in the endline. There was a constant decrease in the severity of wasting in all the categories. Overall wasting reduced by 19% from baseline and severe wasting reduced by 29% in 0-2 years. Significant improvement was observed in dietary diversity among children (28.6% to 36.2%). Similar improvement was also observed in age-appropriate complete immunization (41.25% to 72.7%).

**Impact on maternal health:** A significant majority (96.6%) received Iron and Folic Acid (IFA) tablets, and most of them (90.1%) consumed it for recommended period (≥100 days). Moreover, the consumption of the IFA shows a positive increase of about of 65% from the baseline for mothers with children up to 2 years of age.

**Supplementary Nutrition**: Consumption of Take-Home Rations (THR) increased from 65% to 90% from baseline to endline. Mothers reported significant changes in their dietary and feeding practices following guidance from SuPoshan Sangini. These changes included adopting improved hygiene practices, such as washing vegetables thoroughly before cooking, and diversifying their culinary repertoire by preparing a variety of dishes. Additionally, mothers mentioned modifying their approach to feeding their children, ensuring a more balanced and nutritious diet. Family benefits from Sangini's home visits, where she offers valuable guidance on cooking and feeding practices, including information on utilizing locally available resources such as bal-bhog and roti, integrating them into a balanced diet for optimal nutrition.

**Awareness related to IYCF Practices**: The intervention has led to significant increase in the knowledge: 83.2% had knowledge regarding Early initiation of Breastfeeding (EIBF), 80.5% regarding duration of Exclusive Breastfeeding (EBF) and 45.75% regarding introduction of Complementary Food (CF). There is an increase in the level of awareness of immunization, growth and health check-up, counselling and referrals in the endline along with an increase in the uptake and utilization of services in the Anganwadi Centres (AWCs) and Mamta Divas in the endline survey. There was increase in the awareness regarding referrals (13.1%), and pre-school education (63.1%) indicating the project's support in delivering ICDS services.

**Acceptance of SuPoshan Sangini**: SuPoshan Vatika initiative was adopted with the support of family members and guidance from the village Sangini worker. The efforts of SuPoshan Sangini in counselling mothers have significantly improved community awareness. Poshan Sanginis' door-to-door visits and routine anthropometry have been particularly successful in combating malnutrition. Parents of undernourished children were informed about nutrition and government schemes. Mothers were more conscious about their infants' health and followed SuPoshan Sangini's advice. One of the fathers had highlighted specific advice provided by Sangini, including proper infant holding techniques, appropriate feeding practices, and the frequency of feeding. Fathers mentioned that Sangini helped them learn about keeping their child healthy, and the children are doing better because of it.

**Challenges and Mitigation**: Connecting with the community as a SuPoshan Sangini was both rewarding and challenging. Many community members anticipated cash incentives, making it difficult to persuade them of the value of health and nutrition services. The Sanginis faced challenges in convincing the families that their child is malnourished and need treatment. There were challenges related to delayed response from community in accepting severe malnourishment as a disease condition and seeking admissions in CMTC/NRC. Traditional beliefs, customs and social norms hindered uptake of CMTC/NRC services.

The initial lack of understanding and proficiency in anthropometric measurements was addressed through comprehensive training. They found the training instrumental in guiding them on various aspects, including the identification and management of Moderate Acute Malnutrition (MAM) and SAM (Severe Acute Malnutrition), establishment of kitchen gardens, and the role of fathers in child development.

**Conclusion**

Community-based intervention in the form of SuPoshan Sanginis was effective in bringing down the prevalence of malnutrition in Narmada district of Gujarat. Moreover, it was also effective in increasing the awareness and practices related to nutrition among the mothers and other household members of the children. Similar community-based intervention can be looked up for scaling up in other districts with higher burden of malnutrition.

# Introduction

## Malnutrition and its global and national implications

Malnutrition is a leading risk factor which plagues the growth and development of children. It accounts for more than two-third of the deaths under five years of age in India [1]. The most vulnerable population affected by the adversities of malnutrition remain the infants, children and women, particular in low- and middle-income countries (LMICs). Hence, it is imperative to address malnutrition in women and children to promote healthy growth and development as well as productivity [2]. Recognising the due importance of nutrition and the menace of malnutrition globally, the Sustainable Development Goal (SDG) 2.2 aims to eradicate all forms of malnourishments by 2025. The profound burden of malnutrition has resulted in multiple initiatives globally and nationally, the World Health Organization's (WHO) Global Nutrition Targets and UN Decade of Action on Nutrition (2016-25), National Nutrition Strategy (NNS) by NITI Aayog, and the National Nutrition Mission (Poshan Abhiyan) [3-7].

## Overview of nutritional situation in Gujarat and Narmada district

Narmada is one of the aspirational districts in Gujarat. More than half of the children under the age of 5 years are underweight (53%), and about 23% wasted in National Family Health Survey-5 (NFHS). With a majority population residing in rural areas, Narmada district has about half of its children under five years, bearing the brunt of stunting (47.2%), as per the NFHS-5.

## Description of Project SuPoshan

To tackle this issue of rampant malnutrition in the district, the Women and Child Development (WCD) department of Government of Gujarat (GoG) collaborated with the Adani Foundation (AF) and launched a flagship project-SuPoshan. The project comprises of a community-based intervention in the form of village level health volunteers called the "SuPoshan Sangini" who work towards spreading awareness, referral and promoting behaviour change among the most vulnerable population groups to achieve the desired objectives of the project.

## Role of Indian Institute of Public Health, Gandhinagar

Indian Institute of Public Health Gandhinagar (IIPHG) did assessment of Project SuPoshan with the objective to measure the impact of SuPoshan interventions, delivered through the community- based volunteer (SuPoshan Sangini), in reducing wasting among children under five years in Narmada district in Gujarat. The assessments were done in the form of 3 surveys: baseline in 2019, midline in 2022 and endline survey in 2024.

## Objectives of the Study:

The broad objective of this endline survey is to measure the impact of SuPoshan interventions, delivered through the community-based volunteer (SuPoshan Sangini), in reducing wasting among children under five years (hereafter <5 years).

### Specific objectives:

1. To assess the burden of wasting among children less than 5 years of age
2. To identify factors associated for wasting among children less than 5 years of age
3. To determine the outreach of the women and child health care services.

   The baseline and endline surveys for the SuPoshan program were conducted by the Indian Institute of Public Health, Gandhinagar in the years 2019 and 2024 respectively.

# Methodology

## Study Design

The surveys adopted a mixed method approach to achieve the objectives of the study to evaluate the impact of SuPoshan interventions in Narmada district in Gujarat. The SuPoshan intervention covered all four sub-districts (Dediapada, Nandod (including Garudeshwar), Sagbara, and Tilakwada) in Narmada. The evaluation study was conducted to measure the impact of SuPoshan interventions, delivered through the community-based volunteer (SuPoshan Sangini), in reducing wasting among children under five years in Narmada district in Gujarat. The data for the endline survey was collected from December 2023 to January 2024. The baseline survey was conducted in 2019.

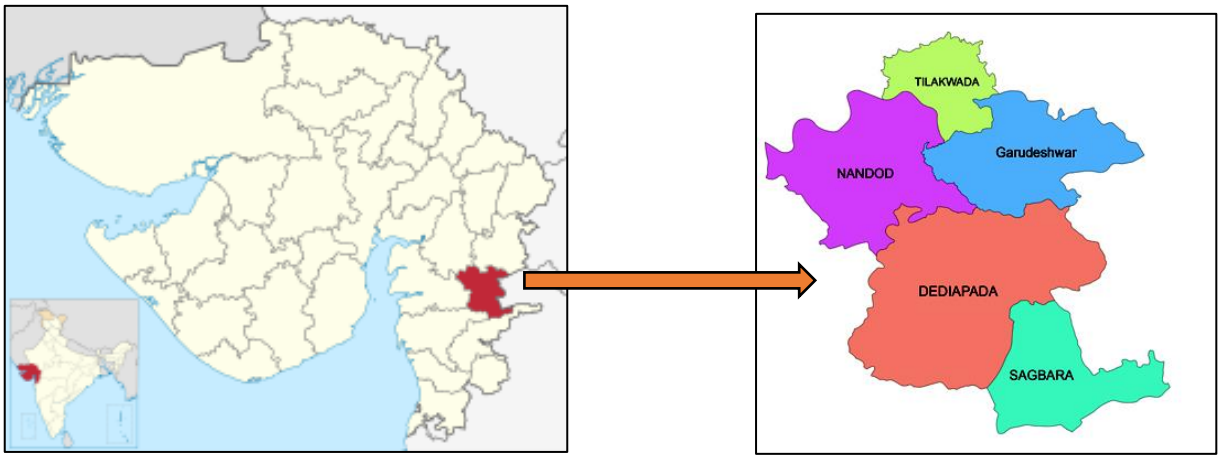


**Figure 1: Map of Narmada District**

## Sampling and selection of eligible households

There are 613 villages in Narmada district. Of these, the sampling frame included a total of 555 villages (Dediapada-167, Nandod-202, Sagbara-89, Tilakwada-97; Total-555) where Adani Foundation operates. A total of 550 children were to be selected using a two-stage cluster sampling. The primary sampling unit (PSU)/cluster included the rural enumeration areas (EA) from the census village list in the four sub-districts in Narmada district. In total 40 PSUs/clusters were selected from 555 villages using the probability- proportional-to-size (PPS) sampling technique. From each cluster, thirteen to fourteen households were selected randomly for the study.

## Sample size

The baseline and midline survey followed a sample size of 400 children from 40 clusters/PSUs. The endline survey also followed the sample size of 400 children aged less than 2 years residing in Narmada district. Since, the SuPoshan intervention is delivered to children up to 5 years of age, an additional sample of 150 children aged 2 to 5 years were also assessed in the endline survey. Hence, the total sample size of the endline survey was 550 children (400 children = 0 to 2 years; 150 children = 2 to 5 years). However, the data was collected for 588 children (400 children = 0 to 2 yrs; 188 children = 2 to 5 yrs) to account for any missing entries. A list of surveyed

PSUs is presented in figure 3. It can be observed that the 40 selected villages were representative of the total district.

In the second stage, a list of total households (based on census data) in each selected cluster was obtained from Adani Foundation. The houses were randomly selected from each selected cluster. In case there was no eligible child in the pre-identified household, the team sampled the neighbouring house until a household with eligible subject was found. Thereafter, the next household on the pre-identified household sheet was sampled and similar procedure was followed.

**Dediapada:** Dumkhal, Kunbar, Navagam, Samarpada, Vandri

**Nandod (including Garudeshwar):** Amadla, Bhadam, Bitaada, Borutar, Chhindiyapura, Dekai, Dhamadra, Dhobisal, Durcha, Gaagar, Junaraj, Junvad, Kumasgam, Lachhras, Mangrol, Mithivaav, Mota Piparia, Moti Chikhali, Nani Chikhali, Navra, Paatna, Rajpara, Samariya, Serav, Sisodra, Surajvad, Survani, Tankari, Timbi, Umarva, Vasala, Zarvani

**Sagbara:** Bhoramli, Dudhaliver, Kubhariya, Nal, Nana kakdi Amba, Ranbuda, Ubhariya

**Tilakwada:** Devaliya, Indraman, Kasundar, Rengan, Tilakwada, Virpur

**Figure 2: List of Selected villages in Narmada district**

## Data Collection Tool

### 1. Quantitative Data Collection

The quantitative survey tool for the beneficiaries included information on the following domains: household profile; socio economic information; water, sanitation and hygiene; household food security; maternal antenatal-delivery-postnatal care, and IYCF knowledge and practices; women empowerment; health services awareness and utilization; maternal and child dietary diversity; childhood illness and health seeking behaviour; child immunization; anthropometry; and use of SuPoshan program components. The quantitative data was collected using Kobo Toolbox application. The tool for the same is attached in annexure 1.

### 2. Qualitative data collection

The qualitative data was collected using in-depth interviews. Ten villages were selected from the selected PSUs (every fourth) from all the five blocks. From each village, In-depth Interviews (IDIs) were conducted with the following stakeholders to explore and understand the challenges or any events of success stories in the intervention.

- Mothers of children <5 years (n=10)
- Fathers of the children (n=10)
- SuPoshan Sangini (n=10)
- Families who have installed SuPoshan Vatika (n=10)
- Families of children recovered from SAM (n=10)
- ASHA/AWW (n=10) and Government stakeholders.

The interviews also focussed on the knowledge and practices of participants about the maternal and child health outreach services and role of Sangini and other grass root level healthcare workers in reaching out to families for health and nutrition support. The tool for the same is attached in Annexure 2.

### Data collection and Survey Team

The data was collected from the selected villages by 7 survey teams, each team comprised of 3 field investigators and 1 supervisor from IIPHG. All field investigators received a two days training in collecting quantitative and qualitative data and anthropometry. Data was collected digitally through Kobo Toolbox. Daily data quality checks were ensured at two points – IIPHG supervisors ensured spot check of forms during data collection and concurrent checks were done on the digital forms on after data collection.

### Data analysis

The data analysis for the quantitative survey was done using SPSS and MS Excel. The nutritional status was calculated using Essential Nutritional Assessment (ENA) software and the cut offs used were as per the WHO Child Growth Standards. For the qualitative part of the study, thematic analysis of the interviews was done manually.

### Ethical consideration

The study was approved by the institutional review board at the IIPHG (TRC-IEC No.: 20/2023-24). An informed consent was obtained from all the participants of the survey, in depth interviews and the key informants. A signed non-witnessed consent was also obtained from the mother or any caregiver of the children. Consent was also taken from the key informants for qualitative surveys.

# Results

## Sociodemographic characteristics

Table 1 shows the sociodemographic characteristics of the children in the endline survey. Out the total children surveyed in the endline, majority (94.7%) of the children were Hindus. The caste distribution show that the majority of the sampled households were from Scheduled Tribes/ Scheduled Castes (92.9%), followed by General (3.9%) and Other Backward Caste (3.2%). Majority of the households were found to have been living in Kuccha houses (61.7%) and owned their houses (98.3%) About 60% of the households had a monthly income of up to or less than INR 10,000. When it comes to safety nets, about 80% households had BPL card. A major proportion of households resided in joint family. About one-third of households (76%) owned land. The mean HFIAS score was 1.01 and a significant majority (81.5%) reported being food secure as compared to 86% in the baseline.

**Table 1: Sociodemographic characteristics of the children and mother**

| Characteristics | Endline % (0 – 5 years) (n=588) |
|---|---|
| **Religion** | |
| Hindu | 94.7 (557) |
| Muslim | 5.3 (31) |
| **Caste** | |
| General | 3.9 (23) |
| SC/ST | 92.9 (546) |
| OBC | 3.2 (19) |
| **Monthly family income** | |
| ≤10000 | 60 (353) |
| >10000 | 40 (235) |
| BPL card | 79.6 (468) |
| **Family type** | |
| Joint | 83.5 (491) |
| Nuclear | 16.5 (97) |
| **House type** | |
| Kuccha | 61.7 (363) |
| Pukka | 38.3 (225) |
| **House ownership** | |
| Owned | 98.3 (578) |
| Rented | 1.5 (9) |
| **Land ownership** | 76 (447) |

| | |
|---|---|
| **Livestock ownership** | |
| None | 35.9 (211) |
| One or more | 64.1 (377) |
| **Assets ownership** | |
| Electricity | 98.6 (580) |
| Radio | 4.9 (29) |
| TV | 43.9 (258) |
| Bed | 75.3 (443) |
| Refrigerator | 41.5 (244) |
| Mobile | 93.5 (550) |
| Cycle | 16.7 (98) |
| Two-wheeler | 66.5 (391) |
| Four-wheeler | 6.1 (36) |
| **HFIAS score** | |
| HFIAS score mean | 1.01 ± 2.541 |
| Food secure | 81.5% (479) |
| Food Insecure | 18.5% (109) |

### Maternal and child characteristics

Table 2 shows the maternal and child characteristics of the study sample. The mean age of children was 19.1 years with a higher male preponderance (53.7%). Around 9 % of the children suffered from diarrhoea in the last 15 days from the survey. The mean age of mother was 26.1 years. More than 90% of the mothers were literate. Around 90% of mothers were married after 18 years of age and had their first pregnancy after 18 years of age.

**Table 2: Child and Mother characteristics**

| Characteristics | Endline (0 – 5 years) (N=588) |
|---|---|
| **Children** | |
| Age (months) (mean) | 19.1 (14.72) |
| **Age Group** | |
| Younger (0-6 months) | 24.5 (144) |
| Older (7-24 months) | 44 (259) |
| **Age Group, according to feeding Guidelines** | |
| 0-5 months | 21.8 (128) |
| 6-8 months | 9.0 (53) |

| | |
|---|---|
| 9-11 months | 9.5 (56) |
| 12-15 months | 13.8 (81) |
| 16-24 months | 13.9 (82) |
| 25-59 months | 32.0 (188) |
| **Gender** | |
| Male | 53.7 (316) |
| Female | 46.3 (272) |
| **Morbidity since past 15 days** | |
| Diarrhoea | 9.2 (54) |
| ARI | 2.4 (14) |
| **Mother** | |
| Age (years) | 26.1 (4.22) |
| **Education** | |
| Literate | 93.4 (549) |
| Illiterate | 6.6 (39) |
| **Age at marriage** | 19.6 ± 2.374 |
| Married, <18 years | 9.4 (55) |
| Married, ≥ 18 years | 90.6 (533) |
| **Age at first pregnancy** | 21.7 ± 2.894 |
| Pregnant, <18 years | 1.4 (8) |
| Pregnant, ≥ 18 years | 98.6 (580) |
| **Gravida** | 1.9 ± 0.96 |
| **Total children** | 1.7 ± 0.83 |
| Weight (kg) | 46.2 ± 9.52 |
| Height (cm) | 150.9 ± 5.94 |

### Household WASH Status

Table 3 presents the WASH status of households. Nearly all (97.5%) households had access to improved drinking water facility as defined by WHO; however, more than three quarter (83%) experienced water scarcity. A significant majority of mothers reported appropriate hygiene practices before preparing the meals (98.8%) and while feeding the child (99.1%). About 91.5% of the households had adequate hand washing facility. However more than a quarter (36%) households did not have toilets facilities.

**Table 3: Household WASH status**

| WASH Characteristics | Endline % (0 – 5 years) (N=588) |
|---|---|
| **Drinking water source** | |
| Piped water | 39.1 (230) |
| Tube well | 53.7 (316) |
| Dug well | 4.4 (26) |
| Camper | 0.3 (2) |
| Other (hand pump) | 0 (0) |
| Water scarcity (last month) | 83 (488) |
| **Hand Hygiene** | |
| Hand washing before preparing meals | 98.8 (581) |
| Hand washing before feeding child | 99.1 (583) |
| **Handwash facility in the house** | |
| Water | 8.5 (50) |
| Water + soap | 91.5 (538) |
| Water + soil | 0 (0) |
| Other | 0 |
| **Availability of Toilet** | 63.8 (375) |

## Maternal Anthropometry and Dietary Diversity

Table 4 shows the maternal characteristics related to anthropometry and dietary diversity. The mean Body Mass Index (BMI) of WRA was 20.3 and 10.5% had short stature. WRA's mean dietary diversity score was 4.5 and just over half (56.5%) had inadequate dietary diversity status.

**Table 4: Maternal characteristics – Anthropometry, Dietary diversity**

| Characteristics | Baseline (%) (0-2 years) (n=400) | Endline (0-2 years) (n=400) | Trends % Change | Endline (0-5 years) (n=588) |
|---|---|---|---|---|
| Short stature: <145 cm | 12.75 (51) | 12.25 (49) | -3.9 | 10.5 (62) |
| Short stature: ≥145 cm | 87.25 (349) | 87.8 (351) | 0.6 | 89.5 (526) |
| BMI (kg/m²) | 19.42 ± 3.09 | 20.0 ± 3.622 | | 20.3 ± 3.91 |
| Underweight | 44 | 38.8 (155) | -11.8 | 36.7 (216) |
| Normal | 56 | 61.2 (245) | 8.9 | 63.3 (372) |
| **Detailed Nutritional status as per BMI** | | | | |
| Severely underweight | 8.75 | 10 (40) | -14.3 | 10.2 (60) |
| Moderately underweight | 14 | 9.5 (38) | 32.1 | 8.7 (51) |
| Mildly underweight | 21.25 | 19.25 (77) | 9.2 | 17.9 (105) |
| Normal | 43.25 | 41.5 (166) | 4.1 | 39.6 (233) |
| Overweight | 6.75 | 9.25 (37) | 37.0 | 10.9 (64) |
| Pre-obese | 5.5 | 9 (36) | 63.6 | 10.7 (63) |
| Obese | 0.5 | 1.5 (6) | 200 | 2 (12) |
| Dietary diversity score | 4.33 ± 0.99 400 | 4.62 ± 2.259 | | 4.5 ± 2.18 |
| Dietary diversity status: Inadequate | 56.75 (227) | 53.25 (213) | -6.2 | 56.5 (332) |
| Dietary diversity status: Adequate | 43.22 (173) | 46.75 (187) | 8.2 | 43.5 (256) |

## Antenatal, delivery and postnatal care

Table 5 shows the distribution of maternal antenatal, delivery and postnatal care during last delivery. Majority of the women (98.6%) had registered their last pregnancy similar to the findings in the baseline. About 80% of the women had Maternal and Child Protection Card (Mamta card). About 69% of women had availed the recommended (≥4 times) ANC visits. A significant majority (96.6%) received IFA tablets, and most of them (90.1%) consumed it for recommended period (≥100 days). Regarding delivery care, a large proportion (98 %) reported institutional delivery. A major proportion of women had normal delivery (85.5%). Further, a large proportion (80%) also received postnatal care.

**Table 5: Maternal indicators- antenatal, delivery and postnatal care**

| Indicators (%) | Baseline (0 – 2 yrs) (n=400) | Endline (0-2 years) (n=400) | Trends % Change | Endline (0-5 years) (N=588) |
|---|---|---|---|---|
| Last pregnancy registered | 99.8 | 98.8 (395) | -1.0 | 98.6 (580) |
| MCP card available | 99.3 | 79.3 (317) | -20.2 | 79.6 (465) |
| **ANC visits** | | | | |
| 4 times or more | 74.3 | 70.3 (281) | -5.4 | 68.9 (405) |
| < 4 times | 25.8 | 29.8 (119) | 15.5 | 31.1 (183) |
| **IFA tablet consumed** | | | | |
| IFA tablet received | 97.3 | 97.2 (389) | -0.1 | 96.6 (568) |
| ≥100 days (n=389) | 54.8 | 90.23 (351) | 64.8 | 90.1 (512) |
| <100 days | 45.2 | 9.77 (38) | -78.4 | 9.9 (56) |
| **Child birth place** | | | | |
| Home | 8.5 | 2 (8) | -76.5 | 2 (12) |
| Institutional (government and private) | 91.5 | 98 (392) | 7.1 | 98.0 (576) |
| **Delivery type** | | | | |
| Normal | 91.5 | 84.8 (339) | -7.4 | 85.5 (503) |
| Caesarean | 8.5 | 15.3 (61) | 79.4 | 14.5 (85) |
| Any assistance during last delivery | 87.0 | 60 (240) | -31.0 | 62.9 (370) |
| Received postnatal care during last pregnancy | 91.5 | 78.3 (313) | -14.5 | 79.4 (467) |

### Maternal Health and Nutrition Practices

Marked improvement in adequate dietary diversity as well as consumption of IFA tablets were observed over the study periods. Knowledge and practices related to early initiation and exclusive breastfeeding, complementary feeding increased during the study period (Table 6).

**Table 6: Maternal Health and Nutrition Practices**

| Indicators | Baseline (%) (0-2 yrs) (n=400) | Endline (%) (0-2 yrs) (n=400) | Trends (% change) | Endline (%) (0 – 5 yrs) (n=588) | NFHS 5 (%) (0-5 yrs) | Trends (% change) |
|---|---|---|---|---|---|---|
| **Nutritional Status of Women in Reproductive Age group** | | | | | | |
| Women with BMI below normal (BMI <18.5 kg/m2) | 44 | 38.8 (155) | -12 | 36.7 (216) | 30.7 | 20 |
| **Dietary Diversity** | | | | | | |
| Adequate Dietary Diversity (7-24 months) | 28.6 | 36.2 (84) | 27 | 36.2 (84) | 4.1 | 783 |
| **Maternity Care** | | | | | | |
| ANC visits ≥ 4 times | 74.25 | 70.25 (281) | -5.40 | 68.90 (405) | 83.40 | -17.40 |
| Consumption of IFA for 100 days or more | 54.76 | 90.23 (351) | 65 | 90.1 (512) | 65.1 | 38 |
| Institutional delivery | 91.50 | 98 (392) | 7.10 | 98 (576) | 81.70 | 20 |
| Received postnatal care during last pregnancy | 91.50 | 78.25 (313) | -14.5 | 79.4 (467) | 87.20 | -9 |
| **Short stature (<145 cm)** | 12.75 (51) | 12.25 (49) | -3.9 | | NA | |
| **Knowledge regarding Early initiation of Breastfeeding** | | | | | | |
| Within 1 hour of birth | 80.75 (323) | 83.25 (333) | 3.10 | 83.7 (492) | NA | |
| After 3 – 4 hours | 11.75 (47) | 13.75 (55) | 17 | 13.3 (78) | NA | |
| After 2 – 3 days | 6.50 (26) | 3 (12) | -53.85 | 3.1 (18) | NA | |
| Don't know | 1 (4) | | | 0 | NA | |
| **Knowledge regarding Duration of EBF** | | | | | | |
| 6 months | 40.25 (161) | 80.5 (322) | 100 | 81.5 (479) | NA | |
| **Knowledge regarding Introduction to Complementary foods** | | | | | | |
| After 6 months | 26.5 (106) | 45.75 (183) | 72.60 | 45.4 (267) | NA | |
| **Practices regarding Early initiation of Breastfeeding** | | | | | | |
| Within 1 hour | 82.4% (323) | 89% (332) | 8% | 87.3% (461) | 30.6% (<3 yrs) | 185.30% |
| **Exclusive breastfeeding – 1 – 7 days** | | | | | | |
| Children exclusively breastfed | 84.85% (84) | 87.5% (112) | 3.12% | 87.5% (112) (n=128) | 74.20% | 18% |
| **Consumption of THR** | | | | | | |
| THR Consumption by children | 65.20% | 90% (216) (n=240) | | 90% (216) (n=240)* | NA | |
| **Age appropriate immunization** | | | | | | |
| Complete | 41.25% | 78.25 (313) | 89.70% | 72.7% (427) | 93.8% (12-23 m) | -22.50% |

*THR above 3 years is given to malnourished children only

### Awareness and Utilization of Safety Net

Table 7 shows the level of awareness and utilization of safety net programs. There has been an increase in the level of awareness of immunization, growth and health check-up, counselling, and referrals in the endline.

**Table 7: Awareness and Utilization of safety net programs**

| Indicators | Baseline(n=400) (0-2 yrs) | Endline % (n=400) (0-2 yrs) | Trends (% Change) | Endline (n=588) (0-5yrs) |
|---|---|---|---|---|
| Heard about Mamta diwas | 90.25% (361) | 99.25 (397) | 10.0 | 99.5% (n=585) |
| Attended Mamta diwas | 100% (361) | 100 (397) | 0.0 | 99.8% (n=584) |
| Services taken at Mamta diwas | | | | |
| Information on health | 18.01% (65) | 90.4 (359) (n=397) | 402 | 90.75 (530) (n=584) |
| Growth and Health check-up | 35.73% (129) | 79.1 (314) | 121.4 | 79.60 (465) |
| Immunization | 13.85% (50) | 96 (381) | 593.1 | 95.40 (557) |
| Primary treatment | 31.3% (113) | 69.8 (277) | 123.0 | 69.50 (406) |
| Referrals | 1.11% (4) | 23.4 (93) | 2008.1 | 24.30 (142) |
| Counselling | 0 | 9.3 (37) | | 9.10 (53) |
| Anganwadi Centre | | | | |
| Awareness regarding AWC | 98.5% (394) | 100 (400) | 1.5 | 100% (588) |
| Visited AWC | 99.49% (392) | 99 (396) | -0.5 | 99.3% (584) |
| Child registered at AWC | 100% (394) | 100 (396) | 0.0 | 98.8% (581) |
| Services taken from AWC | | | | |
| Supplementary Nutrition | 20.3% (80) | 94.2 (373) | 364 | 94.50 (552) |
| Preschool non-formal education | 15.48% (61) | 63.1 (250) | 307.6 | 67 (389) |
| Nutrition and health education | 12.44% (49) | 86.1 (341) | 592.1 | 88.20 (515) |
| Immunization | 23.86% (94) | 82.6 (327) | 246.2 | 81.80 (478) |
| Health check-up | 27.92% (110) | 60.1 (238) | 115.3 | 56.80 (332) |
| Referrals | 0 | 13.1 (52) | | 13.20 (77) |
| Receiving THR | 0.969 | 93.8% (240) (n=256) | -3.3 | 93.8% (240) (n=256) |
| Consuming THR | 0.652 | 90% (216) (n=240)* | 38.0 | 90% (216) (n=240)* |
| Awareness regarding Subcentre | 56.25% (225) | 73.25 (293) | 30.2 | 72.4% (426) |
| Awareness regarding PHC | 60% (240) | 81.25 (325) | 35.4 | 78.2% (460) |
| Awareness regarding CHC | 54% (216) | 67.25 (269) | 24.5 | 64.6% (380) |
| Awareness regarding NRC | 32% (128) | 31.5 (126) | -1.6 | 32.7% (192) |
| SuPoshan Program | | | | |
| Awareness regarding SuPoshan Sangini | 45.25% (181) | 98.5 (394) | 117.7 | 98.8% (581) |
| Ever been visited Sangini | NA | | | 99.8% (580) (n=581) |
| Services given by Sangini | | | | |
| Anthropometry | NA | | | 70.7% (411) |
| Cooking shows | NA | | | 73.8% (429) |
| Demonstration on food and hygiene | NA | | | 86.1% (500) |

| | | | | |
|---|---|---|---|---|
| Family counselling on govt. schemes | NA | | | 66.4% (386) |
| FGDs on nutrition, hygiene and health | NA | | | 73.7% (428) |
| Hb Screening | NA | | | 50.1% (291) |
| Kitchen garden | NA | | | 49.4% (287) |
| Referral to NRC/CMTC | NA | | | 18.8% (109) |
| Heard about SuPoshan Vatika | NA | | | 63.8% (375) |
| Vatika in their premises | NA | | | 49.5% (291) |
| Growing crops in Vatika | NA | | | 92.9% (276) (n=291) |

NA = Questions were not included in the baseline assessment

### Nutritional Status of Children

Table 8 shows the prevalence of stunting, wasting and children with underweight which was 32%, 26% and 33% respectively among the children age 0-2 years. Severe wasting among the children has declined by 28.6% from the baseline. Similarly, children with moderate undernutrition declined by 24.5%.

**Table 8: Child Anthropometry**

| Characteristics | Baseline % (n=400) (0-2 yrs) | Endline % (n=400) (0-2 yrs) | Trends (% change) | Endline (%) (n =588) (0-5 yrs) |
|---|---|---|---|---|
| **Nutritional status** | | | | |
| Wasting | 32.25 | 26.0 (153) | -19.4 | 23.0 (135) |
| Underweight | 39.75 | 33.0 (194) | -17.0 | 39.1 (230) |
| Stunting | 34.5 | 32.0 (188) | -7.2 | 39.7 (233) |
| **Detailed Nutritional Status – Wasting** | | | | |
| Severe | 10.5 | 7.5 (30) | -28.6 | 6.6 (39) |
| Moderate | 21.75 | 18.5 (74) | -14.9 | 16.3 (96) |
| Mild | 32.25 | 25.0 (100) | -22.5 | 28.1 (165) |
| Normal | 35.5 | 49.0 (196) | 38.0 | 49.0 (288) |
| **Detailed Nutritional Status – Underweight** | | | | |
| Severe | 13.25 | 13.0 (52) | -1.9 | 14.8 (87) |
| Moderate | 26.5 | 20.0 (80) | -24.5 | 24.3 (143) |
| Mild | 35 | 30.8 (123) | -12.1 | 30.6 (180) |
| Normal | 25.25 | 36.3 (145) | 43.6 | 30.3 (178) |
| **Detailed Nutritional Status – Stunting** | | | | |
| Severe | 14.75 | 14.5 (58) | -1.7 | 17.2 (101) |
| Moderate | 19.75 | 17.5 (70) | -11.4 | 22.4 (132) |
| Mild | 23.5 | 25.0 (100) | 6.4 | 26.2 (154) |
| Normal | 42 | 43.0 (172) | 2.4 | 34.5 (201) |

### Overall Anthropometric Deficiency

Table 9 and figure 3 highlights the overall anthropometric deficit among child in Narmada. Overall, 41.5% children had a normal nutritional status and 58.5% were either stunted or wasted or underweight.

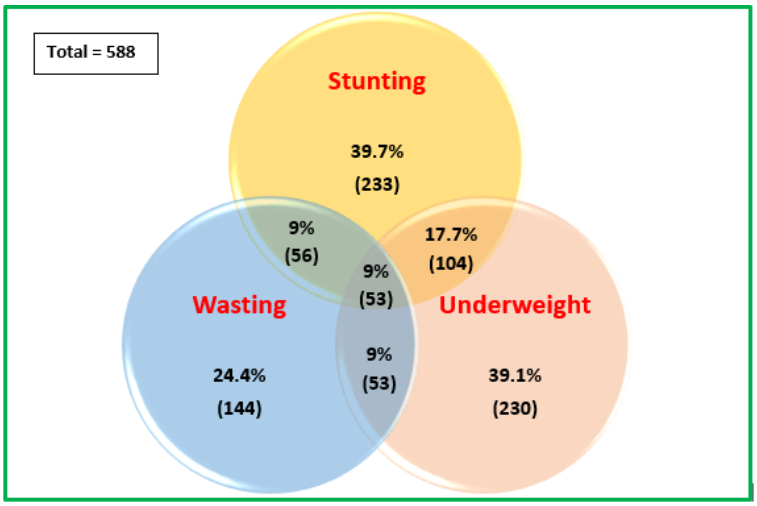


**Figure 3: Venn Diagram representing the Anthropometric deficit in Narmada**

**Table 9: Prevalence of multiple anthropometric deficits among children in Narmada**

| Multiple anthropometric deficit | | Endline (N=588) (0-5 yrs) | Endline (n=400) (0-2 yrs) | Baseline (N=400) (0-2 yrs) |
|---|---|---|---|---|
| NOT wasted NOT stunted NOT underweight | | 41.5% | 47.25% | 40% |
| Wasted OR stunted OR underweight | | 58.5% | 52.75% | 60% |
| Wasted AND stunted AND underweight | | 9% | 8.25% | 10.5% |
| Wasted AND stunted, NOT underweight | | 9% | 8.5% | 0% |
| Wasted AND underweight, NOT stunted | | 9% | 10.25% | 12.5% |
| Stunted AND underweight, NOT wasted | | 17.7% | 11.5% | 13% |
| Wasted, NOT stunted, NOT underweight | | 6.4% | 7.5% | 9.25% |
| Stunted, NOT wasted, NOT underweight | | 12.9% | 12.25% | 11% |
| Underweight, NOT wasted, NOT stunted | | 3.4% | 3% | 3.75% |

### Feeding practices

Table 10 shows maternal knowledge regarding IYCF. A large proportion of women had correct knowledge regarding early initiation of breastfeeding (83.7%) and exclusive breastfeeding (92.2%). However maternal knowledge was below satisfactory levels regarding the timing of introduction of complementary feeding (45.4%).

**Table 10: Knowledge regarding IYCF practices**

| **Early initiation of Breastfeeding** | | | | |
|---|---|---|---|---|
| Within 1 hour of birth | 80.75% (323) | 83.25 (333) | 3.1 | 83.7% (492) |
| After 3 – 4 hours | 11.75% (47) | 13.75 (55) | 17.0 | 13.3% (78) |
| After 3 – 4 days | 6.50% (26) | 3 (12) | -53.8 | 3.1% (18) |
| Don't know | 1% (4) | | -100.0 | 0 |
| Duration of EBF | | | | |
| > 6 months | 52.25% (209) | 17.25 (69) | -67.0 | 15.6% (92) |
| 6 months | 40.25% (161) | 80.50 (322) | 100.0 | 81.5% (479) |
| < 6 months | 3.5% (14) | 2.25 (9) | -35.7 | 2.9% (17) |
| Don't know | 4% (16) | | -100.0 | 0 |
| **Feeding during first 6 months** | | | | |
| Only breastmilk (BM) | 76.5% (306) | 92.50 (370) | 20.9 | 92.7% (545) |
| BM + Medicine | 18.25% (73) | 1 (4) | -94.5 | 1.2% (7) |
| BM + Water | 1.25% (5) | 1.25 (5) | 0.0 | 1.0% (6) |
| BM + Some juice | 0 | 1 (4) | | 0.9% (5) |
| BM + Some food | 1.75% (7) | 4.25 (17) | 142.9 | 4.3% (25) |
| Other | 1.75% (7) | | -100.0 | 0 |
| Don't know | 0.5% (2) | | -100.0 | 0 |

Table 11 shows the maternal practices regarding IYCF. About 90% women breastfed (any breastfeeding) their child. A large proportion of women practiced early initiation of breastfeeding (87%) and exclusive breastfeeding (94.5%) in the endline assessment.

**Table 11: Practices related to IYCF**

| **Indicators** | **Baseline (n=400)** | **Endline (n=400)** | **% Change** | **Endline (n=588)** |
|---|---|---|---|---|
| **Any breastfeeding** | 98% (392) | 93.25% (373) | -4.8 | 89.8% (528) |
| **Early initiation of breastfeeding** | | | | |
| Within 1 hour | 82.4% (323) | 89.0 (332) | 8.0 | 87.3% (461) |
| After 3 – 4 hours | 9.69% (38) | 8.0 (30) | -17.4 | 9.3% (49) |
| After 2 – 3 days | 7.91% (31) | 3.0 (11) | -62.1 | 3.4% (18) |
| **Exclusive breastfeeding – 1 – 7 days** | | | | |
| Animal milk | 5.05% (5) | 3.9% (5) (n=128) | -22.8 | 3.9% (5) (n=128) |
| Water | 1.01% (1) | 3.9% (5) (n=128) | 286.1 | 3.9% (5) (n=128) |
| Jaggery/Honey | 3.03% (3) | 3.9% (5) (n=128) | 28.7 | 3.9% (5) (n=128) |
| Nothing | 84.85% (84) | 87.5% (112) (n=128) | 3.1 | 87.5% (112) (n=128) |
| Other | 2.02% (2) | | 0 | 0 |

| | | | | |
|---|---|---|---|---|
| Don't know | 4.04% (4) | | 0 | 0 |
| **Exclusive breastfeeding till date** | | | | |
| Only breastmilk | 79.8% (79) | 94.5% (121) (n=128) | 18.4 | 94.5% (121) (n=128) |
| BM + Medicine | 19.19% (19) | 0 | -100 | 0 |
| BM + Water | 0 | 3.9% (5) (n=128) | | 3.9% (5) (n=128) |
| BM + Some juice | 0 | 1.6% (2) (n=128) | | 1.6% (2) (n=128) |
| BM + Food | 1.01% (1) | 0 | -100 | 0 |

Table 12 shows that the mean dietary diversity score was 3.28 and 5.13 among the children aged **7** –24 months and 25 – 59 months respectively in the endline survey. Further 72.7% children had completed the required immunization for their age. The findings further suggest that the proportion of malnourished children with Mid-Upper Arm Circumference (MUAC) < 11.5 cm was 1% and declined by 5.4% from the baseline.

**Table 12: Child Dietary Diversity, Age-appropriate immunization and wasting as per MUAC**

| Indicators | Baseline (n=400) | Endline (N=588) |
|---|---|---|
| **Minimum Dietary Diversity (7 – 24 months) (Endline n = 400)** | | |
| Mean diversity score | 2.68 ± 0.08 | 3.28 ± 1.276 (232) |
| Adequate | 28.60 | 36.2% (84) |
| Inadequate | 71.40 | 63.8% (148) |
| Individual Dietary Diversity Score (25 – 59 months) (Endline n=188) | | |
| Mean diversity score | | 5.13 ± 2.413 (183) |
| Low diversity | | 48.1% (88) |
| Average diversity | | 16.3% (30) |
| High diversity | | 35.6% (65) |
| Age-Appropriate Immunization status | | |
| Complete | 41.25 | 72.7% (427) |
| Partial | 58.75 | 27.3% (161) |
| Wasting as per MUAC | | |
| Mean MUAC score | 13.40 ± 0.08 (374) | 14.1 ± 1.33 (413) |
| MUAC <11.5 cm (Malnourished) | 6.4% (24) | 1.0% (4) |
| MUAC ≥11.5 cm (Normal) | 93.6% (350) | 99% (409) |

### Insights from qualitative study

The main outcomes of the qualitative research are presented below.

Table 13 shows the perceptions of the mothers on outreach of maternal and child health care services

**Dietary and Nutrition Practices**: After interviewing the mothers, it was found out that there have been significant changes in their dietary and feeding practices following guidance from SuPoshan Sangini. These changes included

adopting improved hygiene practices, such as washing vegetables thoroughly before cooking and diversifying their culinary repertoire by preparing a variety of dishes which could be easily prepared from the Take- Home - Rations (THR). Additionally, mothers mentioned modifying their approach to feeding their children, ensuring a more balanced and nutritious diet.

**Challenges in following Sangini's work**: Some mothers reported challenges in attending Sangini's activities for instance-unfamiliarity with Sangini or lack of invitation. Other pertinent obstacles included constraints of a nuclear family, caregiving responsibilities for an elder child and husband which posed a challenge to follow through with Sangini's suggestions for the mothers. Despite the obstacles, mothers who actively participated in Sangini's programs benefited from a wealth of knowledge and practical skills.

**Sangini's guidance on Kitchen Garden:** Sangini's recommendation of establishing a kitchen garden was deemed beneficial for enhancing nutrition although practical limitations, such as space constraints, hindered its implementation for some mothers.

*"Sangini offered guidance on cultivating the plants; she provided seeds"*

*"Sangini regularly visits my backyard to observe the growth of the vegetable plants"*

**Trust in Sangini**: Several mothers highlighted their familiarity with Sangini workers, recognizing them from community gatherings or other local events. Despite not receiving direct visits from Sangini at their homes, these mothers still expressed confidence in Sangini's effectiveness in delivering information and services. Moreover, the mothers expressed trust in Sangini's guidance and knowledge.

**Table 13: Mothers perceptions on outreach of maternal and child health care services**

| Themes | Results |
|---|---|
| **Improved dietary and feeding practices.** | • Improved hygiene practices, such as washing vegetables thoroughly before cooking<br>• Effective diversification the meal preparation by variety of dishes from the available THRs |
| **Trust in Sangini** | • Trust in the Sangini's knowledge and practical skills.<br>• Confidence in Sangini's effectiveness in delivering information |
| **Challenges in attending Sangini's activities** | • Unfamiliarity with Sangini<br>• Lack of invitation to the meetings.<br>• Household responsibilities, nuclear family, caregiving responsibilities for an elder child and husband. |
| **Establishing a kitchen garden** | • Received information about Kitchen Garden.<br>• Initiated gardening of vegetables like tomatoes, brinjal, spinach, and fenugreek leaves for nutritious meals |

Table 14 shows the role of SuPoshan Sangini and the Sneha Shibirs. After interviewing the Sanginis, it was found out the Sanginis have been imparting knowledge on health, hygiene, nutrition and the effective utilization of THR at the 'Sneha Shibir' which were regularly organized at Anganwadi centers. The Sanginis constantly undertook activities at the 'Sneha Shibir' which included regular weight and height measurements, cooking demonstrations, and home visits. It was also found out that they exhibited a strong desire to break the cycle of malnutrition by educating mothers on providing nutritious meals for their children.

**Challenges as a Sangini Worker**: They reflected upon their work and emphasized that connecting with the community was both rewarding and challenging. A Sangini, serving five villages highlighted the need to redesign the program to ensure effective service delivery by minimizing the population per Poshan Sangini. It was also found out that many community members anticipated cash incentives, making it difficult to persuade them of the value of health and nutrition services.

**Capacity Building**: The Sanginis acknowledged the effectiveness of the comprehensive training which made overcome the initial lack of understanding and proficiency in anthropometric measurements. They found the trainings instrumental in guiding them on various aspects, including the identification and management of MAM and SAM, establishment of kitchen gardens, and the role of fathers in child development.

**Table 14: Role of SuPoshan Sangini and the Sneha Shibirs**

| Themes | Results |
|---|---|
| **The Sangini and the Sneha Shibirs** | • Dissemination of knowledge on health, hygiene, nutrition<br>• Awareness on THR<br>• Regular weight and height measurements,<br>• Cooking demonstrations<br>• Home visits |
| **Challenges as a Sangini** | • Redesigning the program by minimizing the population per Poshan Sangini<br>• Anticipation of cash incentives by the community members. |
| **Effective Capacity Building** | • The effectiveness of training imparted to Sanginis on:<br>➢ Identification and management of MAM and SAM.<br>➢ Establishment of kitchen gardens.<br>➢ Role of fathers in child development. |

After interviewing the concerned stakeholders which included the community health workers, Mukhya Sevika, medical officers, NRC staff, etc.; it was found that the SuPoshan Sanginis have been very useful in imparting information to the villagers about government schemes to combat malnutrition (table 15). It was also found out that the efforts of SuPoshan Sangini in counseling mothers have significantly improved their awareness regarding nutrition. Parents of undernourished children are becoming more informed about nutrition and government schemes. mothers are more conscious about their infants' health and sincerely follow SuPoshan Sangini's advice.

Poshan Sanginis' door-to-door visits and routine anthropometry have been particularly successful in combating malnutrition.

*"Sangini brings THR to these sessions to inform mothers about its benefits, and this has led to an improvement in health and nutrition in the community, especially among pregnant mothers"*

**Table 15: Perceptions of healthcare workers stakeholders regarding SuPoshan Sangini**

| Themes | Results |
|---|---|
| **Awareness regarding Nutrition** | Awareness regarding nutrition and Government schemes related to nutrition increased immensely among the community. |
| **Sangini's contribution in enhancing health status** | Door-to-door visits and;<br>Routine anthropometry in checking malnutrition |
| **Take Home Rations** | Sangini's efforts in bringing awareness regarding THR |

**Perspectives of Anganwadi worker/ASHA**

Table 16 shows the perspectives of the Anganwadi worker/ ASHAs towards the SuPoshan Sanginis and the the SuPoshan intervention.

**Contribution in existing healthcare platforms:** Sangini actively contributes to Village Health and Nutrition Days (VHND) by mobilizing the community, ensuring active participation in the Anganwadi Centre, and assisting in measuring the height and weight of mothers and children. She also engages in counselling adolescent girls on IFA supplementation.

**Utilization of THR:** The Anganwadi worker highlighted the increased demand for Nutrition food and THR in the last two years. Sangini's promote THR utilization through activities like cooking demonstrations and advocating for kitchen gardening. There have been significant changes with an increase in referral patterns over the last two years due to Poshan Sangini's interventions.

*"Sanginiben teaches about proper handwashing technique, counsels pregnant and lactating mothers for maintaining personal hygiene"*

*"She supports us in calling mothers and children during Mamta diwas"*

**Table 16: Perspectives of Anganwadi worker/ASHA**

| Themes | Results |
|---|---|
| **Contribution in existing healthcare platforms** | • Mobilization of community in VHND<br>• Assistance in Height and weight measurement for mothers and children.<br>• Counselling adolescent girls on IFA supplementation |
| **Utilization of THR** | • Increased demand for THR |

| | |
|---|---|
| | • Promotion of THR through cooking demonstration and kitchen garden. |
| **Referral Patterns** | • Increase in referral to higher level of care. |

**Perception of the family members**

Table 17 shows the perspectives of the family members towards the SuPoshan Sanginis and the the SuPoshan intervention.

**Acknowledge contribution of Sangini:** After interviewing the families, it was found out that families acknowledge Sangini's regular presence in their homes and the valuable explanations provided during these visits. Family benefits from Sangini's home visits, where she offers valuable guidance on cooking and feeding practices, including information on utilizing locally available resources such as bal-bhog and roti, integrating them into a balanced diet for optimal nutrition.

**Information for healthy household:** Sangini helps out beneficiaries by checking on the children's health regularly and making sure they get good food, as part of the SuPoshan program. SuPoshan Sangini offers guidance on appropriate food choices and nutrition, including innovative ideas such as utilizing cow dung manure for cultivating Poshan Vatika, promoting sustainable nutritional practices within the family.

There is a shared perception of enduring positive effects on the child's health and overall well-being stemming from the diverse activities facilitated by healthcare providers within the SuPoshan program.

Contrastingly, some families were not familiar with the SuPoshan program. However, they recognize the presence of a lady who visits their home to provide explanations. In other families, Sangini's visits were acknowledged, with mentions of the positive impact on the child's weight and the guidance provided on cooking nutritious food.

*"We consider the program's strengths to include the familiarity of Sangini workers in our locality and their proactive engagement. They address aspects that Anganwadiben and ASHA might not cover''*

*''Sangini takes weight and height of child and informs us if it's less. Sangini explains about the foods which should be consumed by child and mother''*

*"Awareness of the child's severe acute malnutrition came through Sangini, who advised the family to take the child to a nearby CMTC center due to low weight''*

*"We learned about the SuPoshan program from Sangini workers who provided information on dietary recommendations''*

**Table 17: Perception of the family members**

| Themes | Results |
|---|---|
| **Acknowledge contribution of Sangini** | • Regular visits of the Sanginis<br>• Guidance on cooking and feeding practices<br>• Utilization of locally available resources for a balanced diet<br>• Regular health check-up for children. |
| **Information for healthy household** | • Cow dung manure for cultivating Poshan Vatika<br>• Promoting sustainable nutritional practices |
| **Perceived healthier outcome** | • The families believe that there is positive impact on the child's health due to the Sangini intervention. |

**Interview with families of children recovered from Severe Acute Malnutrition (SAM)**

The families acknowledged the contribution of Sanginis in the community and their help in spreading awareness related to Nutrition, SuPoshan Programme and other related information for instance the Nutritional Rehabilitation Centres CMTCs.

*"We consider the program's strengths to include the familiarity of Sangini workers in our locality and their proactive engagement. They address aspects that Anganwadiben and ASHA might not cover''*

*"Sangini takes weight and height of child and informs us if it's less. Sangini explains about the foods which should be consumed by child and mother''*

*"Awareness of the child's severe acute malnutrition came through Sangini, who advised the family to take the child to a nearby CMTC center due to low weight''*

*"We learned about the SuPoshan program from Sangini workers who provided information on dietary recommendations''*

**Interview with houses having SuPoshan Vatika**

SuPoshan Vatika initiative was adopted with the support of family members and guidance from the Sangini. The Sangini provided raw materials for cultivating vegetables, and the installation process was not challenging. Despite encountering insect-related challenges, the beneficiaries are successfully growing various vegetables in their SuPoshan Vatika, catering to their family needs.

*"Sangini offered guidance on cultivating the plants; she provided seeds"*

*"Making regular visits to my backyard to observe the growth of the vegetable plants"*

*"Her consistent monitoring played a crucial role in the success of the garden"*

**Perspective from Fathers**

Table 18 shows the perspectives of the fathers of the children towards the SuPoshan Sanginis and the SuPoshan intervention. After interviewing the fathers of the children, it was found out that majority of fathers were aware of the SuPoshan Sangini worker.

**Sessions by Sanginis:** Some fathers interviewed could not attend information or counseling sessions at the household or community level. Some of the cited reasons included professional commitments, such as work as a driver, and other unspecified reasons. Few fathers mentioned that their wives had attended these sessions. This information included guidance on what foods to eat, how to prepare meals for their children, and the importance of incorporating vegetables, fruits, and milk into their diets.

**Enhancing Father's knowledge on Infant Health:** One of the fathers had highlighted specific advice provided by Sangini, including proper infant holding techniques, appropriate feeding practices, and the frequency of feeding. Fathers mentioned that Sangini helped them learn about keeping their child healthy, and the children are doing better because of it.

**Understanding the importance of Nutrition:** The majority of fathers interviewed demonstrated an understanding of the crucial role nutrition plays in their child's mental and physical growth. They emphasized the importance of feeding their children properly to ensure proper development.

*"Sangini provided me with information regarding the consumption of vegetables, fruits, and a healthy diet for ensuring nutrition for my child"*

**Table 18: Perspective from Fathers**

| Themes | Results |
|---|---|
| **Sessions by Sanginis** | • Information on how to prepare meals for their children<br>• The importance of incorporating vegetables, fruits, and milk into their diets. |
| **Enhancing Father's knowledge on Infant Health** | • Proper infant holding technique<br>• Appropriate feeding practices, and frequency of feeding |
| **Making the fathers understand the importance of Nutrition** | • The role of nutrition in the development of their child's mental and physical growth |

## Conclusion

The study concludes that that the community-based intervention in the form of SuPoshan Sangini was effective in bringing down the prevalence of malnutrition in Narmada district of Gujarat. Moreover, it was also effective in the increasing the awareness and practices related to nutrition among the mothers and other household members of the children. Similar community-based intervention can be looked up for scaling up in other districts with higher burden of malnutrition.

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# Annexure 1

## Tools for the data collection: Qualitative Survey

**Indian Institute of Public Health GandhinagarSuPoshan**

**Endline-Survey 2023-2024**

**Identification**

| | | |
|---|---|---|
| **Name of Taluka** | | [Nandod / Dediapada / Sagbara / Tilakwada] |
| **Name of village** | | Write name |
| **PSU code** | | Write number |
| **Sample No.** | | Write number [1-12] |
| **Sample HH No.** | | Refer sampling sheet |
| *If sample HH no. differs, mention the reason for the same here:* | | |
| | | |
| **Name of the interviewer** | | Write name |
| **Date of interview** | | [DD/MM/YY] |
| **Time of interview** | | [00 hours :00 minutes] |
| | | |
| **Name of supervisor** | | Write name |
| | | |
| **Name of respondent** | | Write name |
| **Age of respondent** | | Years |
| **Contact number** | | Write single digit in eachcolumn |

| | |
|---|---|
| **UID** | |
| | **[PSU code] _[district initial]_[Sample No.]** |

**This schedule has the following modules:**

| # | Modules | Checklist | Remarks |
|---|---|---|---|
| | Consent form | | |
| **A** | Household profile | | |
| **B** | Household socioeconomic information | | |
| **C** | Household Water, Sanitation and Hygiene [WASH] | | |
| **D** | Household food security | | |
| **E** | Maternal antenatal-delivery-postnatal care and IYCFknowledge and practices | | |
| **F** | Women Empowerment | | |
| **G** | Maternal health and nutrition service awareness andutilization | | |
| **H** | Use of SuPoshan program component | | |
| **I** | Maternal Dietary Diversity | | |
| **J** | Child Dietary Diversity | | |
| **K** | Childhood Illness and Health Seeking Behavior | | |
| **L** | Child Immunization | | |
| **M** | Anthropometry | | |

**Indian Institute of Public Health Gandhinagar<u>SuPoshan Endline Survey 2023-24</u>**

**Informed Consent [English]**

Hello, my name is_____and I am working with IIPHG. IIPHG is a research organization that conducts health research for NGOs as well as Government of Gujarat. On behalf ofAdani Foundation, we are undertaking a survey to assess health and nutrition status of children and women in Narmada taluka. Adani Foundation is implementing SuPoshan (adequate nutrition) project in Narmada District. The information we collect from you will be kept confidential. The survey will takeabout 10-15 minutes. We sincerely hope that you will agree to answer the questions since your viewsare important. If I ask you any question that you do not want to answer, just let me know and I will go on to the next question or you can stop the interview at any time. In case you need more information about the survey, please do not hesitate to ask me at any point of time. Do you have any questions? May I begin the interview?

| | | | |
|---|---|---|---|
| **Respondent ready to be interviewed** | | | **(if ready, Signature of respondent)** |
| | | | |
| **Respondent not ready for the Interview** | | | |

**A: HOUSEHOLD PROFILE**

| # | Name of the member | Age | Gender | Relationship to respondent | Marital status | Index child |
|---|---|---|---|---|---|---|
| Total member | Start with respondent | Years | 1=Male<br>2=Female | 1=respondent Mother<br>2=husband<br>3=Son/daughter<br>4=Son-in-law/daughter-in-law<br>5= grand children<br>6=father/mother<br>7=father-in-law/mother-in-law<br>8=brother/sister<br>9= brother-in-law/sister-in-law<br>10=other | 1=Married<br>2=unmarried<br>3=divorced/widowed | (please tick, √) |
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

**B: HOUSEHOLD SOCIOECONOMIC INFORMATION**

| B | Question | Response | Code | |
|---|---|---|---|---|
| B1 | What is your religion? | | 1=Hindu 2=Muslim<br>3=Christian | 4=Sikh<br>5=other |
| B2 | Which community do youbelong to? | | 1=schedule caste<br>2=schedule tribe 3=other backward caste | 4=general<br>88=don't know |
| B3 | What is your **(mother)** literary status? | | 1=primary [1-5]<br>2=upper primary [6-8]<br>3=secondary [9-10]<br>4=senior secondary [11-12] | 5=graduate 6=post graduate<br>7=illiterate<br>88=don't know |
| B4 | What is your husband's **(father)** literary status? | | 1=primary [1-5]<br>2=upper primary [6-8]<br>3=secondary [9-10]<br>4=senior secondary [11-12] | 5=graduate 6=post graduate<br>7=illiterate<br>88=don't know |
| B5 | What is your **(mother)** occupation? | | 1=farmer (crop) 2=agricultural day labor 3=non-agricultural day labor4=service/salaried worker<br>5=small/cottage industry<br>6=business/traders<br>7=rickshaw/van pulling | 8=other self-employment<br>9=hh work/housewife<br>10=maid servant<br>11= physically challenged<br>12= jobless<br>13=other (specify)<br>88=don't know |
| B6 | What is your husband's? **(father)** occupation? | | 1=farmer (crop) 2=agricultural day labor 3=non-agricultural day labor4=service/salaried worker<br>5=small/cottage industry 6=business/traders<br>7=rickshaw/van pulling | 8=other self-employment<br>9=hh work/housewife<br>10=maid servant<br>11= physically challenged<br>12= jobless 13=other (specify)88=don't know |
| B7 | What is your HHs main source of income? | | 1=farmer (crop) 2=agricultural day labor 3=non-agricultural day labor4=service/salaried worker<br>5=small/cottage industry<br>6=business/traders 7=rickshaw/van pulling | 8=other self-employment<br>9=hh work/housewife<br>10=maid servant<br>11= physically challenged<br>12= jobless<br>13=other 88=don't know |
| B8 | Does your HH have a BPLcard? | | 1=yes2=no | 88=Don't know |

| | | | | |
|---|---|---|---|---|
| B9 | What is your HHs monthly income? | | 1=≤5,000<br>2=5001-10,000<br>3=10,001-15,000 | 4=15,001-20,000<br>5=20,001-25,000<br>6=>25,000 |
| B10 | How much of HHs monthly income is spent on food items? | | ***write exact amount/range here*** | |
| B11 | Who all are there in your family (type of family)? | | 1=nuclear<br>2=joint | |
| B12 | Total how many membersstay in your HH? | | ***write number here (refer module A: HH profile)*** | |
| B13 | Type of house<br>***(observe and code)*** | | 1=kuccha (wood, dung)<br>2=pukka (brick, cement) | |
| B14 | Does your family own this house? | | 1=owned<br>2=rented | 3=shared<br>88=Don't know |
| B15 | Does your family possessany land? | | 1=yes<br>2=no | 88=Don't know |
| B16 | Does your family possessany livestock? | | 1=cow/buffalo/bull<br>2=goat/sheep<br>3=hen | 4=other<br>5=none |
| B17 | Does your HH have any of these assets **(read out the asset)**? | | 1=electricity<br>2=radio<br>3=television<br>4=bed<br>5=refrigerator | 6=mobile<br>7=cycle<br>8=two wheeler<br>9=four wheeler |

**C: HOUSEHOLD WATER, SANITATION AND HYGIENE**

| C | Question | Response | Code | |
|---|---|---|---|---|
| C1 | Wheredo you get drinking water from?<br>***(observe, ask and code)*** | | 1=piped water<br>2=tube well<br>3=dug well<br>4=rain water collection | 5=river, dam, lake, pond, canal<br>6=camper/bottle<br>7=other (specify)<br>88=don't know |
| C2 | Do you treat water before drinking? | ***If 2, go to C3*** | 1=yes<br>2=no | 88=don't know |
| C2a | How do you treat drinking water? | | 1=boil 2=use alum<br>3=add bleach/chlorine<br>4=strain through cloth | 5=electric purifier<br>6=stand and settle<br>7=other<br>88=don't know |
| C3 | In the last month, has therebeen any time when your HH ran out of water? | | 1=yes, at least once 2=no, always sufficient | 88=don't know |

| | | | | |
|---|---|---|---|---|
| C4 | How do you prepare yourself before preparing meals?<br>***(Request to demonstrateand code, don't ask do you wash hands)*** | | 1=wash hands<br>2=nothing | 88=don't know |
| C5 | How do you prepare yourself before feeding child***(Request to demonstrate and code, don't ask doyou wash hands)*** | | 1=wash hands<br>2=nothing | 88=don't know |
| C6 | Please show me, where youwash hands?<br>***(observe, ask and code)*** | | 1=water only<br>2=water + soap<br>3=soil + water | 4=other (specify)<br>88=don't know |
| C7 | Do you have toilet in your HH? | ***If 2, go to C11*** | 1=yes<br>2=no | |
| C8 | Please show me the toilet facility?<br>***(observe, ask and code)*** | | 1=flush 2=pit latrine | 3= other (specify) |
| C9 | Who all use the toilet? | | 1=all<br>2=only males<br>3=only females | 4=no one 5=other (specify) |

**D: HOUSEHOLD FOOD SECURITY**

| D | Question | Response | Code |
|---|---|---|---|
| D1 | In the past 4 weeks, did you worry that your HH would not have enough food? | | 1=yes<br>2=no ***(skip to D2)*** |
| D1 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D2 | In the past 4 weeks, were you or any HH member not able to eat the kinds of foods you preferred becauseof a lack of resources? | | 1=yes<br>2=no ***(skip to D3)*** |
| D2 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D3 | In the past 4 weeks, did you or any HH member haveto eat a limited variety of foods due to a lack of resources? | | 1=yes<br>2=no ***(skip to D4)*** |
| D3 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D4 | In the past 4 weeks, did you or any HH member haveto eat some foods that you really did not want to eat because of a lack of resources to obtain other types of food? | | 1=yes<br>2=no ***(skip to D5)*** |
| D4 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D5 | In the past 4 weeks, did you or any HH member haveto eat a smaller meal than you felt you needed because there was not enough food? | | 1=yes<br>2=no ***(skip to D6)*** |
| D5 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D6 | In the past 4 weeks, did you or any other HH member | | 1=yes<br>2=no ***(skip to D7)*** |
| D6 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D7 | In the past 4 weeks, was there ever no food to eat ofany kind in your HH because of lack of resources to get food? | | 1=yes<br>2=no ***(skip to D8)*** |
| D7 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D8 | In the past 4 weeks, did you or any HH member go to sleep at night hungry because there was not enoughfood? | | 1=yes<br>2=no ***(skip to D9)*** |
| D8 a | *How often did this happen?* | | 1=rarely (once or twice)<br>2=sometimes (3-10 times)<br>3=often (>10 times) |
| D9 | In the past 4 weeks, did you or any HH member go awhole day and night without eating anything because there was not enough food? | | 1=yes<br>2=no ***(skip to next section)*** |

## E: MATERNAL ANTENATAL-DELIVERY-POSTNATAL CARE, IYCF KNOWLEDGE & PRACTICES

| E | Question | Response | Code | |
|---|---|---|---|---|
| E1 | What is your age (at present)? | | ***Write exact years*** | |
| E2 | How old were you when you got married (age at marriage)? | | ***Write exact years*** | |
| E3 | How old were you during first pregnancy (age at 1st pregnancy)? | | ***Write exact years*** | |
| E4 | Total, how many times you were pregnant? | | ***Write exact number*** | |
| E5 | Total, how many children you delivered? | | ***Write exact number*** | |
| E6 | Total, how many children you have now? | | ***Write exact number*** | |
| **Antenatal, delivery and postnatal Care** | | | | |
| E7 | Did you register your last pregnancy? | | 1=yes<br>2=no | 88=don't know |
| E8 | Did you have a mother and child protection card *(Mamta Card)* for your last pregnancy? | | 1=yes<br>2=no | 88=don't know |
| E9 | How many times did you receive antenatal care during last pregnancy? | | 1=≥4 times<br>2=<4 times | 88=don't know |
| E10 | During last pregnancy, did you buy/receive any IFA? | ***If no, go to E12*** | 1=yes<br>2=no | 88=don't know |
| E11 | During last pregnancy, for how longdid you consume IFA? | | 1=≥100 days<br>2=<100 days | 88=don't know |
| E12 | Where did you give birth to your last child? | | 1=home 2=institutional (gov.) | 3= institutional (private)4=other (specify) |
| E13 | How was your last child delivered? | | 1=normal<br>2=cesarean | |
| E14 | Did you get any assistance during last delivery? | ***If no, go to E15*** | 1=yes<br>2=no | 88=don't know |
| E14a | Who assisted you? | | 1=no one<br>2=skilled health worker<br>3=TBA | 4=other (specify)<br>88=don't know |
| E15 | Did you receive any postnatal care foryour last delivery? | ***If no, go to E18*** | 1=yes<br>2=no | 88=don't know |
| E16 | When did you receive the PNC? | | 1=within 2 days<br>2=more than 2 days | 88=don't know |
| **IYCF knowledge** | | | | |
| E18 | According to you, when to initiate BF? | | 1=within 1 hour of birth<br>2=After 3-4 hours<br>3=After 2-3 days | 88=don't know |
| E19 | According to you, what should be the duration of exclusive breastfeeding? | | 1=>6 months<br>2= 6 months<br>3=<6 months | 88=don't know |
| E20 | According to you, what all can be given to a child for the first six months? | | 1=only BM<br>2=BM + medicine3=BM + water | 4=BM + some juice<br>5=BM + some food<br>6=other (specify) |
| E21 | According to you, when should onestart giving semi solid food to child along with breastmilk? | | 1=before 6 months<br>2=at 6 months<br>3=at 7,8 months | 4=other 88=don't know |
| E22 | According to you, till how long oneshould continue breastfeeding thechild? | | 1=1 year<br>2=2 years<br>3=3 years | 4=4 years<br>5=5 years 6=other (specify)88=don't know |
| E23 | In terms of feeding practices, according to you, what should be doneif a child experiences any illness? | | 1=stop BF 2=continue BF | 88=don't know |
| E18 | According to you, when to initiate BF? | | 1=within 1 hour of birth<br>2=After 3-4 hours<br>3=After 2-3 days | 88=don't know |

| IYCF practices | | | | |
|---|---|---|---|---|
| E24 | Did you ever breastfeed your child? ***(Indicator: Any BF)*** | ***If no, go to F*** | 1=yes<br>2=no | |
| E25 | How soon after birth did you put thechild to the breast for the first time?***(Indicator: EIBF)*** | | 1=within 1 hour of birth<br>2=After 3-4 hours<br>3=After 2-3 days | 88=don't know<br>99=NA |
| E26 | Are you currently BF your child **(Indicator: Continued BF)** | | 1=yes<br>2=no | |
| E27 **0-5.9 m** | In addition to BM, what else did you give to the child in the 1st week of birth? ***(Indicator: EBF)*** | | 1=animal milk<br>2=janam ghuti<br>3=water | 4=jaggery/honey<br>5=nothing 88=don't know 99=NA |
| E28 **0-5.9 m** | In addition to BM, what else did you give to the child from birth until date? ***(Indicator: EBF)*** | | 1=only BM<br>2=BM + medicine<br>3=BM + water | 4=BM + some juice<br>5=BM + some food<br>6=other (specify)<br>99=NA |
| E29 **6-8.9 m** | At what age did you start feeding foodto the child? ***(Indicator: Introduction to CF)*** | | 1=>6 months<br>2= 6 months<br>3=<6 months | 88=don't know<br>99=NA |
| E30 | In terms of feeding practices, what doyou do when your child experiences any illness? | | 1=stop BF<br>2= continue BF | 88=don't know<br>99=NA |

**F: WOMEN EMPOWERMENT**

| F | Question | Response | Code |
|---|---|---|---|
| **LEADERSHIP** | | | |
| F1 | Do you feel like an important member of your HH? | | 1=no<br>2=sometimes<br>3=always |
| F2 | Do you think the members of your HH listen toyou and respect your opinion? | | 1=no<br>2=sometimes<br>3=always |
| F3 | If you have a problem at home, do you feel confident enough to resolve it on your own? | | 1=no<br>2=sometimes<br>3=always |
| **DECISION MAKING** | | | |
| F4 | Who has the last word regarding what to do if a member of HH is sick? | | 1=partner 2=respondent<br>3=respondent + partner<br>4=respondent + other family members |
| F5 | Who has the last word regarding decisions on kids' schooling/care taking/healthcare seeking? | | 1=partner 2=respondent<br>3=respondent + partner<br>4=respondent + other family members |
| F6 | Who has the last word regarding whether to have another child or not? | | 1=partner 2=respondent<br>3=respondent + partner<br>4=respondent + other family members |
| **MOBILITY** | | | |
| F7 | Are you habitually authorized to go to local marketfor purchases? | | 1=alone<br>2=only if I'm accompanied<br>3=not at all |
| F8 | Are you habitually authorized to go to health center or traditional doctor? | | 1=alone<br>2=only if I'm accompanied<br>3=not at all |
| F9 | Are you habitually authorized to go to friends in village? | | 1=alone<br>2=only if I'm accompanied<br>3=not at all |
| **ECONOMIC SECURITY** | | | |
| F10 | Can you afford the finances needed to buy fruitsand vegetables? | | 1=no<br>2=yes |
| F11 | Can you afford the finances needed to buy clothes for yourself? | | 1=no<br>2=yes |

| | | | |
|---|---|---|---|
| **MALE INVOLVEMENT** | | | |
| F12 | Do the adult male members of your householdhelp you prepare meals? | | 1=not at all<br>2=very rarely<br>3=from time to time<br>4=regularly<br>5=always |
| F13 | Do the adult male members of your householdhelp you for other HH works? | | 1=not at all<br>2=very rarely<br>3=from time to time<br>4=regularly 5=always |

**G: MATERNAL HEALTH AND NUTRITION SERVICE AWARENESS AND UTILIZATION**

| **G** | **Question** | **Response** | **Code** | |
|---|---|---|---|---|
| G1 | When you get sick, where do you generally go for treatment? | | 1=hospital (gov.)<br>2=hospital private<br>3=medical store | 4=home treatment<br>5=other (specify) |
| G2 | When your child gets sick, where do yougo for treatment? | | 1=hospital (gov.)<br>2=hospital private<br>3=medical store | 4=home treatment<br>5=other (specify) |
| G3 | Do you know about MAMTA Diwas? | ***If no, go to G4*** | 1=yes<br>2=no | 88=don't know |
| G3a | Have you ever attended MAMTA divas? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G3b | What services did you avail on MAMTA divas? | | 1=Information on health<br>2=growth health check up<br>3=immunization | 4=primary treatment<br>5=referral 6=counseling<br>99=NA |
| G4 | Do you know about AWC? | ***If no, go to G5*** | 1=yes<br>2=no | 88=don't know |
| G4a | Have you visited AWC? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G4b | What services did you avail from AWC? | | 1=supplementary nutrition<br>2=preschool non-formal education<br>3=nutrition and health education | 4=immunization<br>5=health checkup<br>6=referral services<br>99=NA |
| G4c | Is your child registered at local AWC? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G4d | Do you receive balbhog from AWC? | | 1=yes<br>2=no | 88=Don't know<br>99=NA |
| G4e | Does your child consume BalShakti THR? | | 1=yes<br>2=no | 88=Don't know<br>99=NA |
| G5 | Do you know about sub-centres or health and wellness centre? | | 1=yes<br>2=no | 88=don't know |
| | | If no, go to G6 | | |
| G5a | Have you visited sub centres or health and wellness centre? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G5b | What services did you avail from sub centres or health and wellness centre? | | 1=maternal and child health<br>2=family welfare<br>3=nutrition counseling<br>4=immunization | 5=diarrhea control<br>6=control of non-communicable diseases<br>7=referral<br>99=NA |
| G6 | Do you know about Primary Health Centres (PHC)? | | 1=yes<br>2=no | 88=don't know |
| | | If no, go to G7 | | |
| G6a | Have you visited PHC's? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G6b | What services did you avail from PHC's? | | 1=OPD<br>2=IPD | 3=referral 99=NA |

| | | | | |
|---|---|---|---|---|
| G7 | Do you know about Community Health Centres (CHC)? | | 1=yes<br>2=no | 88=don't know |
| | | If no, go to G8 | | |
| G7a | Have you visited CHC's? | | 1=yes<br>2=no | 88=don't know<br>99=NA |
| G7b | What services did you avail from CHC's? | | 1=OPD<br>2=IPD | 3=referral 99=NA |
| G8 | Do you know about NRC/CMTC? | | 1=yes<br>2=no | 88=don't know |
| G9 | Have you ever admitted your child to NRC/CMTC? | | 1=yes<br>2=no | 88=don't know |

**H: USE OF SUPOSHAN PROGRAM COMPONENT**

| **H** | **Question** | **Response** | **Code** | |
|---|---|---|---|---|
| H1 | Have you ever heard of *SuPoshan Sangini*? | | 1=yes<br>2=no | 88=don't know |
| H2 | Have you ever been visited by *SuPoshan Sangini*? | | 1=yes<br>2=no | 88=don't know |
| H2a | How many times in the last six months *SuPoshan Sangini* visited you? | | write in numbers | |
| H2b | In last past few months, what kind of health services/demonstration/ information did you receive from *SuPoshan Sangini*? | | 1=anthropometry<br>2=cooking shows<br>3=demonstration<br><br>on food and hygiene<br>4=family counselling on gov. schemes<br>5=FGDs on nutrition, hygiene, and health | 5=Hb screening<br>7=kitchen garden<br>8=referral to NRCs/CMTCs<br>9=other (specify)<br>88=don't know |
| H3 | Have you heard about SuPoshan Vatika? | ***If no, go to I*** | 1=yes<br>2=no | |
| H3a | Do you have Vatika in your premises? | | 1=yes<br>2=no | |
| H3b | Do you grow anything in the SuPoshan Vatika? | | 1=yes<br>2=no | |

**I: MATERNAL DIETARY DIVERSITY**

| 24-hour recall (previous day) | | |
|---|---|---|
| **Meal & time** (breakfast/ lunch/dinner) | **Recipe** | **Ingredients** |
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**MATERNAL DIETARY DIVERSITY**

| # | Food group | | Food items | Response | Code |
|---|---|---|---|---|---|
| 1 | Grains | Coarse | soyabean, bajra, jowar, millets | | 1=yes<br>2=no |
| | | Small | wheat, rice, corn, Ragi, barley, oat,rye | | |
| 2 | Roots andtubers | | potatoes, beet root, carrot, radish,water chestnuts, sweet potato | | |
| 3 | Pulses (beans, peas and lentils) | | mature beans or peas (fresh ordried seed), lentils or bean/pea products, hummus, tofu andtempeh | | |
| 4 | Nuts and seeds | | almond, cashewnut, groundnut, walnuts, gingelly seeds, mustard seeds, niger seeds | | |
| 5 | Milk and milk products | | milk, cheese, yoghurt or other milk products but not including butter, ice cream, cream or sour cream | | |
| 6 | Organ meat | | liver, kidney, heart or other organ meats or blood-based foods | | |
| 7 | Meat and poultry | | beef, pork, lamb, goat, rabbit, wild game meat, chicken, duck or other bird | | |

| | | | | | |
|---|---|---|---|---|---|
| 8 | Fish and seafood | | fresh or dried fish, shellfish or seafood | | |
| 9 | Eggs | | eggs from poultry or any other bird | | |
| 10 | Dark green leafy vegetables | | list examples of any medium-to- dark green leafy vegetables | | |
| 11 | Vitamin A-rich vegetables, roots and tubers | | ripe mango, ripe papaya | | |
| 12 | Vitamin A-rich fruits | | ripe mango, ripe papaya | | |
| 13 | Other vegetables | | tomato, okra, brinjal, green peas, capsicum, pumpkin, tinda | | |
| 14 | Other fruits (Rare) | | avocado, coconut flesh | | |

**J: CHILD DIETARY DIVERSITY**

| **24-hour recall (previous day)** | | |
|---|---|---|
| **Meal & time**(breakfast/ lunch/dinner) | **Recipe** | **Ingredients** |
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**CHILD DIETARY DIVERSITY (6m – 2 yr)**

| # | Food group | Food items | Response | Code |
|---|---|---|---|---|
| 1 | Grains, roots, tubers | jowar, bajra, wheat, rice, poha, suji, potato, onion,sweet potato, yam | | 1=yes<br>2=no |
| 2 | Pulse, Legumes, nuts | chana, moong, sprouts, peas, groundnuts | | |
| 3 | Dairy products | milk, curd, paneer, buttermilk | | |
| 4 | Flesh food | goat/beef, fish, chicken | | |
| 5 | Egg | | | |
| 6 | GLV (Vitamin A rich fruits and vegetable) | spinach, cabbage, methi, cauliflower | | |
| 7 | Other Veg, fruits | papaya, apple, mango, chiku , banana, water melonetc, any seasonal fruit | | |

**CHILD DIETARY DIVERSITY (2 yr – 5 yr)**

| # | Food group | | Food items | Response | Code |
|---|---|---|---|---|---|
| 1 | Cereals | | Wheat, Rice, Jowar, Bajra, Puffed rice, Rice flakes etc. | | 1=yes<br>2=no |
| 2 | Roots and Tubers | | Sweet potato, Yam, Radish | | |
| 3 | Vitamin A Rich vegetables | | Carrot, Beet, Pumpkin | | |
| 4 | Dark Green leafy vegetables | | Spinach, Amaranth, Colocasia, Fenugreek leaves, Drumstick leaves etc. | | |
| 5 | Other vegetables | | Tomato, Onion, Ladies finger, Bottle gourd etc. | | |
| 6 | Vitamin A rich fruits | | Papaya, Mango etc. | | |
| 7 | Other fruits | | Apple, Amla, Pineapple, Watermelon, Custard Apple, Banana, etc. | | |
| 8 | Organ meat | | Liver, kidney, heart or other organ meats or blood-based foods | | |
| 9 | Flesh meat | | Beef, pork, lamb, goat, rabbit, game, chicken, duck, other birds, insects | | |
| 10 | Eggs | | | | |
| 11 | Fish and Seafood | | | | |
| 12 | Legumes, nuts and Seeds | | Red gram, Bengal gram, Almond, Pista, Cashew, Green gram, Rajmah, Soyabean, Cowpea | | |
| 13 | Milk and Milk products | | Milk, Buttermilk, Curd, Khoa | | |
| 14 | Oils and Fats | | Cooking oil, Butter, Ghee | | |
| 15 | Sweets | | Sugar, Honey, Patasha, Jaggery etc. | | |
| 16 | Spices, Condiments and Beverages | | Cinnamon, Cardamom, Nutmeg, Cloves, Tea, Coffee etc. | | |

**K: CHILDHOOD ILLNESS AND HEALTH SEEKING BEHAVIOR**

| K | Question | Response | Code | |
|---|---|---|---|---|
| Has your child had any of the following symptoms in the past two weeks? | | | | |
| K1 | Fever | ***If 2, go to K2*** | 1=yes<br>2=no | 88=don't know |
| K1a | Did you ask for advice or seek treatment whenthe child had fever | ***If 2, go to K2*** | 1=yes<br>2=no | 88=don't know |
| K1b | Place of advice/treatment for fever | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K2 | Cold/cough | ***If 2, go to K3*** | 1=yes<br>2=no | 88=don't know |
| K2a | Did you ask for advice or seek treatment whenthe child had cough/cold | ***If 2, go to K3*** | 1=yes<br>2=no | 88=don't know |
| K2b | Place of advice/treatment for cold/cough | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K3 | Breathing difficulty | ***If 2, go to K4*** | 1=yes<br>2=no | 88=don't know |
| K3a | Did you ask for advice or seek treatment whenthe child had breathing difficulty | ***If 2, go to K4*** | 1=yes<br>2=no | 88=don't know |
| K3b | Place of advice/treatment for breathing difficulty | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K4 | Diarrhea | ***If 2, go to K5*** | 1=yes<br>2=no | 88=don't know |
| K4a | Did you ask for advice or seek treatment whenthe child had diarrhea | ***If 2, go to K5*** | 1=yes<br>2=no | 88=don't know |
| K4b | Place of advice/treatment for diarrhea | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K5 | Vomiting | ***If 2, go to K6*** | 1=yes<br>2=no | 88=don't know |
| K5a | Did you ask for advice or seek treatment whenthe child had vomiting | ***If 2, go to K6*** | 1=yes<br>2=no | 88=don't know |
| K5b | Place of advice/treatment for vomiting | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K6 | Malaria | | 1=yes | 88=don't know |
| | | If 2, go to K7 | 2=no | |
| K6a | Did you ask for advice or seek treatment when the child had malaria | | 1=yes 2=no | 88=don't know |
| | | If 2, go to K7 | | |
| K6b | Place of advice/treatment for malaria | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |
| K7 | Loss of appetite | | 1=yes 2=no | 88=don't know |
| | | If 2, go to L | | |
| K7a | Did you ask for advice or seek treatment when the child had loss of appetite | | 1=yes 2=no | 88=don't know |
| | | If 2, go to L | | |
| K7b | Place of advice/treatment for loss of appetite | | 1=private<br>2= SC/PHC/CHC | 3=DH<br>4=CMTC/NRC |

**L: CHILD IMMUNIZATION**

| L | Stage | Immunization | Response | Code | Verified with immunization card (√) |
|---|---|---|---|---|---|
| L1 | At birth | BCG | | 1=yes2=no 88=don't know99=NA | |
| L2 | | Hepatitis B at birth | | | |
| L3 | | Oral polio Vaccine (OPV) | | | |
| L4 | At 1.5 m | OPV 1 | | | |
| L5 | | Pentavalent 1 | | | |
| L6 | | Rota virus 1 | | | |
| L7 | At 2.5 m | OPV 2 | | | |
| L8 | | Pentavalent 2 | | | |
| L9 | | Rota virus 2 | | | |
| L10 | At 3.5 m | OPV 3 | | | |
| L11 | | Inactivated Polio Vaccine | | | |
| L12 | | Pentavalent 3 | | | |
| L13 | | Rota virus 3 | | 1=yes2=no 88=don't know99=NA | |
| | | | | | |
| L14 | At 9 m | Measles 1 dose | | | |
| L15 | | Vitamin A 1 dose | | | |
| L16 | At 16-24 m | DPT booster 1 (16-24 m) | | | |
| L17 | | OPV booster (16-24 m) | | 1=yes2=no 88=don't know99=NA | |
| L18 | | Measles 2 dose (16-24 m) | | | |
| L19 | | Vitamin A 2 (16 m) | | | |
| L20 | | Vitamin A 3 (24 m) | | | |
| | | | | | |
| L21 | At 30 m | Vitamin A 4 | | | |
| L22 | At 36 m | Vitamin A 5 | | | |
| L23 | At 42 m | Vitamin A 6 | | | |
| L24 | At 48 m | Vitamin A 7 | | | |
| L25 | At 54 m | Vitamin A 8 | | | |
| L26 | At 60 m | Vitamin A 9 | | | |

**M: ANTHROPOMETRY**

| | **Anthropometry** | **Response/value** | | | | | | **Remark** |
|---|---|---|---|---|---|---|---|---|
| M1 | Child Weight [kg] | | | | | | | Up to 3 decimal place |
| | Example | 0 | 9 | . | 1 | 0 | 0 | |
| | **Anthropometry** | **Response/value** | | | | | | **Remark** |
| M2 | Child Length/height [cm] | | | | | | | Up to 1 decimal place |
| | Example | 0 | 7 | 8 | . | 5 | | |
| | **Anthropometry** | **Response/value** | | | | | | **Remark** |
| M3 | Child MUAC [cm] | | | | | | | Up to 1 decimal place |
| | Example | 1 | 1 | 5 | . | 2 | | |

| | **Anthropometry** | **Response/value** | | | | | | **Remark** |
|---|---|---|---|---|---|---|---|---|
| M4 | Mother Weight [kg] | | | | | | | Up to 3 decimal place |
| | Example | 5 | 5 | . | 1 | 0 | 0 | |
| | **Anthropometry** | **Response/value** | | | | | | **Remark** |
| M5 | Mother Height [cm] | | | | | | | Up to 1 decimal place |
| | Example | 1 | 5 | 1 | . | 6 | | |

# Annexure 2

## Qualitative Interview Guide

**1)Interview guide – mothers**

Date:
Block:
Village:

Name of respondent:

**Section 1: Program acceptance and Impact**

1. Sangini workers from SuPoshan program have been visiting your village. Can you tell me what were the main areas in which she has given you information? Was there any information that was new to you?
2. Have you attended any activity conducted by her?
3. [Probe for FGD, cooking demonstration, kitchen garden] What are your thought about them? How useful do you find them? What did you like and dislike? Why?
4. Do you think SuPoshan has changed your dietary and feeding practices? How have they changed? Could you explain with some examples of what you do different now?
5. [Probe for how and what they consume, how and what they feed their child, cooking practices, access nutrition-related program and service and others].
6. Out of the messages or practices you may have learned from the Sangini, which were easy to adopt for you? Which were difficult? Why? Are there any you have not able to do? Why?
7. Was there any advice the Sangini gave you around diet and feeding that you did not agree with? What could be the reason that some mothers find it difficult to adopt them?

**Section 2: Program Scalability**

1. How suitable do you think the Sangini workers are for their job? How much do people trust what they say? How does this compare to how much they trust an AWW/ASHA? Would there be anything that would make her more acceptable to mothers like you?
2. Is there anything that can be done to improve the program? Is there any activity or topic for which you would have liked the Sangini worker to give you more information?

## 2) Interview guide – fathers

Date:
Block:
Village:
Name of respondent:

1. Do you know about SuPoshan Sangini (the lady comes in blue uniform from Adani Foundation)
2. Have you ever attended any information session or counselling session at HH or community level.

3. Can you tell us about the information that you have received from Sangini about your role inensuring Nutrition to your child?

4. Can you describe what you understand about the role of nutrition on a child's mental and physical growth andhow they are best linked with the SuPoshan Project, please tell us the information provided by Sangini?

5. Can you tell us what sangini have informed you about the various solutions to bring children out of malnutritionfrom different levels of malnutrition?

6. Has anyone other than Sangini talked with you on your role to ensure right food and nutrition for your familyand yourself? If yes, then please share what information you have received from them

### 3) Interview guide – Anganwadi worker / ASHA Worker

Date:
Block:
Village:
Name of AWC:
Tenure as AWW:

1. Can you tell us something about how Sangini supported you in identifying malnourished childrenfrom the village?
   ***Probe.*** *(Is there any protocol that sangini followed for identifying and differentiating malnourished andseverely malnourished children from healthy children.)*

2. Can you please describe how sangini has facilitated and supported in terms of linking community with AWW services, growth monitoring, and community mobilization?

3. What support does Sanginis provide in referral of clinically malnourished children to NRC or CMTC?

4. What was the role of Sangini on Mamta divas?
   ***Probe.*** How Sangini mobilized community to bring them at AWC on Mamta Diwas.

5. How did Sangini supported in the activities like cooking demonstrations and promoting kitchengardening at village level?

6. How did sangini help in spreading awareness on healthy eating and nutrition?

7. Describe about demand of Poshan Aahar and THR in last two years, also tell us about how sanginiplayed her role in mobilizing community on use of THR/Poshan Aahar

8. How anemia control program is celebrated in your Anganwadi center, and what is the role of sangini in the program?

9. Can you tell us about the referrals of children to NRC/CMTC (how it is compared to last two years ifincreased, ask her reason, if decreased, ask her reason why so?)
   ***Probe*** Role of sangini in referrals

## 4) Interview guide – SuPoshan Sangini

Date:
Block:
Village:
Respondent ID:
Tenure as Sangini:

**Section 1: Success and Challenges**

1.1 First of all, I would like to know about your role in the SuPoshan program. Could you briefly describe it?

1.2 What was easy for you to do as part of your job? Were there any challenges you faced while implementing the program in the community? How did you address them? What helped in overcoming these challenges?
[Probe for community engagement, program acceptance, logistics, referrals, malnutrition management, demonstrative sessions, working with frontline workers and others].

1.3 How well do you think the training equipped you with skills necessary for your role? What were key skills that you learnt?

**Section 2: Program Impact**

1.1 What has been the major success of the program in curbing the malnutrition in your area? What do you think influenced this change?

1.2 What is the most significant behaviour change you have observed in the community? What was easy for family to adopt and what was difficult? What do you think are the reasons each behaviour that is practiced or not practiced?

**Section 3: Future recommendation**

3.1 How the program can be further improvised? Is there any particular strategy or topic that should be included in the program to make it more effective or reach more beneficiaries?

**5) Interview guide – CHO, MO, MS, CDPO, THO, DPO, NRC staff**

Date:

Block:

Village:

Dept.:

Designation:

Name of respondent:

Tenure:

**Section 1: Stakeholder involvement**

1.1 First, could you describe your involvement in the Suposhan programme? Has it changed since the launch of the program? Were there any challenges that you faced supporting program implementation?
[Probe - initiate collaboration and convergence, develop infrastructure or personnel capacity, program monitoring and others] How did you address them?

**Section 2: Program impact**

2.1 Do you think SuPoshan program has helped address the challenges of malnutrition in Narmada? What significant changes have you noticed in your area? Could you explain it with some examples? [Probe for utilization of service at your centre, feeding practices, child growth, utilization of health service at your centre and others]

2.2 If yes, what could the reason for these changes? Which strategy or activity has been most effective? Why do you think so? If not, what are persisting gaps? What could be the reasons?
[Explore program-related and extrinsic factors]
How do you think these could be addressed?
[Prompt if needed - poor community engagement strategy, limited local resources, inadequate training, migration of beneficiaries, social structure or any other]?

2.3 How suitable do you think the Sangini workers are for their job? How does she compare to the ASHA or ANM? Would there be anything that would make them acceptable in the community?

**Section 3: Program scalability**

3.1 Is there anything that can be done to improve the program?
[Explore in terms of acceptability, effectiveness and coverage.]

3.2 How much feasible it would be to assimilate SuPoshan in other state level nutrition programmes? What would be essential? What could be the challenge? Could these challenges be addressed?

**6) Interview guide – SuPoshan Vatika**

1. How did you learn about the SuPoshan Vatika garden initiative, and what motivated your family to participate?

2. Can you describe the process of installing the SuPoshan Vatika garden at your home? Were there any challenges or interesting experiences during the installation?

3. What types of fruits, vegetables, or herbs are you growing?

4. How has the experience been in maintaining the SuPoshan Vatika garden? Have you encountered any challenges in maintaining the garden, and how have you addressed them?

5. How frequently do you use the produce from the SuPoshan Vatika garden in your family's meals? How have these newfound skills influenced your family's dietary habits and overall nutrition?

6. From your perspective, how has the SuPoshan Vatika garden initiative impacted your family's health and nutrition?

7. Are there any aspects of the SuPoshan Vatika initiative that you feel could be improved or enhanced? If so, what suggestions do you have?

**7) Interview guide – Families of SAM recovered children**

1. How familiar are you with the SuPoshan program, and how did you learn about it?

2. How and when did you first become aware that your child was experiencing severe acute malnutrition?

3. Can you share your experiences with the identification and diagnosis of your child's malnutrition?

4. What kinds of support or interventions did your child receive as part of the SuPoshan program? (Probe for referral, Sangini's support etc.)

5. How do you perceive the long-term impact of the SuPoshan program on your child's health and well-being?

6. What do you believe are the strengths of the SuPoshan program from your family's perspective?

7. Are there any aspects of the program that you think could be improved? If so, what suggestions do you have?