SUAAHARA, AID-367-A-11-00004

Process Evaluation

Results from Frontline Worker and Household Surveys

September 11, 2015

This document is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents of this report do not necessarily reflect the views of USAID or the United States Government.

ACKNOWLEDGEMENT

We would like to extend our sincere gratitude to all of the *Suaahara* implementation partners based in Nepal and the United States for their contribution throughout the various stages of these surveys. The constructive feedback provided both by senior level program staff and field-based implementers, particularly during feedback workshops in Kathmandu in April 2015, facilitated the successful completion of this process evaluation.

We also would like to thank the hundreds of women in the study locations who used their valuable time to engage in this effort. We are also grateful to the Female Community Health Volunteers (FCHVs), *Suaahara* Field Supervisors, and other frontline workers (FLWs) who helped us to identify the women for the survey and ensure that the survey could be completed without interruption.

Our sincerest thank you to Valley Research Group (VaRG) including the senior leadership as well as the data collectors and supervisors who worked tirelessly from training through data collection to ensure the highest standards of data quality were upheld throughout the study. We would like to thank the leaders of the study and authors of the preliminary reports Kenda Cunningham Akriti Singh.

Suaahara program is implemented under the leadership of the Government of Nepal by a consortium of seven partners: Save the Children in partnership with Helen Keller International, Johns Hopkins University Bloomberg School of Public Health Center for Communication Programs, JHPIEGO, Nepal Technical Assistance Group, Nepal Water for Health, and Nutrition Promotion and Consultancy Service.

This study would not have been possible without the generous support from USAID.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

ACRONYMS

ANC	Antenatal Care
BMI	Body Mass Index
CCP	Center for Communication Programs (of Johns Hopkins)
DAG	Disadvantaged Group
DHS	Demographic and Health Surveys
EHA	Essential Nutrition Actions
ENA	Essential Hygiene Actions
FCHV	Female Community Health Volunteer
FLW	Front Line Worker
FP	Family Planning
FS	Field Supervisor
GESI	Gender and Social Inclusion
GoN	Government of Nepal
HFP	Homestead Food Production
HH	Household
HKI	Helen Keller International
IEC	Information Education and Communication
IFPRI	International Food Policy Research Institute
IYCF	Infant and Young Child Feeding
LNGO	Local Non-Governmental Organization
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MIYCF	Maternal Infant and Young Child Feeding
MCN	Maternal and Child Nutrition
MNCHS	Maternal, Newborn, and Child Health Services
NTAG	Nepali Technical Assistance Group
NEWAH	Nepal Water for Health
NPCS	Nutrition Promotion and Consultancy Services
PE	Process Evaluation
PEAP	Program Exposure and Adoption of Practices
PEGS	Policy Environment and Government Structures
PF	Peer Facilitator
PNC	Postnatal Care
PPS	Probability Proportional to Size
SBCC	Social Behavior Change Communication
USAID	United States Agency for International Development
VARG	Valley Research Group
VDC	Village Development Committee
WASH	Water, sanitation, and Hygiene

I. EXECUTIVE SUMMARY

INTRODUCTION

Suaahara is a USAID funded five-year (2011-2016) integrated nutrition project that supports the Government of Nepal to address the poor nutritional status of women and children in the first 1,000 days of life in 41 districts. *Suaahara* has four key results to achieve its overall goal to increase and sustain the health and well being of Nepalis by improving the nutritional status of women and children under 2 years of age by achieving the following four intermediate results:

(1) Improved household health and nutrition behaviors

(2) Increased use of quality nutrition and health services by women and children

(3) Increased consumption of diverse and nutritious foods by women and children

(4) Strengthened coordination on nutrition between government and other stakeholders

The program focuses on improving health and nutrition behaviors at the household level through promotion of Essential Nutrition Actions (ENA), particularly Infant and Young Child Feeding (IYCF), and addressing other determinants of under-nutrition, such as availability of and access to food, water, sanitation and hygiene, quality health care, child spacing and socio-cultural factors including gender and marginalization.

METHODS

The process evaluation described in this report occurred in a sub-set of the districts that were visited during the baseline. The selection of districts occurred as follows. First excluded half of the eight district pairs that were included in the baseline survey because four of the baseline comparison districts were expected to become *Suaahara* intervention districts. The four remaining matched pairs were selected and included at least one matched pair per agro-ecological zone. Within each district, the VDCs and wards that were randomly selected for inclusion in the baseline were revisited. Within the districts resulted data collection occurred in the same 120 communities sampled at baseline. A total of

The process evaluation was purposive in nature and aimed to assess each element of the program and talk to a wide variety of program implementers without worrying about coverage of a large geographical area. Sampling did not attempt to achieve statistical power. The results of interviews with 734 front line workers (FLW) and 480 mothers are presented here. A separate qualitative study, which conducted focus group discussions and shadowing of frontline workers, is presented separately.

RESULTS

Several positive results were observed among FLWs. For example, FLWs in *Suaahara* areas were more likely to have attended training in the last year and were more likely to have received training on key skills such as multi-sector collaboration & group facilitation. In *Suaahara* areas, knowledge on some items such as ANC recommendations are high, even among FLWs from non-health sector. Some knowledge gaps still remain, for example, appropriate child feeding during and after illness.

Among 1,000 days mothers, those in *Suaahara* areas report more contact with FLWs, have access to more sources of information on health, nutrition, family planning, WASH and homestead food production compared to those in comparison districts. Some key practices promoted by *Suaahara* are higher in intervention areas. In *Suaahara* areas, women are more likely to deliver in health facilities with a trained provider. They are more likely to consume a more nutritious diet during pregnancy – extra meals and dairy. Children in *Suaahara* areas are more likely to have been given colostrum at birth, more likely to exclusively breastfeed and consume more diverse diets that include eggs and dairy. *Suaahara* area households are more likely to have hand washing stations that have soap and water. Most notably, the observed disparities in access to services, access to information and health behaviors between DAG and non-DAG households are smaller in *Suaahara* areas.

CONCLUSION

Several key features distinguish the FLWs in *Suaahara* areas from those in comparison areas. 1) They have access to and are using the SBCC tools developed by *Suaahara*. 2) They are making more frequent contacts with 1,000 days mothers than their counterparts in comparison areas, not only during home visits and health mothers' groups, but at other opportunities as well. 3) The quality of antenatal care, post-natal care and family planning services are higher in *Suaahara* areas, based on mothers' reports of the content of their visits. In addition, during post natal care, *Suaahara* FLWs are providing hands-on support necessary for successful breastfeeding, such as helping mothers with positioning and attachment to a greater extent than FLW in comparison areas. 5) Finally, they are reaching DAG households with almost the same frequency as non-DAG households.

In addition to the interpersonal contact with FLWs, the mass media campaign is also reaching target audiences and reinforcing the *Suaahara* messages. Exposure to mass media, specifically the *Bhanchhin Aama* radio drama and hoarding boards is high, even among DAG households. This combination of interventions and the deliberate effort to reach DAG households seems to have resulted in higher knowledge among 1,000 days mothers for most of the *Suaahara* messages and the adoption of some of the practices promoted by *Suaahara*, even among mothers identified as DAG.

II. INTRODUCTION

Suaahara is a USAID funded five-year (2011-2016) integrated nutrition project that supports the Government of Nepal to address the poor nutritional status of women and children in the first 1,000 days of life in 41 districts. The project was initially planned to be implemented in 25 districts and was increased to 41 in year four in order to expand Suaahara's multi-sectoral model to Feed the Future districts. *Suaahara* has four key results to achieve its overall goal to increase and sustain the health and well-being of Nepalis by improving the nutritional status of women and children under two years of age by achieving the following four intermediate results:

1. Improved household health and nutrition behaviors
2. Increased use of quality nutrition and health services by women and children
3. Increased consumption of diverse and nutritious foods by women and children
4. Strengthened coordination on nutrition between government and other stakeholders

The program focuses on improving health and nutrition behaviors at the household level through promotion of Essential Nutrition Actions (ENA), particularly Infant and Young Child Feeding (IYCF), and addressing other determinants of under-nutrition, such as availability of and access to food, water, sanitation and hygiene, quality health care, child spacing and socio-cultural factors including gender and marginalization. *Suaahara*'s target population is 1,000 Days households (i.e. households with pregnant women and/or children under 2), with a particular emphasis on disadvantaged groups (DAGs).

Suaahara is led by Save the Children with 6 implementing partners; Helen Keller International (HKI), JHPIEGO, Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (CCP), Nepal Water for Health (NEWAH), Nutrition Promotion and Consultancy Services (NPCS) and Nepali Technical Assistance Group (NTAG). *Suaahara*, is being implemented in partnership with the Government of Nepal (GoN).

The International Food Policy Research Institute (IFPRI) is responsible for leading, designing and implementing an independent, external impact evaluation of the *Suaahara* project. In addition to the external impact evaluation *Suaahara* has four key sources of data for routine monitoring; routine data collection, health system data, LQAS and operations research. These monitoring and evaluation tools provide strong and substantial information about program outputs, effectiveness, and impacts towards *Suaahara's* nutrition objectives.

In order to provide detailed information on project implementation, exposure, utilization and adoption of recommended practices, *Suaahara* staff designed a process evaluation (PE). The process evaluation was planned to capture information about the implementation of project activities by front line workers and local governments, and the application of the skills, knowledge and materials to providing nutrition and health services to *Suaahara* target households. Given the central role of front line workers in delivering *Suaahara* activities at the community level and the need to understand whether target households were being exposed to project SBCC activities, the PE was designed to answer the following questions:

1. How effective are *Suaahara*'s methods at improving the knowledge and skills of FLWs and at sending messages and materials to the community via FLWs?
2. To what extent are *Suaahara* interventions, specifically the mass media campaign and exposure to FLWs, reaching the target and secondary audiences?

3. To what extent and how does Nepal's policy environment and the government structures at the national, district, village development committees (VDC) and ward levels facilitate or hinder coordination and implementation of nutrition programs across sectors?

The results of the PE will advance understanding about how, why and if the *Suaahara* interventions are being implemented as planned and how the program components are being utilized by front line workers and mothers and pregnant women. The PE was be based on the "theories of change" model, which maps the way the causal pathways from interventions through impact are anticipated using program impact pathways (PIP). Due to the different focuses of the research questions the PE was divided into three studies

- **Program Exposure and Adoption of Practices** (PEAP) to assess overall program exposure to all of *Suaahara*'s various platforms, with an emphasis on the reach of the mass media campaign; the extent and frequency with which households are exposed to frontline workers; and whether the *Suaahara* strategy to provide additional support (material and communications) to targeted disadvantaged households is happening as designed.
- **Frontline Workers** (FLW) to assess their delivery of services and interactions with beneficiaries
- **Policy Environment and Government Structures** (PEGS) to look at program implementation at various level - national, district, VDC, and ward, including multi-sectoral policies and coordinating bodies

This report focuses on the results of the PEAP and FLW studies which address research questions one and two. The PEGs report, which is forthcoming will address research question three and aims to increase understanding of *Suaahara's* efforts to improve multi-sectoral coordination and improve governance.

III. DESCRIPTION OF SUAAHARA

Figure 1 Map of Suaahara Intervention Districts and Phasing

Suaahara is implemented with the Government of Nepal and local NGOs (LNGOs) through existing networks of public sector front line workers such as: Female Community Health Volunteers (FCHVs,) Health Facility Staff (health assistants, Auxiliary Health workers, Auxiliary nurse midwives, health facility in-charge), livestock and agricultural extension workers, social mobilizers, Village WASH committees and Community hygiene and sanitation facilitators. Project activities are implemented at wards and VDC level. A new cadre of worker, *Suaahara* Field Supervisors, support front line workers and government agencies at the district, VDC and ward levels.

Working through the local government and building capacity at all levels *Suaahara* is laying the foundation for sustainability of impact. *Suaahara* operates at large at-scale reaching over 625,000 households as of 2015, and targets the most vulnerable areas and households. Complementing its district wide interventions for MIYCN, WASH and MCH/family planning the project also targets the most food insecure VDCs in certain districts with homestead food production activities (seeds for vegetable production and chicks for poultry production). In order to support the most at risk, DAG households are also reached through outreach clinics, radio listening discussion groups, and nutrition governance activities and advocacy. Depending on their vulnerability to food insecurity and the proportion of households that are considered disadvantaged, VDCs receive one of three *Suaahara* intervention packages: Core, Core+ or

Core++. In areas where many people are disadvantaged or at risk of food insecurity, changing behaviors may require addressing barriers not addressed by SBCC strategies alone. This may require providing additional material support such as making food more available or ensuring that services are accessible.

All VDCs	**Core** The Core package for *Suaahara* consists of Maternal, Infant and Young Child Nutrition (MIYCN), Maternal and Child Health (MCH) and Family Planning (FP), and WASH interventions.
Food Insecure VDCs within District	**Core+** The Core+ package consists of the Core interventions plus the Homestead Food Production (HFP) Intervention. This package is implemented district-wide in food insecure districts.
VDCs with a high proportion of DAG households	**Core++** The Core++ package consists of the core interventions and the HFP intervention, plus the DAG intervention.

Alongside the community-based activities, *Suaahara* uses media to promote nutrition messages through its flagship radio drama and call-in series, both of which air weekly. The baseline survey for *Suaahara* confirmed that not only was radio the most commonly reported source of health and nutrition information, but the source preferred by mothers. Radio programs are aired through local FM stations that have high coverage in the *Suaahara* districts (especially in the selected DAG VDCs) and on National Radio “Radio Nepal” weekly.

DISADVANTAGED GROUPS

To identify DAGs at the VDC level *Suaahara* used social mapping. The GON in partnership with UNICEF has mapped the concentration of DAGs in each district and classified VDCs from low to very high concentration of DAGs. *Suaahara* reviews existing District DAG mapping reports to identify VDCS with a very high concentration of DAGS and classified these as “DAG VDCs”. These “DAG VDCs” receive the Core++ interventions (see page 10 above). To identify DAG households *Suaahara* consults with existing government bodies that target DAGs, like the Community Action Centers and the Ward Citizen Forum as well as frontline workers like FCHVs and Social Mobilizers.

Suaahara works at the national, district, community (VDC and ward) and household levels to deliver nutrition specific and nutrition-sensitive interventions, with a strong SBCC strategy to support community and improved family actions on nutrition. Nationally, *Suaahara* works with line ministries on improving policies, strategies, guidelines and investments in nutrition and to ensure they address gender equity and social inclusion (GESI). *Suaahara* works with district level government departments to plan and budget for nutrition, agriculture and WASH interventions and to generate support among key stakeholders for issues of interest to *Suaahara*. At the community level *Suaahara* supports a cadre of 800 Field Supervisors to work with village development committees (VDCs) to train, jointly supervise and build the capacity of front line workers (FLWs) who are volunteers and government employees from *Suaahara*-

related sectors. Front line health and agriculture workers are one of the primary platforms used by *Suaahara* to reach households.

The four key *Suaahara* program areas each represent a different *Suaahara*-related sector:

1. Maternal, Infant and Young Child Nutrition (MIYCN)
2. Water, Sanitation and Hygiene (WASH)
3. Maternal and Child Health/ Family Planning (MCH/FP)
4. Homestead Food Production (HFP)

The process evaluation was guided by the project impact pathways (PIP) summarized in figure 2 below. The PE highlights a select number of outcome measures and concentrates on inputs, processes and outputs. The overall impact will be measured by the impact evaluation. The PE was not intended to measure impact or changes in nutritional status.

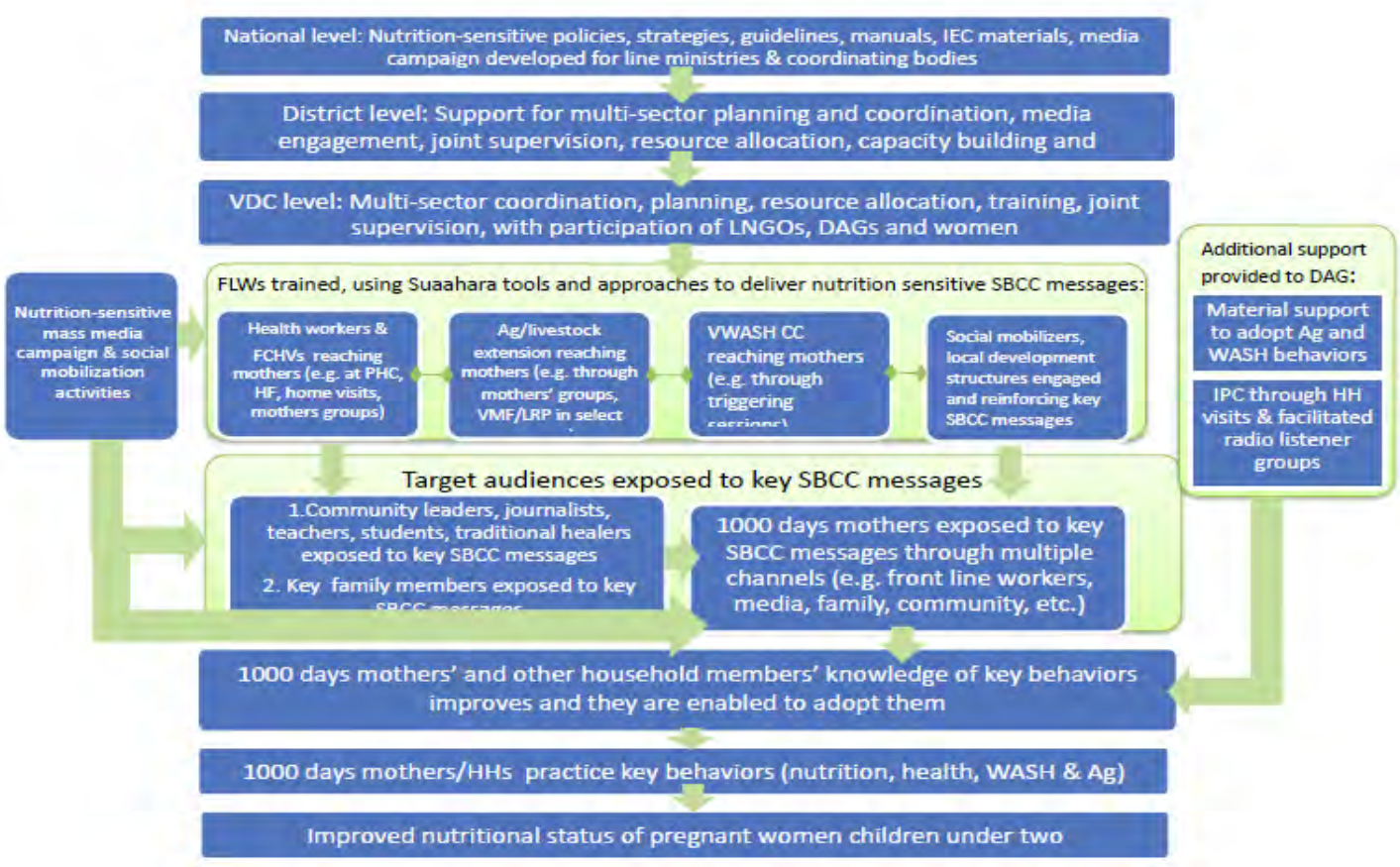

Figure 2 Simplified Project Impact Pathways

Two studies were designed to better understand whether the program was functioning as designed. First, a FLW study was designed to address whether *Suaahara*'s efforts to build the capacity of FLWs were resulting in a transfer of knowledge, skills to FLWs and whether these were applied by the FLWs in their work. The primary objectives of **the FLW study** included:

- To assess whether *Suaahara*'s key messages, tools, and materials have reached frontline workers and the extent to which *Suaahara* knowledge and skills have been retained, and
- To assess the extent to which frontline workers use the knowledge, skills and materials provided by *Suaahara* to provide better services to 1000-day mothers,

Additional FLW study objectives were:

- To evaluate service delivery including the quality of interactions provided by FLWs to 1000-day mothers,
- To discover exposure to *Suaahara* messages among FLWs,
- To understand FLW's perception regarding demand for FLW services by 1000-day mothers, and
- To assess FLW cross-sectoral collaboration.

The second study, a survey of pregnant women and mothers of children younger than two was designed to learn from the beneficiaries' perspective about exposure to *Suaahara* and adoption of recommended practices. The objectives of the Program Exposure and Adoption of Practices (PEAP) study were:

- To assess the extent to which *Suaahara* beneficiaries are exposed to *Suaahara*'s key messages, tools, and materials and the extent to which this influences *Suaahara*-related knowledge and beliefs,
- To assess the extent to which *Suaahara*-related knowledge, skills and materials relate to ideal household level health and nutrition related practices.
- To specifically understand the levels of exposure to key SBCC platforms, including the *Bhanchhin Aama* radio drama and call-in show.
- To assess the extent and frequency with which households are exposed to frontline workers and whether this is in line with what is intended and/or what is being reported by frontline workers
- To examine the extent to which the interventions are reaching targeted disadvantaged households as designed.

The report is organized to include information on both the FLW and PEAP study in one document. The methodology and sampling for each study will be described separately, followed by the results from the FLW Survey and the PEAP survey. The discussion, summary and conclusion will address the findings of both reports and reflect on the research questions.

IV. METHODS AND SAMPLE

SAMPLING AND SAMPLE SIZE

For the baseline, conducted by IFPRI, intervention districts were matched with comparison districts, based on their socio-demographic and agro-ecological characteristics. To facilitate analysis, continuity of data and combining the process evaluation with the overall impact evaluation, the process evaluation occurred in a sub-set of the districts that were visited during the baseline. To select the sub-set of the 16 districts included in the process evaluation, we first excluded half (4) of the district pairs that were included in the baseline survey because 4 of the 8 baseline comparison districts were likely to soon become *Suaahara* intervention districts. The 4 remaining matched pairs were selected and included at least 1 matched pair per agro-ecological zone. Within each district, the VDCs and wards that were randomly selected for inclusion in the baseline were revisited. In total, the sampling within the 8 selected process evaluation districts resulted in data collection in the same 120 communities from these districts sampled at baseline (Figure 3).

The process evaluation was purposive in nature and aimed to assess each element of the program and talk to a wide variety of program implementers without worrying about coverage of a large geographical area. Sampling did not attempt to achieve statistical power.

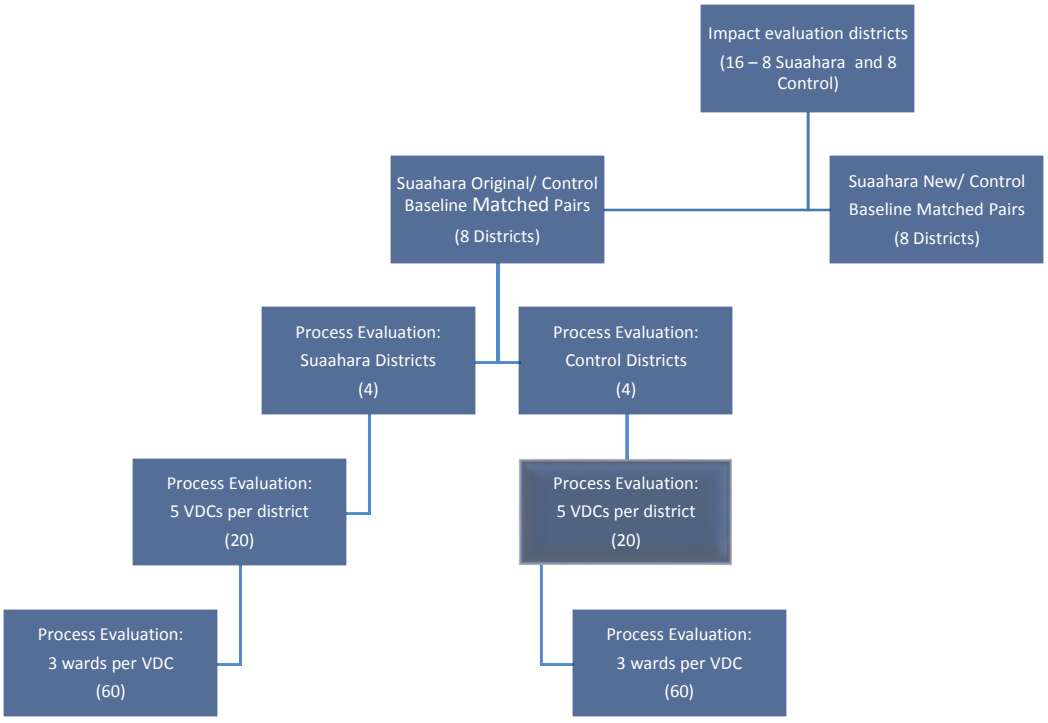

Figure 3 Sampling Methodology

FLW

The FLW study sampling was purposive, aiming to capture information from a diverse group of frontline workers across the survey sites including both the cadre of health frontline workers and non-health frontline workers from sectors in which *Suaahara* engages. We interviewed almost all available frontline workers in each community visited. The total sample size of 734 included a variety of frontline workers at the VDC and ward level:

Table 1: Front Line Worker List

Front Line Worker type	
Health FLWs:	**Non-health FLWs:**
Health assistant (HA) Assistant Health Worker (AHW) Assistant Nurse Midwife (ANM) Female Community Health Volunteer (FCHV) Traditional Healer (TH)	Livestock extension worker Agricultural extension worker Village WASH Committee representative Citizen Awareness Center representative Village Development Committee representative Ward citizen forum representative VDC Nutrition and Food Security Steering
Intervention districts only *Suaahara* field supervisor (FS)	**Intervention districts only** Committee representative *Suaahara* Homestead Food Production mothers group representative
Rupandehi only *Suaahara* peer facilitator (PF)	**Darchula, Rupandehi, and Sindhupalchok only** *Suaahara* community facilitator **Darchula only** *Suaahara* village model farmer (VMF)

**Note: All intended respondents could not be sampled due to their unavailability in the ward/ VDC at the time of data collection*

The FLW study used a mixed-methods approach including a quantitative survey and qualitative study. The qualitative study involved focus group discussions and shadowing of the same FLWs included in the quantitative survey. Both studies were done in the same time period; the results of the qualitative study are provided in a separate report.

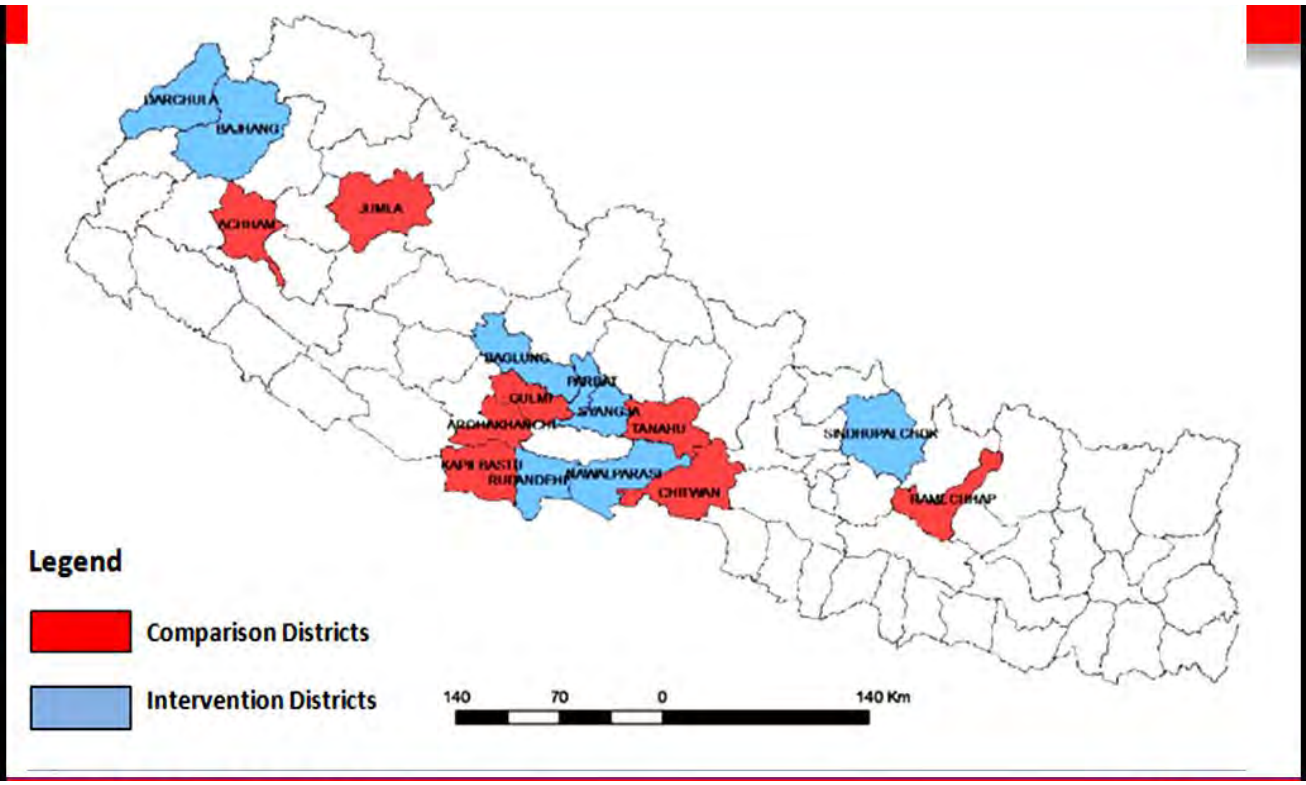

Figure 4 Map of Comparison and Intervention Districts sampled

PEAP

The sampling for the PEAP study was purposive, aiming to capture information from a diverse group of *Suaahara* target beneficiaries across the survey sites. To ensure that DAG respondents were well represented, the FCHVs and *Suaahara* field supervisors helped to identify DAG and non-DAG women in each VDC. The total sample size was 480, divided roughly equally into 4 groups of respondents:

1. pregnant women from disadvantaged groups (DAGs);
2. pregnant women from non-disadvantaged groups;
3. DAG mothers of children under 2 years of age; and
4. Non-DAG mothers of children under 2 years of age.

This resulted in a sample that, while not representative of the VDC or the district, allows us to assess whether the strategies that *Suaahara* has used to identify and target DAG women are effective. It also allows us to understand whether some components of the *Suaahara* program require additional attention to reducing DAG-non-DAG inequalities. Because the sampling methodologies were similar in both intervention and comparison VDCs, the comparisons made between these two remain valid.

V. DATA COLLECTION AND ANALYSIS

The same data collection tool was used for all the interviews in the FLW study, regardless of the cadre being interviewed. Similarly, the same data collection tool was used for all respondents in the PEAP study. For the purpose of consistency and comparison of results, these tools were intentionally kept quite similar to those used at baseline. However, to compensate for lack of information on exposure and FLW work experience, the PE surveys, included additional modules to collect information on FLW knowledge and skills gained and use of that knowledge and skills.

The questionnaires were drafted in English and questions that were new or modified from baseline were then translated by the local survey firm into Nepali. The questionnaires were finalised in consultation with *Suaahara* staff and collaborators and pre-tested in districts that were not part of the studies. Tables 3 and 4 below list the modules that were included in each of the questionnaires.

Table 2: FLW Survey Module List

Number	Module Titles
1	Demographics and socioeconomic status
2	Training and experience
3	Work activities
4	Job motivation and supervision
5	Access to information
6	Multi-sectoral collaboration: health, nutrition, agriculture, WASH and family planning
7	Knowledge regarding health, nutrition, agriculture, WASH and family planning
8	Individual practices and observations: health, nutrition, agriculture, WASH and family planning
9	*Suaahara* Exposure

Table 3: Program Exposure and Adoption of Practices (PEAP) survey module list

Number	Module Titles
1	Demographics and Socioeconomic Status
2	General Program Exposure
3	Multi-sectoral Program Exposure: Nutrition, Health, Agriculture, WASH, Family Planning, and VDC Budget Planning Process
4	Multi-sectoral Knowledge: Nutrition, Health, Agriculture, WASH, Family Planning, and VDC Budget Planning Process
5	Multi-sectoral Practices: Nutrition, Health, Agriculture, WASH, Family Planning, and VDC Budget Planning Process

Informed consent was obtained from all participants prior to the interviews. Supervisors were assigned to each data collection team who monitored the data collection fieldwork, and reviewed the information collected by the enumerators. The research firm's senior staff members were in regular contact with field teams during data collection and provided timely support and feedback. Data were collected electronically, eliminating the need for data entry upon completion of data collection. All information entered on smart phones was password-protected and sent as frequently as possible to a server in Kathmandu. The program for electronic data collection included a number of quality check mechanisms such as range checks, which helped to detect errors early on.

DATA ANALYSIS

FLW STUDY

All data were analyzed using Stata 13. Appropriate variables were then created for each section. Descriptive analysis was run to present results on each variable. Results on means and proportions were generated for the entire sample, separately for *Suaahara* and non-*Suaahara* areas in the sample, and separately for health and non-health FLWs included in the sample. Child feeding practices were described using the WHO-recommended IYCF indicators (WHO 2010). These included as many of the breastfeeding and complementary feeding indicators that are part of the eight core WHO IYCF indicators, as possible to calculate based on the dataset.

PEAP STUDY

Similarly for this data set, appropriate variables were created for each section. Descriptive analysis was run to present results on each variable. Results on means and proportions were generated for the entire sample, separately for *Suaahara* and non-*Suaahara* areas in the sample, and separately for each of the 4 types of respondents included in the sample. Child feeding practices were described using the WHO-recommended IYCF indicators (WHO 2010). These included as many of the breastfeeding and complementary feeding indicators that are part of the eight core WHO IYCF indicators, as possible to calculate based on the dataset.

Statistical testing of select bivariate associations was carried out using regression techniques. These tests compare the differences found between the comparison and intervention sites. District level clustering has been controlled for in all t-tests, as was done at baseline. No star indicates that the difference is statistically insignificant. Stars (single, double, or triple) denote P values of <0.05, <0.01, or <0.001 respectively. Thus far, no statistical testing has been done to compare differences between DAG and non-DAG findings or to compare differences between health and non-health FLW findings. However, this further analysis will be done on a few key outcomes. If analysis was done on a sub-sample, the sample size (n) is noted on that specific row inside the table (in full tables in annex). For observations or questions with read aloud answers, this is noted; in all other instances, the questions were open-ended.

VI. SAMPLE DESCRIPTION

FLW STUDY

A summary of FLW respondent characteristics is included in Table 4 below, which shows that FLWs from comparison and intervention areas were quite similar. The 734 front line workers interviewed as part of the PE included both health and non-health workers. Roughly half of the respondents in each area worked in the health sector (46 percent in intervention areas and 50 percent in comparison areas, data not shown), the remainder were from sectors other than health, for example livestock extension workers, ward citizen forum representatives, etc. The average age of the front line workers was 43.5 in comparison areas and 40.9 in intervention areas and about four in ten FLWs interviewed were female (40 percent comparison and 45 percent intervention). On average, FLWs had completed about 8 years of formal education and about 60 percent were Pahadi Bahun Chhetri caste. The only difference between FLWs in *Suaahara* and comparison areas is that those in *Suaahara* areas were about twice as likely to report working outside the home in addition to their duties as a FLW (44 percent intervention vs. 21 percent comparison; $p<0.05$).

Table 4: FLW Sample Characteristics

	Comparison Overall (N=335)	Intervention Overall (N=399)
	Mean (SD)/%	
Main FLW role	100.0%	100.0%
Percent Female	39.7%	44.6%
Mean age (completed years)	43.5 (13.9)	40.9 (14.1)
Native language: Nepali	76.4%	70.7%
Religion: Hinduism	89.6%	93.7%
Caste		
Pahadi dalit	6.3%	4.5%
Terai dalit	0.3%	3.5%
Himali Pahadi Janajati	30.5%	14.3%
Terai Janajati	1.2%	6.5%
Pahadi Bahun Chhetri	60.3%	61.2%
Madhesi Terai Bahun Chhetri	0.3%	1.8%
Other Madheshi Terai Jati	1.2%	7.5%
Muslim	0.0%	0.8%

Highest level of schooling (number of years)	7.5 (4.6)	8.2 (4.7)
Education levels		
Never attended school	19.1%	14.5%
Started school, but not completed primary	7.2%	8.0%
Completed primary school (grades 1-5)	8.7%	6.8%
Some secondary school (grades 6-9)	16.4%	21.3%
Completed secondary school (grade 10)	26.3%	14.5%
Completed class 12	5.7%	0.8%
Higher education	16.7%	34.1%
Non FLW work outside the home: Yes	21.2%	**43.9%***
Has a child under 5 years	26.7%	37.3%

**P<0.05*

In terms of household characteristics and total asset ownership, there were no significant differences between the comparison and intervention sites. More FLWs in intervention areas had electricity in their homes compared to the comparison areas (data not shown). Although the number of assets did not differ, FLWs in comparison areas tended to own more poulty compared and FLWs in *Suaahara* areas owned more sheep and goats. Health FLWs overall owned fewer assest on avergae than non-health FLWs (data not shown)

PEAP STUDY

In this survey, we included four types of women from each ward in both intervention and comparison areas: a pregnant woman from a disadvantaged group household (DAG), a pregnant woman from a non-DAG households, a mother of a young child under 2 years of age from a DAG household, and a mother of a young child under 2 years of age from a non-DAG household. Women's characteristics were similar in intervention and comparison areas: average age was 24 years, nearly all were married, and most became pregnant for the first time at 19 or 20 years of age. Women in the intervention area had slightly more schooling than those in the comparison area, but by less than a year and this difference was not statistically significant. Child and household characteristics were also similar between intervention and comparison areas.

Women from DAG households had several years less schooling than women from non-DAG households and fewer DAG women reported Hinduism as the household head's religion, but otherwise DAG and non-DAG characteristics were similar.

Table 5: PEAP Study Sample Characteristics

	Comparison Mean (SD)/%		Intervention Mean (SD)/%	
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)
Women characteristics				
Sample distribution	50.8%	49.2%	49.6%	50.4%
Mean Age	24.2 (5.4)	24.7 (4.8)	24.5 (5.3)	24.0 (4.2)
Percent married	99.2%	100.0%	100.0%	100.0%
Mean age at first pregnancy	19.1 (2.8)	19.6 (2.4)	19.7 (2.5)	20.4 (2.6)
Mean years of formal schooling	4.0 (3.7)	5.9 (4.6)	4.7 (4.2)	7.9 (3.9)
Child* (N=197-C, 166-I, 363-A)				
Age in months	16.3 (14.6)	17.6 (14.6)	17.4 (15.6)	16.4 (15.6)
Sex: male	46.4%	49.5%	47.0%	47.0%
Household				
Number of children <5 y	1.0 (0.8)	1.1 (0.7)	1.0 (0.8)	1.0 (0.9)
Religion: Hinduism	86.9%	90.7%	87.0%	89.7%

Table 6 presents some indicators of household socio-economic status. Nearly all households owned their homes of 2 to 3 bedrooms and more than 90 percent own land. Electricity was abundant and reported by more households in intervention areas than in comparison areas, though this difference was not statistically significant. Solar power was more prevalent as a main source of energy for lighting in comparison areas than in intervention areas. Based on the observations of the enumerators, homes in intervention areas seemed to be built of higher quality materials (e.g. flooring, exterior/outer walls, and roofs). The difference between intervention and comparison areas regarding prevalence of households having an improved roof was statistically significant ($p<0.05$). As expected, DAG households tended to lag behind their non-DAG counterparts in all of the socio-economic indicators measured, such as size of their homes and land, the number of assets owned, etc.

Table 6: Home and Land Characteristics

	Comparison		Intervention		Full Sample	
					Comparison	Intervention
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)
	Mean (SD)/%					
House: ownership	96.7%	99.2%	98.3%	97.4%	97.9%	97.8%
Number of bedrooms	2.2 (1.1)	3.1 (1.6)	2.2 (1.1)	3.2 (1.4)	2.6 (1.4)	2.7 (1.4)
Household has electricity	64.8%	68.6%	78.3%	87.2%	66.7%	82.8%
Main source of energy for lighting						
Kerosene/oil lamp	6.6%	2.5%	10.4%	0.0%	4.6%	5.2%
Electricity	63.9%	65.3%	78.3%	87.2%	64.6%	82.8%
Firewood or torch	5.7%	0.0%	3.5%	1.7%	2.9%	2.6%
Solar power	23.8%	32.2%	7.8%	11.1%	27.9%	9.5%
Main source of energy for cooking						
Firewood	98.4%	87.3%	89.6%	84.6%	92.9%	87.1%
LPG	0.8%	7.6%	1.7%	9.4%	4.2%	5.6%
Animal dung	0.0%	0.0%	8.7%	4.3%	0.0%	6.5%
Biogas	0.8%	5.1%	0.0%	1.7%	2.9%	0.9%
Improved materials (OBSERVATION)						
Floor	9.0%	16.1%	12.2%	28.2%	12.5%	20.3%
Exterior/outer wall	10.7%	19.5%	26.1%	41.0%	15.0%	33.6%
Roof	75.4%	91.5%	94.8%	99.2%	83.3%	97.0%*
Agricultural land						
Owns any	94.3%	100.0%	92.2%	97.4%	97.1%	94.8%

Size of land in hectares* (Among those who own any) (N=233-C, 220-I, 453-A)	0.2 (0.1)	0.5 (0.4)	0.2 (0.2)	0.9 (2.1)	0.3 (0.4)	0.5 (1.5)
Assets owned - total count of different types	6.1 (2.8)	8.5 (3.1)	6.4 (2.4)	8.7 (3.0)	97.9%	97.8%
Animals owned - total count of different types	2.9 (1.7)	3.6 (1.6)	2.6 (1.5)	3.0 (1.5)	2.6 (1.4)	2.7 (1.4)

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

VII. RESULTS

RESULTS FROM THE FLW STUDY

FLW STUDY HIGHLIGHTS

- FLWs in Suaahara areas were more likely to have attended training in the last year and were more likely to have received training on key skills such as multi-sector collaboration & group facilitation.
- Knowledge about ANC counseling and IFA for 180 days higher among Suaahara FLWs – particular improvement among non-health FLWs.
- Though FLWs in Suaahara areas are more knowledgeable than those in comparison areas about sick child feeding, too few know to feed an extra meal (41%) or to give extra food (32%). This remains a gap in child nutrition knowledge for all FLWs in both areas
- FLWs in Suaahara areas are more likely to report that their supervisor works with them to solve problems and less likely to report being scolded for mistakes.

Exposure to *Suaahara* (Table 7 below) was assessed by asking FLWs questions about their awareness of and understanding of *Suaahara*. The majority of these questions were asked only of FLWs in intervention areas because they were not applicable to comparison areas where *Suaahara* had not been implemented. In intervention areas, more than two-thirds of FLWs identified health/nutrition and homestead food production as aims of the program. About two-thirds of the FLWs in intervention areas were aware that women not in the 1,000 day period and men could also participate in program activities. Most FLWs in intervention areas shared that homestead food production and socio-economic status were the benefits of the program. More non-health FLWs reported nutrition/health as a *Suaahara* aim than health FLWs, but more health than non-health FLWs reported family planning as a *Suaahara* aim.

Table 7: *Suaahara* program awareness among FLWS

	Intervention		
	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean %		
Ever heard of *Suaahara*	97.2%	87.5%	92.7%
***Suaahara* aims*+(among those who had ever heard of *Suaahara*) (N=370-I)**			
Nutrition/Health	92.6%	83.2%	88.2%
Homestead Food Production	68.8%	68.5%	68.7%
WASH	55.8%	55.4%	55.6%
Family Planning	3.7%	11.4%	7.3%

Don't know	1.9%	0.5%	1.3%
***Suaahara* target beneficiaries* + (among those who had ever heard of *Suaahara*) (N=370-l**			
Pregnant women	85.1%	81.0%	83.2%
Lactating women	31.3%	30.4%	31.1%
Mothers of children under 2	79.5%	79.9%	79.7%
Mothers of children under 5	12.6%	16.3%	14.3%
Disadvantaged groups	18.1%	10.9%	14.8%
All women	3.7%	3.8%	3.8%
Don't know	2.8%	0.5%	1.8%
Participation allowed: women who aren't mothers or pregnant*(among those who had ever heard of *Suaahara*) (READ ALOUD)	66.1%	62.5%	64.4%
Participation allowed: men (among those who had ever heard of *Suaahara*) (READ ALOUD)	65.1%	68.5%	66.7%
Nutrition/Health	88.37%	81.52%	85.21%
Homestead Food Production	0.0%	0.0%	0.0%
WASH	0.0%	0.0%	0.0%
Family Planning	0.0%	0.0%	0.0%
Women's empowerment	0.0%	0.0%	0.0%
Socio-economic Status	67.0%	64.1%	65.6%
Community Development	0.0%	0.0%	0.0%

TRAINING RECEIVED

As part of *Suaahara*'s commitment to assist the GON to build the capacity of government staff, health workers, civil society and community volunteers in nutrition it employs an extensive training and capacity building strategy at all levels. Part of the Suaahara strategy for fostering multi-sector collaboration includes training front line workers from various sectors on topics related to sectors other than their own. In this way, 1000 day households receive consistent information from a variety of sources, reinforcing *Suaahara* messages and promoting similar behaviors.

FLW in *Suaahara* areas were more likely than those in comparison areas to report having received training on maternal and child health and nutrition, healthy timing and spacing of pregnancies, WASH and/or agriculture (83 percent vs. 71 percent, $p<0.01$). *Suaahara* area

FLWs were also much more likely than those in comparison areas to have received the training in the last year (72 percent vs. 44 percent, p<0.01) (Table 8). Most FLWs (88 percent) in intervention areas reported that they used information gained in training in the community (data not shown).

Of note in the table below is the difference between the content of the training reported by FLWs in comparison and intervention areas. In *Suaahara* areas, FLWs were more likely to report being trained in topics not related to their sector. For example, 28 percent of non-health FLWs reported having received training in IYCF, compared with 5.3 percent in comparison areas. Similarly, 54 percent of health FLWs in *Suaahara* areas had received WASH-related training vs. 22 percent in comparison areas. Furthermore, *Suaahara* area FLWs are more likely to report having skills-based training. One third of the FLWs in *Suaahara* areas reported training in facilitation skills, 25 percent in multi-sector collaboration and 13 percent in policy/budgeting, compared with 10 percent, 2 percent and 5 percent, respectively, in comparison areas.

Table 8: FLWS Training history on Agriculture, health, nutrition, family planning and WASH

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Ever trained: yes	69.2%	71.7%	70.5%	80.5%	85.3%	**82.7%***
Mean number of trainings	2.2 (2.7)	7.2 (5.7)	4.6 (5.1)	6.3 (5.8)	10.0 (6.3)	**8.0 (6.3)***
In last 12 months						
Trained in last 12 months: yes	37.9%	50.6%	44.2%	67.9%	77.7%	**72.4%****
Total number of topics trained on	0.7 (1.6)	2.5 (3.9)	1.6 (3.1)	3.6 (5.0)	5.8 (6.0)	4.6 (5.6)
Number of days	2.6 (6.3)	2.8 (4.4)	2.7 (5.4)	4.1 (5.5)	5.7 (6.6)	**4.9 (6.0)***
Number of hours per day* (if at least 1 day)	3.9 (3.7)	5.2 (3.5)	4.5 (3.7)	5.9 (2.9)	6.6 (2.8)	6.3 (2.9)
Specific topics: (READ ALOUD)						
Maternal care	1.2%	19.3%	10.2%	18.1%	42.4%	29.3%
Newborn care	0.6%	18.1%	9.3%	19.5%	40.8%	29.3%
Infant and child nutrition	5.3%	33.1%	19.1%	28.4%	51.6%	39.1%

Health	1.8%	26.5%	14.0%	14.0%	34.8%	23.6%
FP	1.2%	16.9%	9.0%	13.5%	39.7%	25.6%
WASH	17.8%	21.7%	19.7%	42.3%	53.8%	47.6%
Facilitation skills	4.1%	15.7%	9.9%	27.4%	40.2%	33.3%
Agriculture/ livestock	5.9%	4.8%	5.4%	24.7%	26.1%	25.3%
Multi-sectoral collaboration	3.6%	1.2%	2.4%	13.5%	14.7%	14.0%
GESI	4.7%	7.8%	6.3%	21.4%	25.5%	23.3%
Policy/ budgeting	9.5%	1.2%	5.4%	18.6%	6.5%	13.0%
*P<0.05, **P<0.01,						

FLWs were asked about their desire for additional trainings, 93 percent of comparison site FLWs and 96 percent of intervention site (including 99 percent of non-health workers) desired more training on interpersonal communication. Agriculture training was requested by more than 50 percent of FLWs in both areas, though more by non-health workers (58 percent in Intervention areas). Health workers in *Suaahara* sites also desired training on infant and child nutrition (40.8 percent), maternal care (31 percent) while-non health workers also requested training on WASH (40 percent) and Infant and Child nutrition (21.9 percent, data not shown).

AVAILABILITY AND USE OF MATERIALS

Suaahara designed and developed a number of BCC tools and job aids and print materials to be used and distributed by FLWs in trainings, during interpersonal counselling and as promotion materials. The table below (table 9) includes information on use of the various *Suaahara* tools and materials provided to FLWs. Data is only shown for intervention sites as they were the only ones provided with materials under the project. Health sector FLWs are more likely to have received all materials, except for the crop calendar, which more non-health workers received. Discussion cards, pictorial books and posters were the most common materials used by FLWs in the community. The most common suggestion to improve the materials was to simplify them.

Table 9: Use of *Suaahara* tools and materials

	Intervention		
	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean%		
Use of *Suaahara* tools Training aids/materials by community			
Discussion cards	14.0%	50.0%	30.6%
Pictorial book	11.6%	46.2%	27.6%
Posters (AFATVAH, coop, water purification etc.)	22.8%	51.6%	36.1%
Locally available food	2.3%	14.7%	8.0%

Training aid pictures	3.3%	8.2%	5.5%
Crop calendar	7.0%	4.4%	5.8%
Poultry flip chart	6.1%	9.2%	7.5%
Garden-to-plate materials	2.8%	3.8%	3.3%
Coop game cards	0.0%	2.7%	1.3%
Handwashing demonstrated at a handwashing station	6.1%	21.7%	13.3%
Sugandapur and Durgandapur DVDs	0.5%	0.0%	0.3%
PA vial	0.0%	1.1%	0.5%
Peer facilitator handbook	0.5%	2.2%	1.3%
GESI integration checklist	0.9%	5.4%	3.0%
Bhanchhin Aama discussion guide	0.9%	2.2%	1.5%
Suggestions from FLWs for improving materials			
Translations into local language	6.5%	12.0%	9.0%
Simpler	7.4%	16.3%	11.5%
More pictures/diagrams	1.9%	6.0%	3.8%
Nothing	17.7%	32.6%	24.6%

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

+ Note: These percentages may not add to 100% as this was a multiple response question

^ Note: These questions were missing in the electronic version; although enumerators were asked to collect separately not all did.

PERCEPTIONS OF ROLE

Many FLWs are community volunteers who have additional responsibilities beyond those of the *Suaahara* project. The FLWs were interviewed on their perceptions of their role as a FLW and their workloads (Table 10). On average FLWs in comparison areas had been in that FLW role longer compared to FLWs in intervention areas (12 months vs. 9 months). There was no significant difference in the perception of workload. In all areas approximately one third of FLWs felt they had too much work, the proportion of FLWs reporting their workload had increased over the past year did not vary significantly across comparison and intervention, suggesting that *Suaahara* activities are not necessarily responsible for the increased workload reported in intervention areas. Among those who did report an increased workload, the most common reasons were: 1) larger geographic areas to cover, reported by 27 percent in Suaahara and 39 percent in intervention areas; and 2) increased number or duration of home visits, reported by 20 percent of FLWs in *Suaahara* and 24 percent in intervention areas. Health FLWs were more likely (30 percent) to say home visits were the source of increased workload than non-health FLWs (12 percent).

Multi-sector collaboration seems to be placing a greater burden on non-health FLWs, compared with health FLWs in *Suaahara* areas. Among workers in *Suaahara* areas who reported that their workload had increased, one quarter cited this as the reason. In contrast, only 18 percent of health workers in *Suaahara* areas identified this as the reason. In comparison areas, multi-sector collaboration less frequently mentioned as the reason for increased workload (12 percent overall).

Table 10: FLW Work Activities

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Length of time in this FLW role (months)* (among those who remember)	6.1 (7.9)	18.0 (14.7)	12.0 (13.2)	4.6 (7.3)	14.6 (12.1)	9.1 (11.0)
Days per week working in this FLW role	3.2 (2.3)	3.9 (1.9)	3.5 (2.2)	3.0 (2.2)	4.4 (2.1)	3.6 (2.2)
Hours per day working in this FLW role	4.6 (2.3)	3.8 (2.2)	4.2 (2.3)	3.8 (2.3)	4.0 (2.5)	3.9 (2.4)
Perception of workload						
Too much	30.8%	32.5%	31.6%	25.1%	38.6%	31.3%
Right amount	60.4%	66.9%	63.6%	67.0%	54.9%	61.4%
Too little	8.9%	0.6%	4.8%	7.9%	6.5%	7.3%
Workload change in last year						
More	41.4%	46.4%	43.9%	38.6%	45.7%	41.9%
Same	56.2%	48.8%	52.5%	55.8%	46.2%	51.4%
Less	2.4%	4.8%	3.6%	5.6%	8.2%	6.8%
Reasons for increased workload*+ (only among those who reported more work in last year)						
Increased number/ duration of home visits	21.9%	25.9%	23.9%	11.6%	30.4%	20.3%
Increased number/ duration of group meetings	10.7%	4.8%	7.8%	12.6%	14.1%	13.3%
Larger geographic area to cover	37.3%	39.8%	38.5%	26.1%	27.7%	26.8%
More paperwork	18.3%	11.5%	14.9%	9.3%	10.3%	9.8%

More meetings	8.9%	6.6%	7.8%	18.1%	14.7%	16.5%
More trainings	0.6%	3.0%	1.8%	2.8%	4.9%	3.8%
Required multi-sectoral collaboration	16.6%	7.8%	12.2%	23.7%	17.9%	21.1%
+ Note: These percentages may not add to 100% as this was a multiple response question						

Frontline workers not only conduct home visits, but also receive visits in their home from beneficiaries seeking advice. They are also responsible for facilitating health mothers' groups, which provide a platform for *Suaahara* to reach 1000 day mothers and other mothers in the community with messages about maternal and child health and nutrition, family planning, WASH, etc. These also offer an opportunity for other activities that promote healthy behaviors such as food demonstrations and water quality demonstrations. *Suaahara* field supervisors play a critical role in supporting FLWs, particularly FCHVs to organize and conduct health mothers' groups and also to encourage participation among 1000 day mothers.

The frequency and duration of visits from women seeking advice and home visits were similar between FLWs in the two areas (data not shown). The health mother's group facilitated by FLWs in intervention areas had, on average, 2 more participants than groups facilitated by FLWs in comparison areas. Health FLWs in intervention areas reported receiving more visits from mothers, about 2 more visits per week on average. Non-health FLWs in comparison areas made 2 more home visits per week, on average.

TASKS IMPLEMENTED

Table 11: FLW Work Activities - Specific Tasks

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Documentation/paper work time (hours per month)* (among those reporting) (N=333-C, 399-I, 732-A)	8.3 (14.9)	6.9 (10.9)	7.6 (13.1)	3.8 (7.1)	4.4 (7.1)	4.1 (7.1)
Health mothers groups						
Facilitates: yes/no	2.4%	39.2%	20.6%	4.7%	45.1%	23.3%
Group size* (among	22.0	21.8	21.8	22.9	24.0	23.9

those reporting to facilitate a group) (N=63-C, 93-I, 162-A)	(9.5)	(10.5)	(10.4)	(11.2)	(12.8)	(12.6)
Number of meetings in last 12 months* (among those reporting to facilitate a group) (N=69-C, 93-I, 162-A)						
Less than once per month	75.0%	26.2%	29.0%	40.0%	38.6%	38.7%
Once per month	25.0%	73.9%	71.0%	50.0%	55.4%	54.8%
More than once per month	0.0%	0.0%	0.0%	10.0%	6.0%	6.5%
Duration of a group meeting * (among those reporting to facilitate a group)	2.0 (0.0)	2.2 (0.9)	2.2 (0.9)	2.7 (0.9)	2.3 (0.8)	2.3 (0.8)
Average number of mothers attending meetings* (among those reporting to facilitate a group) (	16.8 (5.6)	16.8 (8.1)	16.8 (7.9)	19.0 (10.4)	17.7 (10.5)	17.9 (10.4)
Meeting preparation time (hours)* (among those reporting to facilitate a group)	2.0 (1.0)	0.9 (0.8)	0.9 (0.9)	1.0 (0.7)	0.7 (1.2)	0.7 (1.1)
** Responses greater than 10 hours for "meeting preparation time" were removed as outliers.*						

FLWs were asked about the types of health and nutrition advice that was sought by communities they served. There was no major or significant difference between intervention and comparison areas in the proportion of FLWs who report that men and women seek their advice on IYCF. In terms of specific topics on which advice was sought, 32 percent of FLWs reported that their advice is sought on breastfeeding, 38 percent said they were sought after for advice on complementary feeding and about 9 percent to help with fussy babies.

Table 12: Child Feeding Advice sought by communities

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)

	Mean %			Mean %		
Percent of FLWs who say women seek their advice/information on child feeding	7.7%	75.3%	41.2%	14.4%	79.9%	44.6%
Percent of FLWs who say men seek their advice/information on child feeding	5.3%	35.5%	20.3%	2.8%	42.4%	21.1%
Specific topics*+ (among those who ask for advice)						
Breastfeeding	2.4%	47.0%	24.5%	7.9%	59.8%	31.8%
Complementary feeding	8.3%	71.1%	39.4%	13.0%	66.9%	37.8%
Baby crying too much	2.4%	24.7%	13.4%	1.4%	18.5%	9.3%
** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*						
+ Note: These percentages may not add to 100% as this was a multiple response question						

The *Suaahara* FLWs are expected to use interpersonal communication to support behavior change among beneficiaries. FLWs were trained on IPC using the GALIDRAA method (Greet, Ask, Listen, Identify, Discuss, Recommend, Agree, Appointment), which aims to 'reach-an-agreement' with the person they are counselling. Table 13 below includes information on use of the GALIDRAA steps as reported by the front line workers. A similar proportion of FLWs in both areas reported to always or often follow the first 3 steps (greet, ask, and listen), but more FLWs in comparison areas followed the next 5 steps (listen, identify, discuss, recommend, agree, and appointment scheduling). More FLWs in comparison areas followed all eight of the GALDRAA steps. Though none of these findings were statistically significant, they are consistent with data presented earlier that FLWs wish to receive more training on interpersonal communication. In the intervention sites, non -health workers were more often to greet (95.4 percent), agree (78.6 percent) than the health FLWs. More than double the number of health FLWs always/often asked and identified the problem compared to non-health FLWs in both areas while counseling.

Table 13: Use of GALIDRAA Counseling Method by FLWs

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean %			Mean %		
Always/ often Greet	91.7%	78.3%	85.1%	95.4%	83.2%	89.7%
Always/ often Ask	12.4%	71.7%	41.8%	22.8%	75.0%	46.9%

Always/ often Listen	95.9%	96.4%	96.1%	97.7%	95.1%	96.5%
Always/ often Identify	13.0%	74.1%	43.3%	13.0%	70.7%	39.6%
Always/ often Discuss	82.8%	81.3%	82.1%	73.0%	69.0%	71.2%
Always/ often Recommend	89.4%	85.5%	87.5%	79.1%	78.8%	79.0%
Always/ often Agree	87.6%	74.1%	80.9%	78.6%	69.0%	74.2%
Always/ often Appointment	90.5%	80.7%	85.7%	73.0%	67.9%	70.7%
All GALIDRAA always/ often	5.9%	49.4%	27.5%	7.0%	31.0%	18.1%

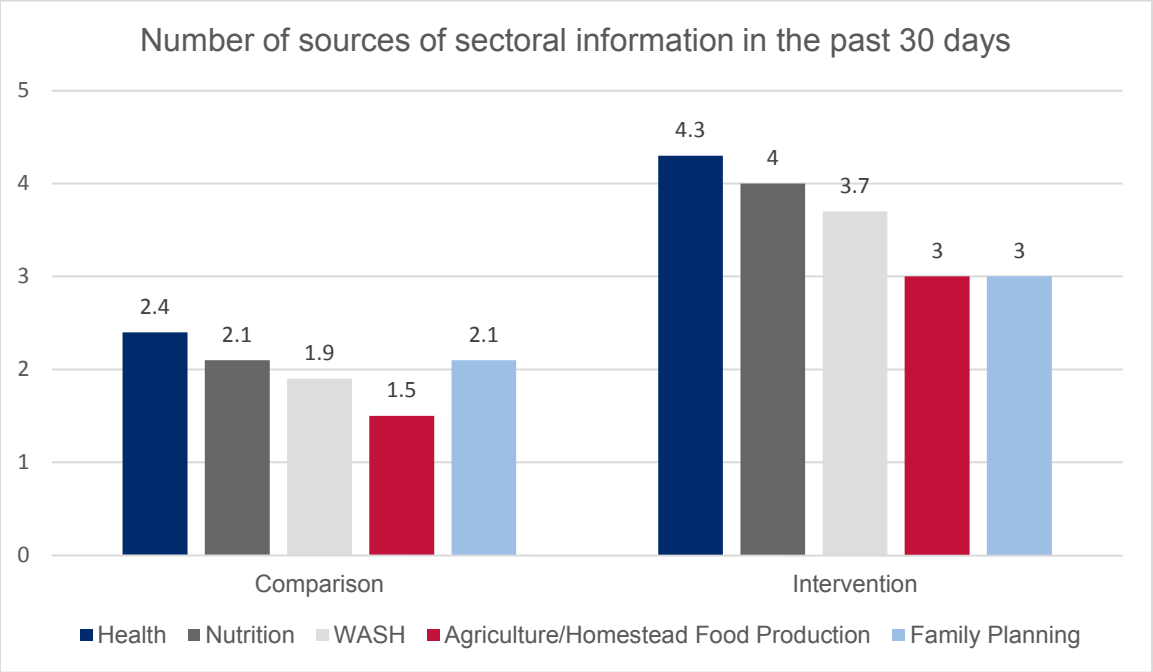

Figure 5: Number of Sources of Sectoral Information for FLWS

ACCESS TO INFORMATION

FLWs were asked about their sources of information related to the various sectors in which *Suaahara* works. Table 14 shows that FLWs in intervention areas received heath, nutrition, WASH, agriculture, and family planning information from a significantly higher number of sources than FLWs in comparison areas in the last 30 days. Differences between the number of sources cited by FLWs in *Suaahara* and comparison areas were statistically significant for all sector-specific resources. The non-health FLWs reported more sources of information for each of the five sectors, than do health FLWs (data not shown). When asked about their preferred source of information on health, nutrition and agriculture, radio was the most commonly mentioned information source by all groups (data not shown).

Table 14: Number of sources for sectoral information for FLWS in previous 30 Days

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Specific sources for last 30 days (READ ALOUD)+						
Health	2.6 (1.5)	2.2 (1.8)	2.4 (1.7)	4.5 (2.3)	4.1 (2.3)	**4.3 (2.3)****
Nutrition	2.1 (1.4)	2.0 (1.7)	2.1 (1.6)	4.1 (2.4)	3.9 (2.5)	**4.0 (2.4)***
WASH	2.1 (1.6)	1.7 (1.7)	1.9 (1.6)	3.8 (2.3)	3.5 (2.4)	**3.7 (2.3)***
Agriculture/Homestead Food Production	1.8 (1.6)	1.2 (1.4)	1.5 (1.5)	3.1 (2.2)	2.8 (2.3)	**3.0 (2.3)****
Family Planning	2.3 (1.6)	2.0 (1.7)	2.1 (1.6)	3.0 (2.1)	3.0 (2.1)	**3.0 (2.1)***
**P<0.05, **P<0.01*						
+ Note: These percentages may not add to 100% as this was a multiple response question						

Table 15 shows job supervision related factors. There were no significant differences regarding frequency of meeting with supervisors in the last 3 months among FLWs in intervention areas and comparison areas In terms of supervision support, FLWs in comparison areas reported always/often being scolded by their supervisor compared to FLWs in intervention areas (10 percent comparison vs. 2 percent intervention; p<0.001). FLWs in intervention were more than FLWs in comparison areas to agree/strongly agree that their supervisor works with them to identify solutions to problems (P<0.05).

In both areas more non-health FLWs reported their supervisor always/often gives attention, takes their concerns into account while planning, praises and takes concerns to higher management than health FLWs. Similarly, more non-health FLWs of both areas agree/strongly agree their supervisor informs them of changes, ensures they have enough supplies, works with them to identify solutions, gives enough guidance and that they look forward to interacting with their supervisor than health FLWs.

Table 15: FLW Job Supervision

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Times met with supervisor in last 3 months	3.1 (3.2)	1.9 (2.2)	2.5 (2.8)	4.0 (3.4)	2.4 (2.2)	3.2 (3.0)
My supervisor always/ often:						
Supervisor gives attention to concerns/worries	70.4%	51.2%	60.9%	76.7%	61.4%	69.7%
Supervisor takes concerns into account when planning activities involving individual	69.2%	54.8%	62.1%	78.1%	54.9%	67.4%
Supervisor scolds when mistake is made	10.7%	8.4%	9.6%	0.9%	3.3%	**2.0%*** **
Supervisor praises when something done really well	63.3%	50.6%	57.0%	55.4%	43.5%	49.9%
Supervisor takes concerns to higher management level	52.1%	36.1%	44.2%	52.6%	34.2%	44.1%
Agrees/Strongly agrees that:						
I feel well informed by my supervisor about changes/modifications to the program activities that I am involved in.	87.6%	64.5%	76.1%	93.0%	73.4%	84.0%
My supervisor ensures that I have enough supplies to do my daily work.	60.4%	58.4%	59.4%	78.6%	64.7%	72.2%
My supervisor works with me to identify solutions to problems I face in my work.	84.0%	65.1%	74.6%	94.0%	77.7%	**86.5%***
My supervisor gives me enough guidance and structure to help me do my job.	84.6%	66.3%	75.5%	91.2%	71.2%	82.0%

I look forward to interaction with my supervisor	87.6%	64.5%	76.1%	93.0%	73.4%	84.0%

KNOWLEDGE

Suaahara has invested a lot in training front line workers on health, nutrition, WASH and homestead food production. As mentioned earlier, one feature of *Suaahara*'s approach to training has been to provide training in multiple sectors to all front lien workers. To assess the degree to which frontline workers were knowledgeable about issues related to *Suaahara*, the questionnaire included several questions about the following:

- Maternal nutrition and recommended practices;
- Child nutrition and recommended IYCF practices; and
- Household water treatment and the critical times for hand washing.

Maternal nutrition

Knowledge about the signs of malnutrition among women is moderate, even among FLWs in the health sector—only 52 percent reported that thinness was a sign of malnutrition among women. FLWs in *Suaahara* areas are more likely than those in comparison areas to identify thinness and loss of appetite as signs of malnutrition among women, though the differences were not significant. Other signs of malnutrition were mentioned by similar proportions of FLWs in comparison and intervention areas.

FLWs in *Suaahara* areas were more likely to know that women should receive 4 ANC visits and 45 iron/folic acid tablets in the post-partum period. In *Suaahara* areas, 73 percent of FLWs were aware that a pregnant woman must have 4 ANC check-ups vs. 62 percent in comparison areas ($p<0.01$). Fifty-seven percent of FLWS in intervention areas (compared to 47 percent in comparison areas) knew that a women should take iron/folic acid for up to 45 days post-partum ($P<0.001$). While more FLWs in intervention areas also knew that a pregnant woman must take iron/folic acid for 180 days this finding was not statistically significant. As expected, knowledge of maternal nutrition was higher among health FLWs than non-health FLWs in both areas. However, many more non-health FLWs in intervention areas were knowledgeable about recommended pregnancy/ post-pregnancy practices, evidence of *Suaahara*'s approach to mutli-sector training described earlier.

Table 16: Maternal Nutrition Knowledge among FLWs

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)%			Mean (SD)/%		
Signs of maternal malnutrition+						
She is short/small for age	11.8%	18.7%	15.2%	12.1%	15.8%	13.8%
She is thin for height	53.9%	52.4%	53.1%	61.4%	60.3%	60.9%
She loses appetite	45.0%	43.4%	44.2%	54.4%	66.3%	59.9%
She gets ill often	56.2%	56.0%	56.1%	53.5%	57.6%	55.4%

She has little to no energy	61.0%	61.5%	61.2%	51.6%	63.6%	57.1%
She has very thin arms	23.7%	21.7%	22.7%	16.3%	24.5%	20.1%
Other	4.1%	4.2%	4.2%	7.0%	4.4%	5.8%
Don't know	7.1%	16.3%	11.6%	7.0%	6.0%	6.5%
Antenatal/Post-natal care						
4 ANC checkups needed for pregnant woman*	55.6%	67.5%	61.5%	70.7%	76.1%	**73.2%****
180 days of iron/folic acid tablets during pregnancy	32.0%	64.5%	48.1%	53.0%	70.7%	61.2%
45 iron/folic acid tablets post-partum	29.0%	62.7%	45.7%	47.4%	68.5%	**57.1%***
Number of TT injections pregnant woman should have	0.4 (0.5)	0.6 (0.5)	0.5 (0.5)	0.3 (0.5)	0.5 (0.5)	0.4 (0.5)

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

+ Note: These percentages may not add to 100% as this was a multiple response question

**P<0.05; **P<0.01; ***P<0.001*

Infant and young child nutrition

Health and Non- Health FLWS are trained on child nutrition and the 1000 days concept. Table 17 highlights FLW knowledge on child malnutrition. Being short/small for age was mentioned as a sign of malnutrition by fewer than half of FLWs in both intervention and comparison areas. The first 1,000 days as the window of opportunity for prevention was mentioned by 14 percent more FLWs in intervention areas (P<0.001) than in comparison areas. At least one accurate major consequence (poor mental development, poor physical development, poor health, or sub-optimal productivity later in life) of child malnutrition was correctly reported by nearly all FLWs in intervention and comparison areas.

Surprisingly, non-health FLWs in both areas seemed more aware than those in the health sector that the first 1,000 days is the window of opportunity for preventing malnutrition.

Table 17: Knowledge of child malnutrition among FLWS

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean %			Mean %		
Being short/small for age as a sign of malnutrition	32.0%	33.1%	32.5%	40.9%	47.8%	44.1%
Causes of child malnutrition+						
Insufficient, inappropriate feeding	96.5%	86.1%	91.3%	97.2%	95.1%	96.2%
Illness	22.5%	24.1%	23.3%	16.3%	27.7%	21.6%
Poor water, sanitation, and hygiene	46.2%	38.0%	42.1%	40.9%	47.8%	44.1%
Intergenerational malnutrition	5.9%	12.1%	9.0%	4.7%	5.4%	5.0%
Poverty	30.8%	24.1%	27.5%	16.3%	19.6%	17.8%
Witchcraft, divine will, gods, breastfeeding (wrong answers)	8.3%	21.1%	14.6%	3.3%	11.4%	7.0%
Prevention window of opportunity: First 1000 days	77.5%	71.7%	74.6%	91.6%	86.4%	**89.2%*** **
Consequences: mental development, physical development, poor health, or productivity	97.0%	91.6%	94.3%	98.6%	96.7%	97.7%
*** P<0.001*						
+ Note: These percentages may not add to 100% as this was a multiple response question						

As illustrated in the graph below (figure 6) knowledge that breastfeeding should be initiated within 1 hour and that colostrum should be given to the baby was high among FLWs in both intervention and comparison areas. The ability to accurately define exclusive breastfeeding was higher among FLWs in intervention areas: 7 out of 10 vs. 6 out of 10, but this difference was not statistically significant.

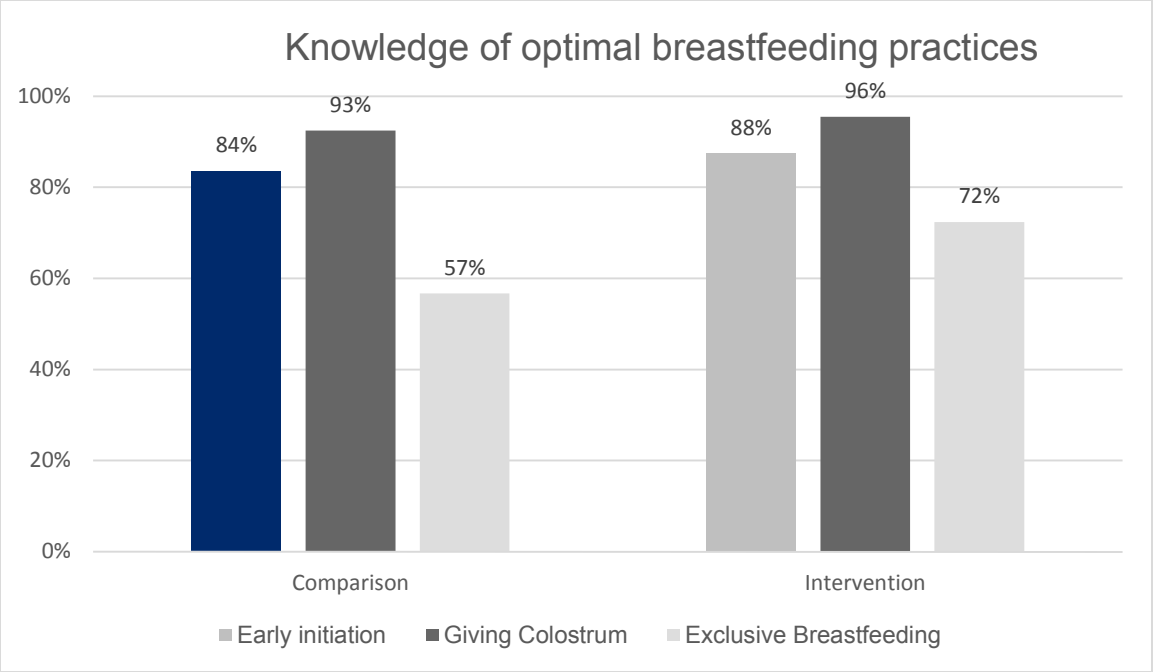

Figure 6: Knowledge of optimal breastfeeding practices among FLWs.`

FLWs in both areas are knowledgeable about optimal breastfeeding practices, especially early initiation (i.e. within an hour of birth) and giving colostrum (Figure 6). Compared to other breastfeeding practices, knowledge of exclusive breastfeeding was lower among FLWs. However, FLWs in *Suaahara* areas were more likely to have correct knowledge of exclusive breastfeeding (i.e. nothing but breast milk, not even water) than those in comparison areas.

FLWs were also asked about when breastfeeding and exclusive breastfeeding should be discontinued, about the benefits of breastfeeding and about strategies they might recommend to women who believe they are not producing enough breast milk, an issue commonly mentioned breastfeeding mothers. Unfortunately, one unintended consequence of the *Suaahara* message promoting breastfeeding for at least two years is that, when asked the appropriate age at which breastfeeding should be discontinued, FLWs in *Suaahara* areas believe breastfeeding should be discontinued about 3 months earlier than what their counterparts in comparison areas believe (Table 18). Currently the recommendation is that breastfeeding should continue for 24 months, *at least*, without mention of an age at which breastfeeding should be discontinued.

Though FLWs were more likely to mention breastfeeding more often as a solution for milk insufficiency (46 percent in intervention vs. 33 percent in comparison areas), there was very little difference by area in the percentages that mentioned other strategies. Of concern is that the most commonly cited strategies were for mothers to eat more nutritious foods and drink more liquids--each mentioned by over 65 percent of FLWs in both areas. In fact, breastfeeding on demand, breastfeeding more often, and emptying one breast completely and then switching to the other are more effective methods for stimulating breast milk production. These strategies were mentioned by less than half of the FLWs.

Knowledge of the health benefits of exclusive breastfeeding was high among both health and non-health FLWs in both areas. Other benefits of exclusive breastfeeding, such as reduced fertility, were less frequently mentioned (Table 18).

Table 18: Knowledge of breastfeeding practices among FLWs

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Appropriate timing to stop breastfeeding (in months)	32.2 (11.3)	30.3 (11.7)	31.3 (11.5)	29.9 (12.6)	26.5 (9.8)	28.4 (11.5)
Appropriate timing to stop exclusive breastfeeding (in months)	5.9 (1.9)	6.0 (4.3)	5.9 (3.3)	6.0 (1.3)	6.3 (3.0)	6.2 (2.2)
What mother should do if she thinks she has insufficient breastmilk+						
Breastfeed more often/regularly	23.1%	43.4%	33.1%	39.1%	54.9%	46.4%
Breastfeed on demand	5.3%	6.0%	5.7%	10.7%	16.3%	13.3%
Give other liquids/tinned milk/foods	16.0%	16.9%	16.4%	14.9%	16.3%	15.5%
After emptying one breast, switch to the other	3.6%	9.6%	6.6%	13.5%	25.5%	19.1%
Feed animal milk to the child	25.4%	26.5%	26.0%	25.1%	22.3%	23.8%
Drink more water/liquid	68.6%	64.5%	66.6%	67.4%	72.8%	69.9%
Eat more food	34.9%	33.7%	34.3%	47.4%	44.0%	45.9%
Eat more nutritious foods	88.2%	84.3%	86.3%	78.6%	84.2%	81.2%
Stop breastfeeding	0.0%	0.0%	0.0%	0.5%	0.0%	0.3%
Benefits of exclusive breastfeeding for 6 months+						
Protects baby from illness/ helps baby grow better/contains everything a baby needs for first 6 months	96.5%	89.2%	92.8%	98.6%	98.9%	98.8%
Mother less likely to get pregnant/delays return of	0.6%	12.1%	6.3%	1.4%	11.4%	6.0%

mother's monthly bleeding						
Breast milk is clean, safe, and convenient/affordable/reduces health care costs	24.9%	28.9%	26.9%	11.6%	14.7%	13.0%
*P<0.05						

FLW's were asked about their knowledge regarding complementary feeding, the table below highlights that knowledge as to when water, milk, semi-solid foods, and solid foods should be introduced to a child was similar between FLWs in both intervention and comparison areas. However, FLWs in comparison areas thought that introduction of eggs and animal meats should happen by an average of 1 month later than that by FLWs in intervention areas. It was found that there was no strong variation regarding when to introduce complementary foods was not that different between health and non-health FLWs.

Table 19: Knowledge of complementary feeding practices among FLWs

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean (SD)/%			Mean (SD)/%		
Appropriate age to give each liquid/food (in months)						
Water/clear liquids* (among those who didn't report "don't know")	5.6 (1.4)	5.4 (1.4)	5.5 (1.4)	5.8 (0.7)	5.8 (0.7)	5.8 (0.7)
Milk/milk products (excluding breast milk) * (among those who didn't report "don't know")	5.7 (1.3)	5.6 (1.3)	5.7 (1.3)	5.8 (0.9)	5.8 (1.1)	5.8 (1.0)
Semi-solid foods)* (among those who didn't report "don't know")	6.0 (0.9)	5.9 (0.8)	6.0 (0.9)	6.1 (0.8)	6.0 (0.6)	6.0 (0.7)
Solid foods * (among those who didn't report "don't know")	6.9 (2.2)	6.5 (1.5)	6.7 (1.9)	7.1 (2.2)	7.4 (3.3)	7.2 (2.8)
Eggs * (among those who didn't report "don't know")	7.9 (2.9)	7.7 (5.6)	7.8 (4.5)	6.8 (1.9)	7.0 (2.6)	6.9 (2.3)
Animal meat/fish * (among those who didn't report "don't know")	9.2 (3.7)	8.6 (4.3)	8.9 (4.0)	7.9 (3.5)	7.8 (4.1)	7.9 (3.8)

Feeding during illness

Children who are malnourished are more vulnerable to common illnesses such as diarrhea and acute respiratory infections. During illness, children require additional nutrients to aid in the body's immune response, making them more vulnerable to malnutrition. This cycle of illness and undernutrition is compounded by loss of appetite that usually accompanies both. It is a critical time where appropriate feeding practices can have an impact on nutritional status. Children who are ill should continue to be fed as usual and more food than usual, if possible. There was not much difference in knowledge of sick child feeding between FLWs in intervention and comparison areas. FLWs in *Suaahara* areas were more likely to know that children should feed more than usual or receive an extra meal, but knowledge of how sick children should be fed was still relatively low (32 percent and 41 percent, respectively).

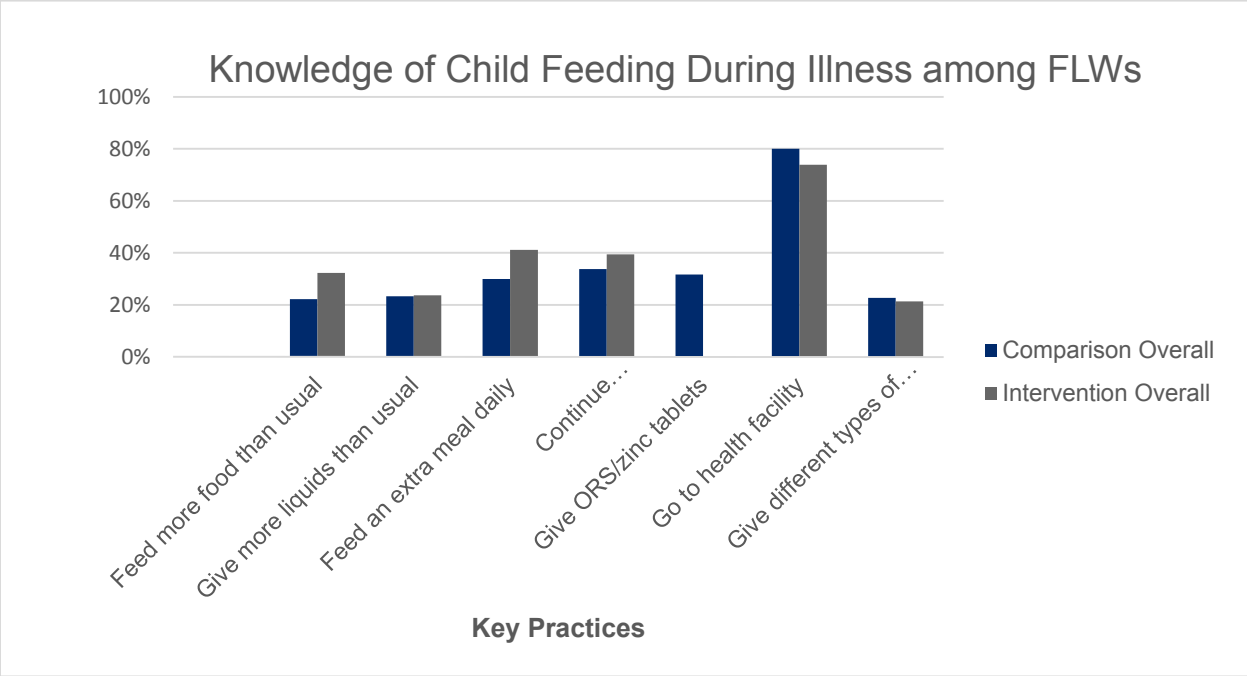

Figure 7: Knowledge of Child Feeding During Illness Practices

Healthy Timing and Spacing (HTSP)

The period of pregnancy is associated with increased nutritional requirements for women, which if not met can have a negative impact not only on the health of the newborn but the mother as well. Pregnancies that occur too close together do not allow sufficient time for mothers to re-establish nutritional stores that are compromised during pregnancy. To improve pregnancy and nutrition outcomes for both mother and child, *Suaahara* promotes delaying first pregnancies until after age 20 and spacing pregnancies at least 2 years apart. Specifically, *Suaahara* has trained health staff to improve their counseling techniques around HTSP and on the use and promotion of long acting contraceptives.

Family planning knowledge was measured among FLWs in both areas. Roughly the same proportion of FLWs knew permanent methods for delaying pregnancy and short-term methods. In the intervention area, while more health FLWs knew a permanent method than FLWs, more

non health FLW (99 percent) knew a short-term method compared to health sector FLWs (91 percent) (data not shown).

WASH

Because the linkages between illness and nutrition are so strong, *Suaahara* promotes household water treatment, use of latrines, appropriate disposal of feces and hand washing at critical times as ways to prevent illness. The chart below examines knowledge among FLWs about the critical times for hand washing and appropriate methods for treating the household water supply so that it is safe for drinking. Knowledge of at least one of the 4 recommended methods—boiling, adding bleach/ chlorine, filtering, and solar disinfection (SODIS)—was high in both areas, it was about 4 percentage points higher among FLWs in intervention areas ($p<0.05$). The most commonly mentioned "critical times" for hand washing were after cleaning the child's bottom and after defecation. Fewer FLWs were knowledgeable about the importance of hand washing prior to food preparation, feeding children and eating. In intervention areas 18 percent more health FLWs knew to wash hands before preparing/cooking compared to non-health FLWs. A similar proportion of FLWs in both areas knew all 5 critical times for hand washing.

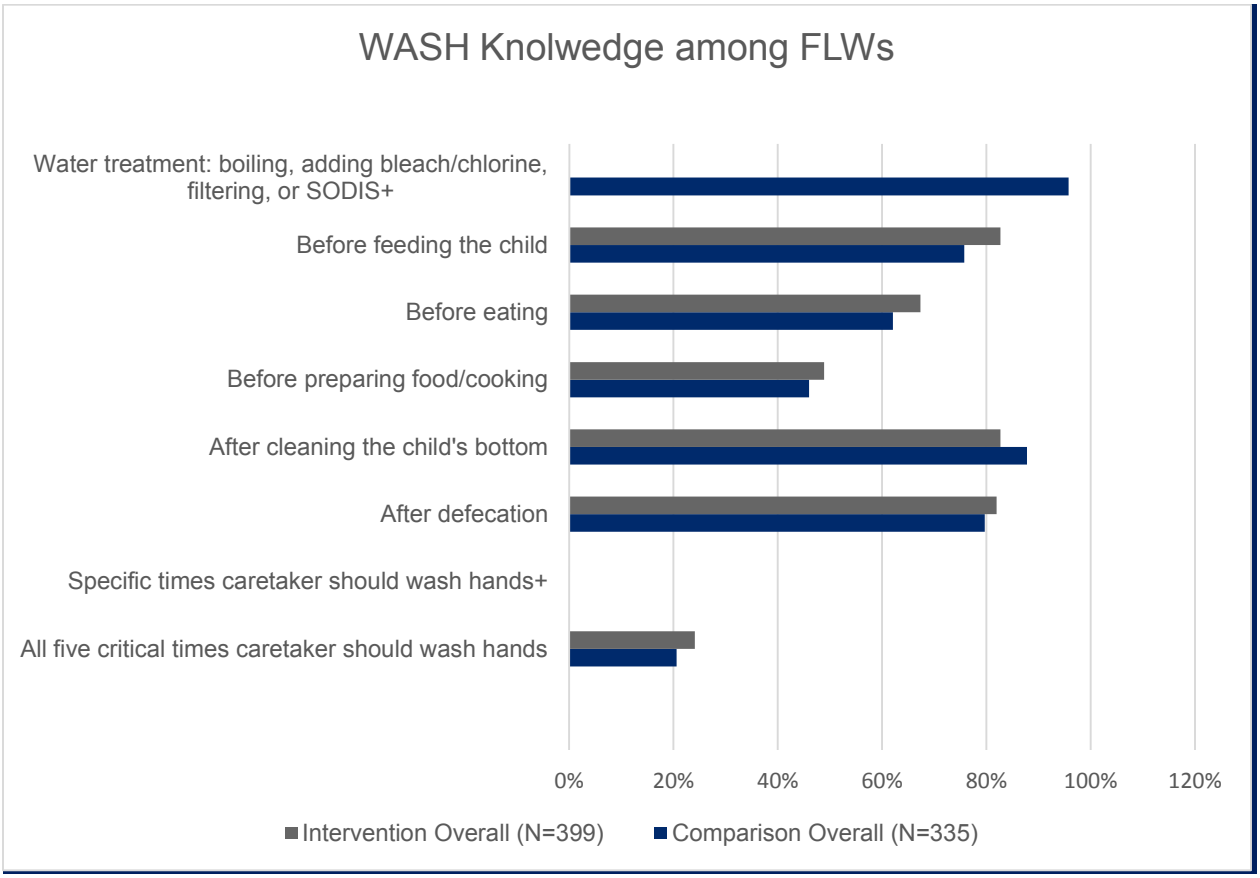

Figure 8: WASH Knowledge among FLWs

SKILLS

As previously noted IPC is one of the core components of *Suaahara*, the table below focuses on child feeding suggestions that FLWs reported giving during counseling to mothers of children younger than 24 months. When asked what advice they'd give to mothers of infants younger than 6 months who are not breastfeeding well, FLWs in intervention areas were more likely to mention discussing positioning, attachment, and show/help with positioning compared to FLWs in comparison area, though this difference was not statistically significant. Regarding feeding children 6-23 months not eating well, there were no major differences between FLWs in intervention and comparison areas.

Table 20: Child Feeding Counseling advice provided by FLWs

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean %			Mean %		
For infant under 6 months not breastfeeding well						
Discuss how to position baby	17.2%	47.6%	32.2%	27.0%	60.9%	42.6%
Discuss how to attach baby	10.7%	34.3%	22.4%	19.5%	55.4%	36.1%
Show/help with positioning	3.6%	22.3%	12.8%	12.1%	38.0%	24.1%
For child 6-23 months not eating well						
Suggest reducing distractions	18.3%	24.1%	21.2%	9.3%	17.9%	13.3%
Suggest giving other foods	14.8%	28.3%	21.5%	23.7%	22.8%	23.3%
Suggest changing flavor of the food	36.7%	47.0%	41.8%	51.2%	62.5%	56.4%
Suggest feeding slowly and patiently	47.3%	49.4%	48.4%	54.0%	65.2%	59.2%
Suggest talking/playing with the child	48.5%	54.2%	51.3%	55.4%	74.5%	64.2%

Table 21 below shows the focuses on family planning counseling provided by FLWs. The 3 key messages relating to healthy timing and spacing of pregnancies (HSTP) promoted by *Suaahara* are: 1) waiting until a woman is 20 years of age before trying to become pregnant; 2) waiting 2 years between pregnancies; and 3) using a family planning method of the woman's choice for at least 2 years after delivery. There were no statistically significant differences between intervention and comparison areas in the advice reportedly provided by FLWs. Similarly, there was no difference on which method FLWs reported recommending.

In both areas more health FLWs counseled on the 3 HTSP messages and both permanent and short-term methods than non-health FLWs. However, non-health FLWs in intervention areas overall seemed to counsel more on family planning than non-health FLWs in comparison areas.

Table 21: Counseling on Family Planning

	Comparison			Intervention		
	Non-health (N=169)	Health (N=166)	Overall (N=335)	Non-health (N=215)	Health (N=184)	Overall (N=399)
	Mean %			Mean %		
Important HSTP advice usually given to mothers*+ (among those who said ever counseled a mother)						
Waiting 2 years between each pregnancy	11.8%	53.6%	32.5%	28.4%	53.8%	40.1%
Using family planning method of woman's choice for 2 years between pregnancies	18.3%	64.5%	41.2%	27.9%	63.0%	44.1%
Waiting until 20 years of age before trying to become pregnant	5.3%	24.1%	14.6%	4.7%	14.1%	9.0%
Types of methods ever counseled						
Permanent	3.6%	20.5%	11.9%	8.4%	14.7%	11.3%
Short-term	20.1%	66.9%	43.3%	31.6%	69.0%	48.9%

**P<0.05*
+ Note: These percentages may not add to 100% as this was a multiple response question

DISCUSSION

Overall, *Suaahara* seems to have had an impact on how well trained frontline workers are. Compared with intervention areas, FLWs in *Suaahara* areas are more likely to have received training recently (within the last 12 months), they received more training in the last year and were trained on more topics. Specifically, *Suaahara* area FLW are more likely to have received skills-based training such as how to facilitate a group meeting. Furthermore, FLWs in *Suaahara* areas are more likely to receive training in areas unrelated to the sector in which they work. Health workers are more likely to be trained in WASH and homestead food production and non-health frontline workers are more likely to be trained in maternal and child health and nutrition. This speaks to the multi-sector approach that is a hallmark of the *Suaahara* project and allows *Suaahara* to tap into otherwise unused cadres of frontline workers to promote and reinforce key behaviors.

For many of the areas that *Suaahara* trains the FLWs on, there was no difference in knowledge between FLWs in the two areas. However, compared with their counterparts, *Suaahara* area FLWs are more knowledgeable about the following:

- That women should receive 4 ANC visits during pregnancy;
- That post-partum women should receive 45 tablets of iron/folic acid supplements;
- That breastfeeding should be initiated within an hour of birth;
- That newborns should be given colostrum;
- That exclusive breastfeeding means that nothing, not even water should be fed to infants younger than six months; and
- All five critical times for hand washing.

While this survey did not observe the frontline workers skills, their responses to some of the questions indicate that they may be more comfortable providing breastfeeding mothers with advice about positioning & attachment, a skill critical in supporting mothers to breastfeed successfully.

The FLW study also highlighted some areas for improvement. Though FLWs in *Suaahara* areas are trained in a variety of topics and trained frequently, they expressed great interest in additional training on interpersonal communication. Since few of the FLWs in *Suaahara* areas reported using all of the GALIDRAA steps when counseling mothers, it would be important that training include ample opportunity to practice these skills, for example using role play. Other areas where FLW knowledge could be improved were awareness of the correct definition of exclusive breastfeeding, sick child feeding and how to address milk insufficiency or perceived milk insufficiency. Increasing awareness among FLW of the importance of hand washing prior to food preparation and feeding is also an area for improvement.

RESULTS FROM THE PEAP STUDY

KEY RESULTS FROM PEAP STUDY

Women in *Suaahara* areas had more contacts with FLWs on more topics using more materials.

- On average they had 4.5 contacts with FLWS compared to 3.1 in the previous 6 months(p <0.05), with more DAG women in intervention sites meeting with FLWs outside HMGs, and 87 percent of women in *Suaahara* sites having contact with FLWs outside HMGs, compared to 65 percent (p < 0.05).
- Women in *Suaahara* areas had more sources for information on health, nutrition, family planning, (P < 0.01) WASH and Agriculture/Homestead Food production. (P < 0.001) than women in comparison sites.
- *Suaahara* women exposed to more SBCC tools for health and nutrition and WASH than comparison areas. Women in intervention sites had seen an average of 2.8 tools for health and nutrition, compared to 0.3 in comparison sites (P <0.001) and 1.8 tools for WASH compared to 0.2 (p < 0.01)

Women in *Suaahara* areas are exposed more often to key messages in *Suaahara* regarding health and nutrition and have better knowledge and practices on some key child and maternal nutrition behaviors and practices

- 62 percent of women in Suaahara sites were able to define exclusive breastfeeding compared to 16 percent in comparison sites (p <0.01)
- 78 percent of women reported providing a child with minimum dietary diversity in Suaahara sites compared with 52 percent of women in comparison areas. (p <0.001)
- Exposure to key Suaahara Messages was higher among intervention group, for all messages, and statistically significant for all except feeding a sick child.
- Statistically significant difference among women in Suaahara areas consuming IFA for 180 Days (89 percent compared to 64 percent, p< 0.05), and women taking IFA post-partum (p< 0.01)
- More women in Intervention sites had attended 4 ANC visits (82 percent) than comparison (68 percent) though this was not statistically significant.

As stated in the introduction, *Suaahara* has been able to reach more than 640,000 households across Nepal. *Suaahara* also explicitly aims to reach disadvantaged households to reduce disparities in access to services, in access to information and in adoption of practices. In this section, the results from the PEAP survey are presented and disaggregated not only by area (comparison and intervention), but also by whether the households were identified as being from a disadvantaged group (DAG).

EXPOSURE TO SUAAHARA INTERVENTIONS

Table 22 shows how well households in intervention areas have been exposed to *Suaahara* and its major intervention platforms. Nearly 8 out of 10 women in *Suaahara* communities had heard of the program, but less than half knew that women who aren't mothers or pregnant and men

are allowed to participate. Most of the women interviewed (70 percent) knew that one of the aims of *Suaahara* was to improve health and nutrition. Fewer women knew about the homestead food production (54 percent), WASH (32 percent) and family planning (11 percent) components of the program. Health and nutrition were most often reported to be a benefit of *Suaahara* and more than half of surveyed women reported WASH was a program benefit, only one quarter mentioned HFP as a benefit for participants of the program. There were no major differences between DAG and non-DAG women reporting to have heard of *Suaahara* or in perceptions of programmatic aims and benefits. However, DAG households were slightly more aware that men as well as women who aren't pregnant or mothers are allowed to participate.

Table 22: *Suaahara* awareness and perceived benefits among pregnant women and mothers

	DAG (N=115)	Non-DAG (N=117)	(N=232)
	Mean %		
Ever heard of *Suaahara*	78.3%	79.5%	78.9%
***Suaahara* aims+**			
Nutrition/Health	65.2%	75.2%	70.3%
Homestead food production/Poultry breeding	52.2%	55.6%	53.9%
Water, Sanitation, and Hygiene	29.6%	33.3%	31.5%
Family Planning/HTSP	7.8%	14.5%	11.2%
Don't know	3.5%	5.1%	4.3%
Participation allowed: women who aren't mothers or pregnant	46.1%	43.6%	44.8%
Participation allowed: men	44.4%	40.2%	42.2%
Benefits for participants+			
Nutrition/Health	66.1%	69.2%	67.7%
Homestead food production techniques/food	20.0%	29.9%	25.0%
Water, Sanitation, and Hygiene	50.4%	57.3%	53.9%
Family planning/HTSP	21.7%	12.8%	17.2%
Women's empowerment	3.5%	7.7%	5.6%
Household standard of living/income/savings	26.1%	28.2%	27.2%
Community development	1.7%	2.6%	2.2%

+ Note: These percentages may not add to 100% as this was a multiple response question

Suaahara uses several mechanisms to reach mothers with behavior change communication related to maternal and child health and nutrition, WASH, family planning and homestead food production. These include a combination of interpersonal communication, using a variety of printed materials as job aids, and mass communications. Interpersonal communication includes home visits, food demonstrations and the health mothers' group meetings while mass communication strategies include broadcasting the *Bhanchhin Aama* weekly radio program and the call-in series as well as hoarding boards. In the sections that follow exposure to these is described.

Table 23 (below) shows participation levels in *Suaahara* activities among women in the intervention areas. About 1 in 3 women reported attending any *Suaahara* activity other than a group meeting and about the same number reported attending food demonstrations, indicating this as a primary village level activity. More than 4 in 10 women had seen *Suaahara*-related messages on hoarding boards. Recognition of the *Bhanchhin Aama* brand is high; 57 percent of women in the sample had heard of the radio program. About one-third of the women in the sample have listened to the show an about 20 percent listen at least once a month, indicating that once the radio program has been listened to once, listeners tend to continue tuning in.

There were no significant differences between DAG and non-DAG women participating in *Suaahara* activities, which suggests that *Suaahara*'s strategy of DAG-inclusion is effective. In fact, slightly more DAG women have seen the hoarding boards and have heard of and listen to *Bhanchhin Aama,* compared with non-DAG women. This is likely to the additional supportive activities in DAG VDCs that encourage DAG women to listen including such as listening groups and provision of radios to communities.

Table 23: *Suaahara* Activities and Exposure by PEAP Study participants

	Intervention		All
	DAG (N=115)	Non-DAG (N=117)	(N=232)
	Mean %		
Attended any activities other than group meetings	32.2%	34.2%	33.2%
Participated in food demonstrations	30.4%	34.2%	32.3%
Bhanchhin Aama			
Ever heard of this radio program	59.1%	54.7%	56.9%
Ever listened to this radio program	24.4%	21.4%	22.8%
Listens at least once a month to this radio program	20.9%	18.0%	19.4%
Ever seen messages on hoarding boards	47.0%	38.5%	**42.7%*** **

*****P<0.001*

Several distinguishing features of the *Suaahara* program are: a) the convergence of interventions across multiple sectors at the household level; b) the repeated exposure to consistent information from different sources that is possible by working through frontline workers from multiple sectors; and c) its intentional prioritization of DAG households without compromising overall coverage. For each sector in which *Suaahara* works, respondents were asked whether or not in the six months prior to the survey they had received information from a variety of sources (13 different sources, e.g. radio, an FCHV, hoarding board, etc.). Table 24 presents the mean number of sources of sector-specific information mentioned by women. On

average, women in in *Suaahara* areas had received information from more sources than women in comparison areas for every single sector. For each sector, women in *Suaahara* areas were exposed, on average to at least three sources of information. The only exception was homestead food production, women reported slightly fewer sources of information (2.7) for these interventions. All results were highly statistically significant when comparing intervention and comparison areas.

In *Suaahara* areas, the differences between the mean number of sources mentioned by DAG and those mentioned by non-DAG were small, ranging between 0.2 and 0.3. *Suaahara*'s strategy to prioritize reaching DAGs seems to be successful at reaching DAGs with information about health, nutrition, family planning, WASH and homestead food production. In terms information sources, DAG households in *Suaahara* areas seem to have better access than even non-DAG in comparison areas.

Table 24: Number of Sources of information by Sector among PEAP Study participants in previous 6 months

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Health	1.6 (1.1)	2.3 (1.3)	3.5 (1.6)	3.7 (1.5)	1.9 (1.2)	**3.6 (1.5)****	2.8 (1.6)
Nutrition	1.3 (1.0)	1.9 (1.2)	3.3 (1.5)	3.6 (1.5)	1.6 (1.1)	**3.5 (1.5)*****	2.5 (1.6)
Family Planning	1.4 (1.2)	2.0 (1.4)	3.1 (1.4)	3.4 (1.5)	1.7 (1.3)	**3.2 (1.4)****	2.5 (1.6)
Water, Sanitation and Hygiene	1.0 (1.0)	1.7 (1.4)	3.3 (1.6)	3.6 (1.7)	1.3 (1.2)	**3.4 (1.7)*****	2.4 (1.8)
Agriculture/ Homestead Food Production	0.3 (0.7)	0.8 (1.0)	2.6 (1.7)	2.8 (1.8)	0.6 (0.8)	**2.7 (1.7)*****	1.6 (1.7)

*** P<0.01; *** P<0.001*

Suaahara has developed a comprehensive SBCC package with multiple tools and materials distributed in communities, health centers and through FLWs. Exposure to *Suaahara* health and nutrition BCC materials is high, especially the discussion cards and pictorial books used by frontline workers for group counselling and group meetings. Over 60 percent of women in *Suaahara* areas were exposed to each of these. Exposure to the WASH BCC tools was lower (36 percent for discussion cards and 40 percent for pictorial books). However, 50 percent of the women in *Suaahara* areas reported seeing the hand washing stations promoted by *Suaahara*.

Table 25: Social Behavior Change Communication Material

	Intervention		
	DAG (N=115)	Non-DAG (N=117)	(N=232)
	Mean (SD)/ %		
Total number of health/nutrition tools	2.6 (2.4)	3.0 (2.6)	**2.8 (2.5)*** **
Specific tools			
Discussion cards	61.7%	63.3%	62.5%
Pictorial books	59.1%	62.4%	60.8%
Posters	31.3%	39.3%	35.3%
Locally available foods	42.6%	57.3%	50.0%
Training aid pictures	7.8%	16.2%	12.1%
Crop calendars	15.7%	18.8%	17.2%
Poultry flip charts	21.7%	15.4%	18.5%
Garden-to-plate materials	14.8%	23.9%	19.4%
Crop game cards	7.0%	7.7%	7.3%
Total number of Water, Sanitation, and Hygiene (WASH) tools	1.6 (1.7)	1.7 (1.8)	**1.7 (1.8)** **
Specific tools			
Discussion cards	33.0%	38.5%	35.8%
Pictorial books	37.4%	42.7%	40.1%
Posters	35.7%	39.3%	37.5%
Hand washing station	48.7%	52.1%	50.4%
DVDs	1.7%	0.9%	1.3%
PA vial	2.6%	0.0%	1.3%

*** P<0.01; *** P<0.001*

The *Bhanchhin Aama* radio drama is an important component of *Suaahara*'s BCC strategy (see box below). Women who have listened to the *Bhanchhin Aama* radio program were asked which key messages they heard on the radio program. These results are presented in Figure 9. Overall messages relating to maternal care (17 percent) and family planning (19 percent) were the most frequently reported, whereas messages relating to household dynamics (2 percent)and gender equity and social inclusion are reported the least (2 percent).

More DAG women report to have heard messages via *Bhanchhin Aama* related to maternal care, infant and young child feeding, family planning, and WASH. However, more Non-DAG women report to have heard messages on homestead food production/agriculture, household dynamics and gender equity and social inclusion.

Bhanchhin Aama 'Mother says'

Since Suaahara involves multiple sectors and has multiple messages for every target audience (pregnant women, husbands, newly married women, mothers-in-law, etc.) a cohesive communication platform was required to tie all the varied messages together and reinforce recommended actions through a wide array of channels including mass media, print, and social mobilization, for this purpose Suaahara created a mothe-in-law character *Bhanchhin Aama*. *Bhanchhin Aama* - 'mother says' in Nepali was designed after formative research suggested that the mother-in-law has a key role to play in the nutrition behaviors of 1000 day households. She communicates nutrition information in a way that is credible, authentic and persuasive to *Suaahara*'s target audiences. There are *Aama* characters developed specific to each region of Nepal, so that the characters are relatable to 1000 days households in that region.

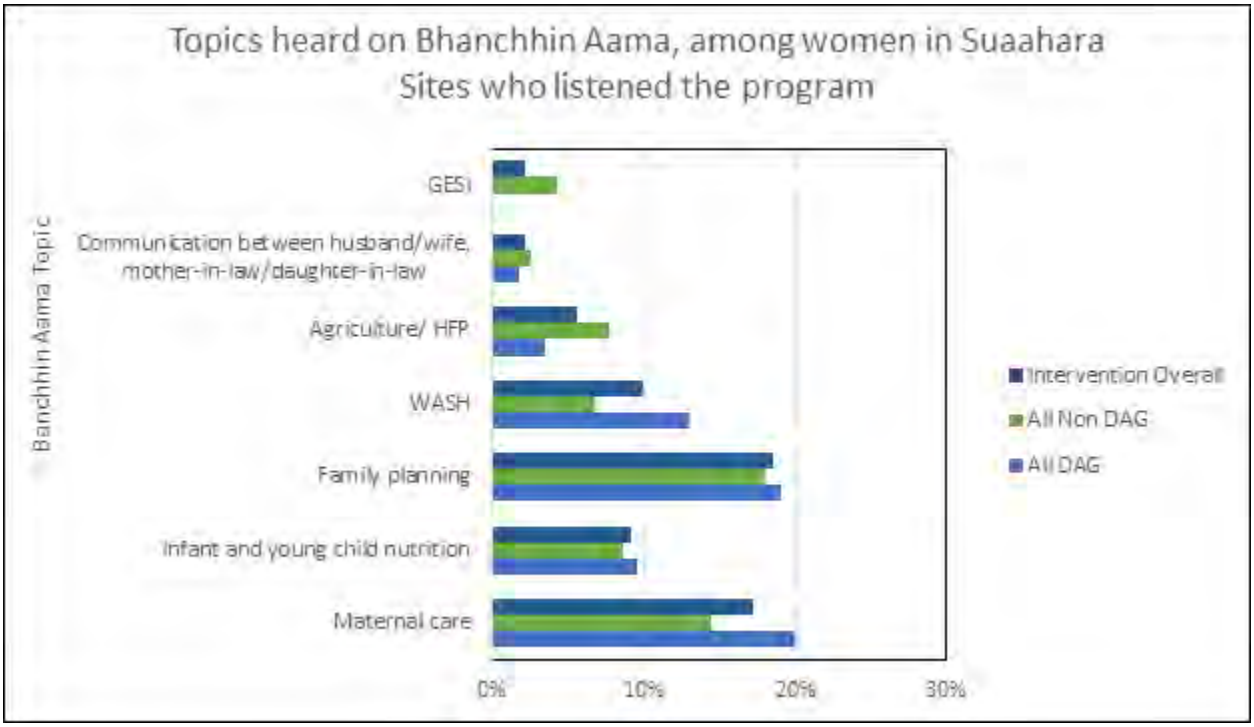

Figure 9: Exposure to Bhanchhin Aama messages among women in Suaahara sites

Suaahara has invested significantly in training FLWs on how to promote healthy behaviors related to maternal and child health and nutrition, WASH and homestead food production. The

frontline workers are important catalysts for behavior change, especially when they skilled in negotiating with women and able to support them to change. During the survey, women were asked about their interactions with frontline workers (Table 26).

In both comparison and intervention areas, FCHVs are very active; 94 percent of mothers in *Suaahara* areas and 88 percent in comparison areas reported that they had met with an FCHV in the last 6 months. However, in *Suaahara* areas, women reported a higher number of contacts in this period (4.5 in intervention vs. 3.1 in comparison; $p<0.05$). Most FCHV home visits were related to maternal and child health, nutrition or family planning. Though less than one quarter of the women in *Suaahara* areas reported discussing WASH with the FCHV, it was a much higher proportion than in comparison areas (8 percent). Even in *Suaahara* areas, the percent of women who reported speaking to an FCHV about homestead food production was very low (4 percent).

In *Suaahara* areas more than 6 out of 10 women had met a *Suaahara* field supervisor (FS) in the last 6 months, but only 1 in 4 women reported to have ever had a home visit by a *Suaahara* FS and less than 10 percent of women in *Suaahara* areas had met a *Suaahara* community hygiene and sanitation facilitator (CHSF) in the previous 6 months.

On many aspects of contact with frontline workers there were no major differences between DAG and non-DAG women. However, in *Suaahara* areas DAG and non-DAG women both met with FLWs an average of 4.5 times in the past 6 months. In comparison areas, DAGs reported fewer contacts during the six month period than non-DAGs (2.9 contacts for DAGs vs. 3.3 contacts for non-DAGs). In *Suaahara* areas, FCHVs are also more likely to meet women in the community, in addition to home visits and the health mothers' groups (HMG). These contacts seem to be very critical for reaching DAG women. In *Suaahara* areas, 90 percent of DAG women reported having an interaction with an FCHV that was not a home visit or during HMG, compared with only 60 percent of DAG women in comparison areas.

Table 26: Women's Contact with FLWs

	Comparison		Intervention		Full Sample		
	All		All		Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Total number of frontline workers meetings in last 6 months	2.9 (1.4)	3.3 (1.7)	4.5 (2.1)	4.5 (2.3)	3.1 (1.6)	**4.5 (2.2)***	3.8 (2.0)
Female Community Health Volunteers (FCHV)							
Met in last 6 months	86.1%	90.7%	92.2%	95.7%	88.3%	94.0%	91.1%
Number of times met in last 6 months	3.5 (4.0)	4.3 (3.8)	4.0 (2.6)	5.1 (4.1)	3.9 (3.9)	4.6 (3.5)	4.2 (3.7)

Home visit: ever	60.7%	68.6%	59.1%	68.4%	64.6%	63.8%	64.2%
Interactions other than home visit of health mother's group: ever	60.7%	70.3%	90.4%	83.8%	65.4%	**87.1%***	76.1%
Home visit activities*+ (among those who had a home visit in last 6 months)							
Nutrition/Health: Child	41.8%	52.5%	46.1%	50.4%	47.1%	48.3%	47.7%
Nutrition/Health: Maternal	27.1%	31.4%	37.4%	45.3%	29.2%	41.4%	35.2%
Homestead food production/Poultry breeding	0.0%	0.0%	2.6%	5.1%	0.0%	3.9%	2.0%
Water, Sanitation, and Hygiene	4.9%	11.0%	20.9%	23.0%	7.9%	22.0%	14.8%
Family Planning/HTSP	27.1%	31.4%	37.4%	45.3%	29.2%	41.4%	35.2%
Social Mobilizer							
Met in last 6 months	10.7%	12.7%	21.7%	21.4%	11.7%	19.8%	15.7%
Number of times in last 6 months	0.3 (1.0)	0.2 (0.7)	0.3 (0.8)	0.5 (1.1)	0.3 (0.9)	0.4 (1.0)	0.3 (0.9)

**P<0.05*

Suaahara field supervisors were hired to support the front line workers in *Suaahara* districts. They provide supportive supervision, help FLWs plan and coordinate activities such as the health mothers' groups and also work to raise awareness of the need to reach DAG households with *Suaahara* interventions. It is clear that the *Suaahara* Field Supervisors are also playing an important role in providing services themselves. As Table 27 (below) shows, 60% of women interviewed in the intervention areas had met with a *Suaahara* Field Supervisor. For the most part these meetings were not the regular home visits or health mothers' group meetings, but other interactions in the community. In contrast, only 10% of women reported that they had ever met a *Suaahara* Community Hygiene and Sanitation Facilitator.

Table 27: Interaction with *Suaahara* Field Supervisor

	Intervention		
	DAG	**Non-DAG**	**All**
***Suaahara* Field Supervisors (FS)**			

Met in last 6 months	63.5%	57.3%	60.3%
Number of times met in last 6 months	1.8 (1.9)	1.5 (1.7)	1.6 (1.8)
Home visit: ever	25.2%	25.6%	25.4%
Interactions other than home visit of health mother's group: ever	36.5%	40.2%	38.4%
***Suaahara* Community Hygiene and Sanitation Facilitator (CHSF)**			
Met in last 6 months	10.4%	9.4%	9.9%
Number of times met in last 6 months	0.3 (1.0)	0.4 (1.4)	0.3 (1.2)
Home visit: ever	3.5%	3.4%	3.5%
Interactions other than home visit of health mother's group: ever	7.0%	6.8%	6.9

As mentioned earlier, *Suaahara* makes very deliberate effort to not only achieve high coverage of interventions in the communities where they work, but also to reach disadvantaged communities and households with their interventions. Table 28 presents the findings relating to exposure to *Suaahara*'s key messages about health, nutrition, family planning, WASH and homestead food production. Exposure to all of the key *Suaahara* messages is very high, even among DAG women. Reported exposure to each of the nine *Suaahara* key messages was higher in the intervention areas than in the comparison areas ($p<0.05$ for each message). The only exception to this was the message regarding colostrum, though the difference was not statistically significant was still reported by nearly 80 percent of women in *Suaahara* areas (versus about 66 percent in comparison areas). In contrast, though exposure to messages about how to feed a sick child was higher in *Suaahara* areas (66 percent) than comparison areas (38 percent), the difference was not significant. Exposure to information about sick child feeding seems to be lagging behind the other key *Suaahara* messages.

In *Suaahara* areas there was little to no difference between DAG and non-DAG populations and in several instances more women from DAG areas reported to have heard the messages than women from non-DAG areas. On the other hand, in the comparison areas, the DAG universally lagged behind non-DAG women in exposure to key messages, highlighting that the investment and focus on DAGs in *Suaahara* is having an impact in exposure to key messages.

Table 28: Exposure to Key *Suaahara* Messages

					Full Sample	
	Comparison		Intervention		Comparison	Intervention
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)
	Mean %					
Ever heard (READ ALOUD)						
Putting a baby to the breast immediately after birth.	83.6%	92.4%	97.4%	97.4%	87.9%	**97.4%*** **
Not putting anything into the child's mouth	61.5%	70.3%	83.5%	74.4%	65.8%	78.9%

before breast milk or colostrum.						
Feeding only breast milk up to six months of age.	74.6%	81.4%	99.1%	100.0%	77.9%	**99.6%*** **
Not giving the child any water, other liquids or other foods up to six months of age.	52.5%	67.8%	93.0%	85.5%	60.0%	**89.2%***
Start feeding mashed family foods at 6 months.	54.9%	65.3%	93.0%	92.3%	60.0%	**92.7%***
Feeding eggs, fish, or meat (any animal source foods) to children older than 6 months.	28.7%	34.8%	87.0%	86.3%	31.7%	**86.6%*** **
How to feed a child when he/she is sick.	30.3%	45.8%	61.7%	69.2%	37.9%	65.5%
What a pregnant and lactating woman's diet should include (foods, frequency, amount, etc.)	54.9%	72.0%	93.9%	98.3%	63.3%	**96.1%*** **
Washing hands with water and soap before feeding the child.	75.4%	79.7%	99.1%	100.0%	77.5%	**99.6%*** **

** P<0.05; *** P<0.001*

As part of the Core package of interventions *Suaahara* has mobilized field supervisors and FCHVs to revitalize the existing Health Mothers Groups. Activities that have been added to HMGs include complementary food demonstrations, fecal contamination demonstrations and hand washing demonstrations, in addition to engaging and encouraging young mothers, DAG mothers and pregnant women to participate on a regular basis. Table 29 presents a summary of health mothers' groups relating to their availability, membership, and group activities. Health mothers groups (HMG) are more prevalent (or more women know about them and report their availability) in *Suaahara* areas (84 percent versus 65 percent). Although more women in *Suaahara* areas are members of a HMG than in non-*Suaahara* areas, less than one third of women are participating, indicating room for progress. Despite efforts to include DAG mothers in the HMGs, fewer than one in five is a member of the HMGs.

Table 29: Utilization of Health Mother's Groups

	Comparison	Intervention	Full Sample

					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Available in the ward	59.8%	71.2%	84.4%	83.8%	65.4%	84.1%	74.6%
Member	13.1%	17.0%	18.3%	27.4%	15.0%	22.8%	18.9%
Length of membership (in months)*, among those who are members (n=36-C, 53-I, 89-A)	32.4 (21.5)	27.6 (16.5)	21.4 (12.6)	25.7 (18.4)	29.7 (18.8)	24.0 (16.3)	26.3 (17.5)
Group meeting participation:							
Ever* (among those who are members)	100.0%	100.0%	100.0%	96.9%	100.0%	98.1%	98.9%
Number of times participated in last 6 month* (among those who are members)	3.9 (2.0)	3.8 (2.0)	3.7 (1.7)	4.1 (1.8)	3.8 (1.9)	4 .0 (1.8)	3.9 (1.8)
Last participation (in weeks)* (among those who are members and participated at least once in last 6 months)	4.6 (5.0)	4.6 (5.7)	5.0 (4.3)	6.2 (5.4)	4.2 (4.9)	5.1 (4.6)	4.7 (4.7)
Activities in group meetings*+ (among those who are members and participated at least							

once in last 6 months) (N=33-C, 52-I, 85-A)							
Feeding and cooking	26.7%	33.3%	66.7%	74.2%	30.3%	71.2%	55.3%
Gardening and poultry breeding	13.1%	11.1%	28.6%	25.8%	12.1%	26.9%	21.2%
Water, sanitation, and hygiene (WASH)	20.0%	27.8%	71.4%	41.9%	24.2%	53.9%	42.4%
Gender	6.7%	16.7%	4.8%	16.1%	12.1%	**11.5%****	11.8%

***P<0.01*

The HFP component of *Suaahara* at the time of survey had only been implemented for 11 months, and due to the fact that it is only provided in specific VDCs, as part of the Core ++ package, the number of women interviewed who had been recipients of *Suaahara* related HFP activities was very small.

Table 30: Exposure to HFP Activities in *Suaahara* Areas

	Intervention	
	Non-ag VDC (N=150)	**Ag VDC (N=82)**
	Mean (SD)/%	**Mean (SD)/%**
Ever heard (READ ALOUD)		
Growing diversified vegetables in the homestead garden	29.3%	**73.2%****
Feeding nutritious grains to chicken	14.7%	**36.6%*****
Chicken breeding	15.3%	**41.46%*****

***P<0.01, ***P<0.001*

In terms of exposure, significantly more women in agricultural VDCs compared to non-ag had heard three core messages. Of those that had heard the messages, 78 percent heard information on agriculture and HFP from FCHVs, followed by 60 percent from a field supervisor, and 44 percent from the radio, a testament to the effectiveness of the BCC platforms to reach women through interpersonal communication and mass media. Only fifteen percent had heard information from village model farmers (Figure 10)

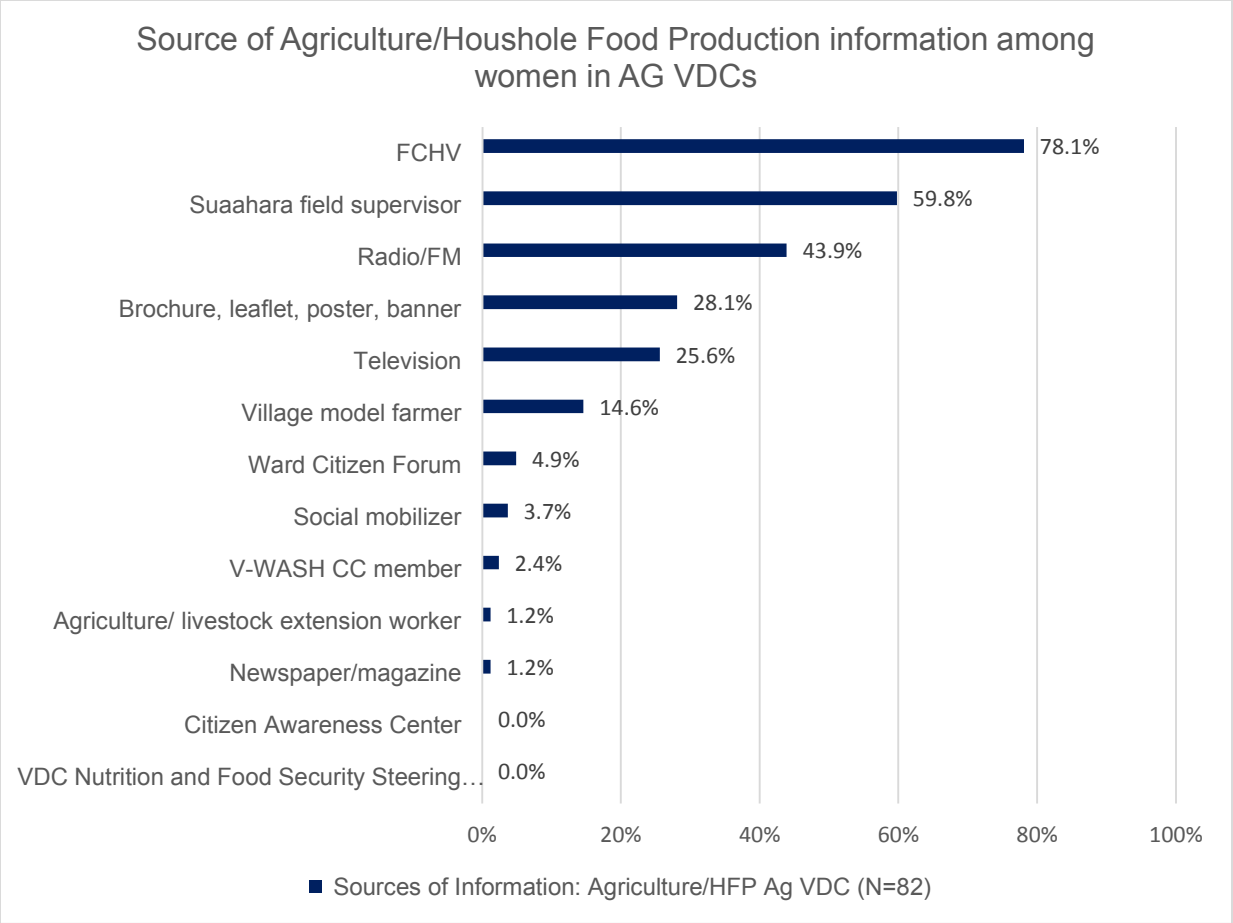

Figure 10: Source of Agriculture/Household Food Production Information Among women in Ag VDCs

KNOWLEDGE AND PRACTICES

In previous sections, findings suggest that generally, exposure to many of the *Suaahara* interventions is high. Mothers in *Suaahara* areas are aware of the key messages and for the most part, disparities between DAG and non-DAG households in terms of access to information and services are smaller than in the comparison areas. The sections that follow explore whether there are any differences in the knowledge or practices reported by women in *Suaahara* areas vs. comparison areas.

Child Nutrition

Mothers and pregnant women were asked about their knowledge of child nutrition. Knowledge of stunting, its consequences and the importance of the 1000 day period was higher in *Suaahara* areas than comparison areas. More than half of women in *Suaahara* areas mentioned being short or small for age as a sign of malnutrition, whereas only 13 percent in comparison areas mentioned this ($p<0.001$). An even greater discrepancy seen between the two sample areas related to the window of opportunity for prevention of malnutrition. More than 8 out of 10 women in *Suaahara* areas identified the first 1000 days as the window of opportunity for addressing stunting. Fewer than 5 out of 10 women in comparison areas reported this. Similarly, almost all women in *Suaahara* areas (97 percent) reported malnutrition to have consequences on mental development, physical development, poor health and/or productivity

later in life whereas only 80 percent in comparison areas reported this. Both of these differences were highly statistically significant (P<0.001).

While in *Suaahara* areas, there is little to no gap between DAG and non-DAG regarding knowledge about child malnutrition, the gaps are quite pronounced in comparison areas. For instance, knowledge regarding the prevention window of opportunity is only accurate for 39 percent of DAG women but 56 percent of non-DAG women in comparison areas.

Table 31: Knowledge Regarding Child nutrition

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean %						
Being short/small for age as a sign of malnutrition	13.9%	11.9%	49.6%	53.9%	12.9%	**51.7%*** **	32.0%
Prevention window of opportunity: first 1000 days (pregnant mothers and children <2y)	39.3%	55.9%	79.1%	82.9%	47.5%	**81.0%*** **	64.0%
Consequences: mental development, physical development, poor health, or productivity	75.4%	83.1%	96.5%	96.6%	79.2%	**96.6%*** **	87.7%

** P<0.05; *** P<0.001*

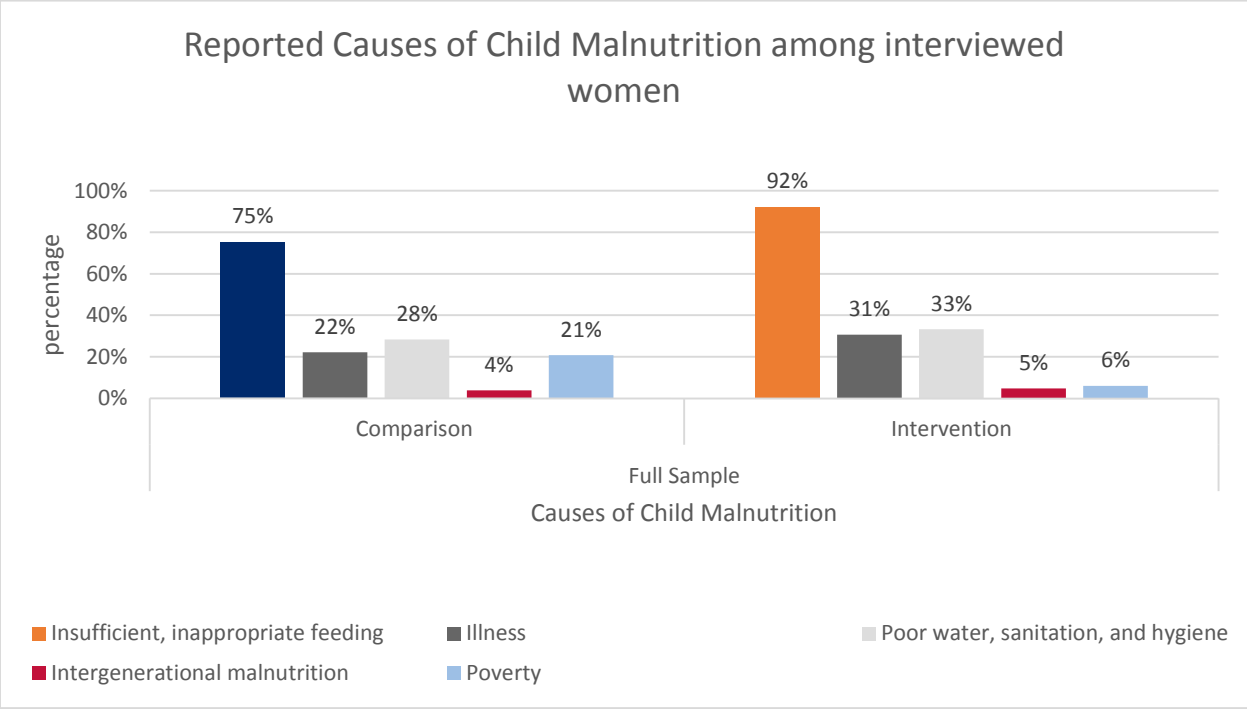

Figure 11: Reported Causes of child malnutrition among interviewed women

Table 32 focuses on knowledge specific to breastfeeding including timing, duration, exclusivity, etc. More than 9 out of 10 women reported that breastfeeding should be initiated within one hour of birth in *Suaahara* areas, whereas only 7 out of 10 women did in comparison areas($p<0.05$). When asked to define exclusive breastfeeding, almost 70 percent of women in were able to accurately define ideal practice in *Suaahara* areas a, whereas not even 20 percent in comparison areas did and this difference was highly statistically significant ($P<0.001$). In both survey areas, women on average reported that exclusive breastfeeding should end at 6 months of age. Women were also asked to comment on the benefits of exclusive breastfeeding and what they should do if they think they have insufficient breast milk. There were no statistically significant differences for any of the response categories, though more women in the Intervention area (76.7 percent) reported 'breast milk has everything a baby needs for the first six months than comparison (38.3 percent). Less DAG women (72.2 percent) than non DAG (81.2 percent) responded with this answer, though only 28.7 percent of DAGs in comparison areas responded this way, indicating that *Suaahara* has been able to improve knowledge among these women (data not shown). Overall, gaps remained between DAG and non-DAG women relating to their knowledge about breastfeeding in both *Suaahara* and non-*Suaahara* areas.

Table 32: Knowledge of breastfeeding practices

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG	DAG (N=115)	Non-DAG	(N=240)	(N=232)	(N=472)

		(N=118)		(N=117)			
	Mean (SD)/%						
Initiation within 1 hour	67.2%	78.0%	87.8%	94.9%	72.5%	**91.4%***	81.8%
Give colostrum to the baby	86.9%	88.1%	95.7%	94.9%	87.5%	95.3%	91.3%
Exclusive breastfeeding definition: Breast milk and nothing else (not even water)	9.0%	23.7%	58.3%	77.8%	16.3%	**68.1%*****	41.7%
Appropriate timing to stop breastfeeding (in months)	35.4 (13.5)	34.5 (13.6)	31.2 (13.6)	29.1 (10.2)	34.9 (13.5)	30.1 (12.1)	32.6 (13.0)
Appropriate timing to stop exclusive breastfeeding (in months)	6.0 (4.5)	6.1 (5.4)	6.3 (2.9)	6.2 (1.7)	6.1 (4.9)	6.2 (2.4)	6.1 (3.9)

** P<0.05; *** P<0.001*

Table 33: Knowledge of Complementary Feeding practices

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG	DAG (N=115)	Non-DAG	(N=240)	(N=232)	(N=472)

		(N=118)		(N=117)			
	Mean (SD)/%						
Appropriate age to give each liquid/food (in months)							
Water/clear liquids	5.0 (1.7)	5.3 (1.5)	5.9 (0.7)	5.8 (0.9)	5.1 (1.6)	5.8 (0.8)	5.5 (1.3)
Milk/milk products (excluding breast milk) (Range: 0-12m)	5.2 (1.4)	5.7 (1.2)	5.9 (1.0)	5.8 (0.8)	5.4 (1.3)	5.8 (0.9)	5.6 (1.2)
Semi-solid foods	5.6 (1.1)	5.9 (0.7)	6.0 (0.6)	6.0 (0.2)	5.8 (1.0)	6.0 (0.4)	5.9 (0.8)
Solid foods	6.8 (3.2)	6.7 (1.7)	7.5 (3.4)	7.4 (2.8)	6.7 (2.6)	7.5 (3.1)	7.1 (2.9)
Eggs	7.6 (2.9)	7.7 (2.9)	6.8 (2.2)	7.2 (2.7)	7.7 (2.9)	7.0 (2.5)	7.3 (2.7)
Animal meat/fish	8.8 (3.8)	8.7 (3.1)	7.7 (3.3)	8.0 (3.7)	8.8 (3.5)	7.8 (3.5)	8.3 (3.5)

The sharpest increases in the prevalence of stunting coincide with the introduction of complementary feeding. Even when infants begin complementary feeding at the right age (6 months), if the quality of the diet is poor, it may not be sufficient to prevent stunting or other forms of malnutrition. To promote complementary feeding that is of high quality, mothers are encouraged to feed children frequently and to feed a variety of foods, including animal source foods such as eggs and meat, if available, beginning at six months of age. A common misconception is that a six month old infant cannot consume eggs or flesh foods like meat or fish, either because they cannot chew or because they believe these foods are not easily digestible. If foods are soft, finely ground or chopped to avoid the risk of choking, digestibility should not be a concern. Animal source foods especially are nutrient dense and provide key nutrients not available in other foods.

Women were asked about their beliefs on about the age at which certain foods and liquids could be introduced to children (Table 33). While none of the differences between intervention areas and comparison areas were statistically significant, the average age reported as appropriate to introduce water, milk, and semi-solid foods was slightly closer to 6.0 (the correct answer) in *Suaahara* areas. However, in both *Suaahara* areas and non-*Suaahara* areas, the appropriate age to introduce solids, eggs, and animal meat/fish that was reported was beyond 6 months and sometimes close to 9 indicating room for improvement in understanding of appropriate complementary feeding practices. In *Suaahara* areas, the knowledge on this topic was similar for most food items between DAG and non-DAG women. The only exceptions were regarding eggs and animal meat/fish. On average, DAG mothers believed these foods should be introduced at 6.8 and 7.7 months of age, respectively, compared with non-DAG mothers who

said 7.2 and 8.0 months of age. In this case, knowledge of the appropriate age at which to introduce animal source foods was slightly higher among DAG mothers.

Table 34: Knowledge regarding child feeding during illness

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean(SD)/%						
Specific actions to take+							
Feed an extra meal daily	8.2%	12.7%	40.0%	41.9%	10.4%	**50.0%****	25.4%
ORS	15.6%	17.8%	5.2%	11.1%	16.7%	8.2%	12.5%
Feed more food than usual	4.9%	10.2%	13.0%	15.4%	7.5%	14.2%	10.8%
Feed different types of food than usual	13.9%	12.7%	10.4%	17.1%	13.3%	13.8%	13.6%
Give more liquids than usual	4.1%	8.5%	17.4%	12.0%	6.3%	14.7%	10.4%
Give different types of liquid than usual	0.8%	0.0%	2.6%	0.9%	0.4%	1.7%	1.1%
Continue breastfeeding	4.1%	6.8%	26.1%	29.1%	5.4%	27.6%	16.3%
Increase frequency of breastfeeding	9.0%	6.8%	27.0%	31.6%	7.9%	29.3%	18.4%
Give safe/treated drinking water	14.8%	20.3%	15.7%	18.0%	17.5%	16.8%	17.2%
Give Zinc tables	4.1%	5.9%	0.0%	0.0%	5.0%	0.0%	2.5%
Give syrups	18.9%	19.5%	6.1%	5.1%	19.2%	5.6%	12.5%

Go to health facility	93.4%	98.3%	73.9%	77.8%	95.8%	75.9%	86.0%
+ Note: These percentages may not add to 100% as this was a multiple response question							
*** P<0.01*							

Table 34 focuses on women's knowledge regarding how to feed a sick child. Women in *Suaahara* areas are more knowledgeable about appropriate feeding during illness that their counterparts in comparison areas. However, there is much room to improve understanding about the importance of feeding during illness. Only half of the women accurately reported that the child needs an extra meal daily when sick. However, in comparison areas, only 10 percent of women knew this and the difference was highly statistically significant (p<0.01). More women in *Suaahara* areas reported that a sick child should be fed more than usual (14 percent vs. 7 percent, respectively) and also that the sick child needs more liquid than usual (15 percent vs. 6 percent, respectively), though these two differences were not statistically significant. In *Suaahara* areas the gap between DAG and non-DAG is not as wide as it is for comparison areas.

Child nutrition practices

The next table (table, 35 below) focuses on the child nutrition practices in order to determine whether the increased exposure and knowledge to key messages is translating into improved practices. In *Suaahara* areas more than 80 percent of women reported that their child received vitamin A within six weeks of delivery, but only 65 percent of women in comparison areas reported this. Similarly, more women in *Suaahara* areas reported to have given their child colostrum (94 versus 75 percent), both of these differences were statistically significant (P<0.01). More women in *Suaahara* areas, than non-*Suaahara* areas, reported to have given their sick child more food (24 versus 14 percent) and more liquid (40 versus 18 percent), though only the latter was statistically significant (P<0.05).

In *Suaahara* areas, for some of the practices, gaps do remain between DAG and non-DAG households. For some child nutrition practices, the DAG and non-DAG gap closed in *Suaahara* areas: 94 percent of DAG and 94 percent of non-DAG reported to give colostrum in *Suaahara* areas, but in comparison areas it was only 71 percent of DAG and 79 percent of non-DAG.

Table 35: Child Nutrition Practices among Pregnant women and Mothers

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Vitamin A received within 6 weeks post-delivery* (among mothers)	61.6%	68.4%	78.3%	89.2%	65.0%	**83.7%****	73.6%
Vitamin A to child in last distribution* (among mothers)	57.6%	67.4%	69.9%	72.3%	62.4%	71.1%	66.4%
Colostrum given* (among mothers)	70.7%	78.6%	94.0%	94.0%	74.6%	**94.0%****	83.5%
Did not give prelacteals* (among mothers)	90.9%	92.9%	92.8%	91.6%	91.9%	92.2%	92.0%
Age in months of introduction of complementary foods)* (among those who have been introduced already)							
Water/other liquids	4.6 (1.6)	5.1 (1.7)	5.7 (1.0)	5.5 (1.5)	4.8 (1.7)	5.6 (1.2)	5.1 (1.6)
Milk/milk products (other than breast milk)	4.9 (2.4)	5.5 (1.8)	5.7 (1.4)	5.1 (1.9)	5.2 (2.1)	5.4 (1.7)	5.3 (1.9)
Semi-solid foods	5.4 (1.3)	5.8 (1.3)	6.1 (0.9)	6.0 (0.5)	5.6 (1.3)	6.1 (0.7)	5.8 (1.1)
Solid foods	6.4 (1.7)	6.4 (1.5)	6.9 (1.9)	6.9 (2.0)	6.4 (1.6)	6.9 (1.9)	6.6 (1.8)
Eggs	7.4 (2.1)	8.7 (3.7)	7.4 (2.9)	7.2 (2.4)	8.1 (4.5)	7.3 (2.7)	7.7 (3.7)
Animal meats	8.2 (2.6)	8.4 (3.4)	8.9 (5.3)	7.9 (2.8)	8.3 (3.0)	8.4 (4.4)	8.4 (3.7)
Child feeding during illness* (among mothers) (N= 197-C, 166-I, 363-A)							

More food given during diarrhea	9.1%	19.4%	22.9%	25.3%	14.2%	24.1%	18.7%
More liquid given during diarrhea	15.2%	20.4%	41.0%	38.6%	17.8%	**39.8%***	27.8%
+ Note: These percentages may not add to 100% as this was a multiple response question							
*** P<0.01*							

The below table (table 36) shows information on Infant and Young Child Feeding (IYCF) as recommended by the WHO, though small sample sizes did not allow for the calculation of indicators for which the denominator is a subset of the sample. Exclusive breastfeeding and minimum dietary diversity are more prevalent in *Suaahara* areas than non-*Suaahara* areas. Seventy-seven percent of infants younger than 6 months in *Suaahara* areas were exclusively breastfed, compared with 51 percent in comparison areas ($p<0.05$). Similar differences were observed in the percentage of infants and young children who consumed a minimally diverse diet (78 percent intervention vs. 52 percent comparison; $p<0.01$). Continued breastfeeding at one year in universal in both areas, though these results are based on small sample sizes (data not shown). Most other IYCF practices were similar in both areas. There remains much room for improvement in the consumption of iron-rich foods. Overall only about 28 percent of children 6-23 months of age consumed iron rich foods, and this did not differ by area. To meet the anemia reduction objective in this age group, more effort should be placed on increasing consumption of iron rich foods such as flesh foods, organ meats, etc.

For some indicators, such as exclusive breastfeeding and consumption of iron rich foods and age appropriate breastfeeding, more DAG women than non-DAG women in *Suaahara* areas reported this practice, whereas this was not true in the comparison areas.

Table 36: Practices Regarding Infant and Young Child Feeding

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Relative exclusive breastfeeding (0-5.9m)* (N=53-C, 43-I, 96-A)	98.7%	98.6%	100.0%	98.5%	98.7%	99.2%	98.9%
Continued breastfeeding at	44.8%	58.3%	94.7%	62.5%	50.9%	**76.7%***	62.5%

one year (12-14.9m)* (N=17-C, 20-I, 37-A)^							
Minimum dietary diversity (at least 4 food groups) (6-23.9m)* (N=95-C, 86-I, 181-A)	43.5%	59.2%	75.0%	81.0%	51.6%	**77.9%****	64.1%
Consumption of iron-rich foods (6-23.9m)* (N=95-C, 86-I, 181-A)	26.1%	30.6%	29.6%	23.8%	28.4%	26.7%	27.6%

Note: Other standard WHO IYCF core and optional indicators could not be calculated due to accidental omissions of questions from the questionnaire, which are necessary for variable construction.

^ *This indicator was calculated slightly different from the standard, WHO recommendation. Rather than asking about what the infant ate in the previous 24 hours, mothers were asked at what age they introduced certain foods. Mothers who stated that they had not yet introduced any water, milk, other liquids, formula, porridge or any soft or semi-solid foods were considered to be exclusively breastfeeding. While it is an alternative calculation of EBF, it is consistent with the definition of exclusive breastfeeding. Furthermore, because it was calculated in the same way in all areas, comparisons made within this sample are valid*

** P<0.05; ** P<0.01*

Table 37 includes information relating to complementary feeding diets among children 6-23 months of age. Nearly all children in both comparison and intervention areas consumed grains and pulses and the prevalence for consumption of flesh foods and other fruits and vegetables was similar in the two study areas. The difference in the percentage of children who consumed a minimally diverse diet (presented earlier) seems to be a result of increased consumption of animal source foods in *Suaahara* areas. Many more children in *Suaahara* areas consumed diary (76 versus 46 percent) and eggs (24 versus 6 percent), foods specifically promoted by the program. These differences were statistically significant ($p<0.001$ and $p<0.05$, respectively).

Even among DAG households in *Suaahara* areas, consumption of these animal source foods was relatively high and not unlike their non-DAG counterparts. For dairy consumption in *Suaahara* areas the DAG versus non-DAG gap is 73 versus 79 percent, but in comparison areas it is 37 versus 55 percent. Similarly for eggs, it is 23 versus 26 percent in *Suaahara* areas, but in comparison areas it is 2 versus 10 percent.

Table 37: Dietary Diversity among children 6-23.9 Months

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Consumption of specific food groups among children (6-23.9 months of age)							
Grains (cereals and tubers)	91.3%	98.0%	97.7%	90.5%	94.7%	94.2%	94.5%
Pulses (legumes and nuts)	82.6%	87.8%	86.4%	85.7%	85.3%	86.1%	85.6%
Dairy	37.0%	55.1%	72.7%	78.6%	46.3%	**75.6%*** **	60.2%
Flesh foods	26.1%	22.5%	22.7%	21.4%	24.2%	22.1%	23.2%
Eggs	2.2%	10.2%	22.7%	26.2%	6.3%	**24.4%***	14.9%
Vitamin A rich fruits and vegetables	45.7%	67.4%	81.8%	76.2%	56.8%	79.1%	67.4%
Other fruits and vegetables	39.1%	32.7%	29.6%	57.1%	35.8%	43.0%	39.2%

** P<0.05; ** P<0.01; *** P<0.001*

Maternal nutrition

Suaahara's maternal, infant and young child nutrition (MIYCN) package includes the USAID-developed Essential Nutrition Actions (ENA) and has recently has been updated to be more in line with the National IYCF package, which includes content related to emergency nutrition and growth monitoring. Training on the MIYCN package strengthens the capacity of government workers, health workers, and front line workers in nutrition. Mothers and pregnant women are exposed to *Suaahara*, the essential nutrition actions (ENA) and maternal nutrition and care during the 1000 Days. The main strategies for promoting key MIYCN behaviors include: IPC, media (*Bhanchhin Aama*, Hoarding boards), health mothers groups and other community activities.

Table 38: Maternal nutrition knowledge and practices during most recent pregnancy

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Features of maternal malnutrition+							
She is short/small for age	4.1%	5.1%	14.8%	7.7%	4.6%	11.2%	7.8%
She is thin for height	20.5%	37.3%	33.0%	44.4%	28.8%	38.8%	33.7%
She loses appetite	19.7%	29.7%	55.7%	60.7%	24.6%	58.2%	41.1%
She gets ill often	34.4%	48.3%	50.4%	57.3%	41.3%	53.9%	47.5%
She has little to no energy	28.7%	33.1%	28.7%	33.3%	30.8%	31.0%	30.9%
She has very thin arms	9.0%	11.9%	12.2%	12.0%	10.4%	12.1%	11.2%
Other	3.3%	0.0%	2.6%	6.8%	1.7%	4.7%	3.2%
Don't know	47.5%	30.5%	20.0%	11.1%	39.2%	15.5%	27.5%
Pregnancy/ Post-partum care							
4 ANC check-ups needed for pregnant woman	60.7%	76.3%	80.9%	82.9%	68.3%	81.9%	75.0%
180 days of iron/folic acid tablets need for pregnant woman	58.2%	70.3%	81.7%	95.7%	64.2%	**88.8%***	76.3%
45 iron/folic acid tablets needed for post-partum woman	41.0%	59.3%	76.5%	94.0%	50.0%	**85.3%*****	67.4%
Number of TT injections pregnant woman should have* (among those who didn't	2.2 (0.6)	2.1 (0.5)	1.8 (0.6)	1.9 (0.5)	2.1 (0.6)	1.8 (0.6)	2.0 (0.6)

report "don't know")							
Eating during pregnancy							
Less than usual	3.3%	0.9%	0.9%	1.7%	2.1%	1.3%	1.7%
Same as usual	19.7%	17.0%	4.4%	0.9%	18.3%	2.6%	10.6%
More than usual	77.1%	81.4%	94.8%	97.4%	79.2%	**96.1%*** **	87.5%
Don't know	0.0%	0.9%	0.0%	0.0%	0.4%	0.0%	0.2%

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*
+ Note: These percentages may not add to 100% as this was a multiple response question
** P<0.05; *** P<0.001*

Mothers and pregnant women were asked about their maternal nutrition knowledge and their own practices. Table 38 presents findings relating to knowledge about maternal nutrition. More than 80 percent of women in *Suaahara* areas had correct knowledge about the number of recommended ANC visits (4), as well as the appropriate number of iron/folic acid tablets that should be consumed during pregnancy and the post-partum period. In comparison areas 68, 64 and 50 percent of women had correct knowledge of these three maternal health and nutrition topics. The latter two comparisons were statistically significant (P<0.05, P<0.001). Women in *Suaahara* areas were also more likely than those in comparison areas to know that a pregnant woman should eat more than usual (96 vs. 79 percent; p<0.001); knowledge of this particular practice was high among all groups of women interviewed in *Suaahara* areas. Knowledge among DAG women tended to lag behind those of non-DAG for most of the maternal nutrition knowledge items measured, more so in comparison areas.

Table 39: Maternal nutrition and care knowledge

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Pregnancy/Post-partum care							
4 ANC check-ups* (among mothers who reported)	41.8%	47.3%	38.7%	42.7%	44.6%	40.7%	42.7%
Iron/Folic acid tablets for 180 days	35.0%	48.5%	54.4%	65.7%	41.8%	60.0%	50.9%

(pregnancy)* (among mothers who reported							
Number of TT injections* (among mothers who reported)	1.6 (0.8)	1.7 (0.7)	1.4 (0.7)	1.5 (0.7)	1.6 (0.8)	1.4 (0.7)	1.5 (0.7)
Deworming tablets: yes/no	74.6%	82.2%	85.2%	82.9%	78.3%	84.1%	81.1%
Eating during pregnancy							
Less than usual	12.3%	8.5%	3.5%	6.0%	10.4%	4.7%	7.6%
Same as usual	62.3%	48.3%	19.1%	19.7%	55.4%	19.4%	37.7%
More than usual	23.0%	41.5%	77.4%	74.4%	32.1%	**75.9%****	53.6%
Don't know	2.5%	1.7%	0.0%	0.0%	2.1%	0.0%	1.1%
Number of days fasted during pregnancy* (among mothers who reported)	0.3 (0.8)	4.2 (25.1)	1.8 (6.0)	1.8 (5.0)	2.3 (17.7)	1.8 (5.5)	2.0 (13.2)

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

*** P<0.01*

Table 39 examines the results relating to maternal nutrition practices. For all four pregnancy/post-partum care variables, there were no statistically significant differences in practices between women in *Suaahara* areas and women in comparison areas. However, 76 percent of women in *Suaahara* areas reported to have eaten more than usual during pregnancy whereas only 32 percent of women reported this in comparison areas; this difference was statistically significant (P<0.01).

Women's dietary diversity (Table 40) was assessed based on their consumption on the day prior to the survey. For the most part, the diets of women do not differ by area, with the exception of dairy consumption, which is about 20 percentage points higher among women in *Suaahara* areas than comparison areas (69 percent vs. 39 percent, p<0.01). Almost all women in both intervention and comparison areas consumed starchy staples and beans, lentils, and nuts. The prevalence of consumption of dairy was much higher (69 versus 39 percent) in *Suaahara* areas; this difference was statistically significant (P<0.01). Consumption of eggs, dark green leafy vegetables, and other fruits and vegetables was also higher in *Suaahara* areas than comparison areas, but consumption of meat and vitamin A rich fruits and vegetables was

actually higher in comparison areas than *Suaahara* areas. None of these other differences were statistically significant.

Table 40: Women's dietary diversity

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Consumption of specific food groups							
Starchy staples	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Beans, lentils, and nuts	86.1%	90.7%	84.4%	93.2%	88.3%	88.8%	88.6%
Dairy	27.1%	51.7%	61.7%	75.2%	39.2%	**68.5%****	53.6%
Meat	37.7%	39.0%	27.8%	27.4%	38.3%	27.6%	33.1%
Eggs	9.0%	12.7%	18.3%	16.2%	10.8%	17.2%	14.0%
Dark green leafy vegetables	62.3%	63.6%	77.4%	72.7%	62.9%	75.0%	68.9%
Vitamin A rich fruits and vegetables	23.0%	28.8%	15.7%	16.2%	25.8%	16.0%	21.0%
Other fruits and vegetables	57.4%	74.6%	77.4%	82.1%	65.8%	79.7%	72.7%

*** P<0.01*

Maternal Health and Family Planning

Under *Suaahara*'s IR to increase use of quality health and nutrition services by women, *Suaahara* implements a number of strategies to improve service quality and access. Priority areas for quality improvement include maternal and child health, particularly treatment of childhood illness through CB-IMCI and promotion of HTSP. Through health worker training, development of job aids and counselling materials, coordination with government and stakeholders to ensure adequate supplies at health posts *Suaahara* is supporting the overall improvement and capacity of health facilities in *Suaahara* districts to provide services, and ensure that DAG and non-DAG communities equally.

The table below provides detail on the use of ANC services by women in their most recent pregnancy. In *Suaahara* areas, more than 95 percent of women received ANC (p<0.05). None of the other ANC coverage variables (skilled provider, months pregnant for first ANC received, and total number of times any health worker consulted for ANC) were different between intervention and comparison areas. FCHVs were the primary source of ANC services or counseling for 70 percent of women in intervention areas and about 53 percent of women in non-*Suaahara* areas. The content of these counseling sessions appeared to differ in *Suaahara* areas with more than 90 percent of women in *Suaahara* areas hearing all 5 key messages relating to pregnancy and delivery, in comparison areas the most commonly heard message was regarding taking iron during the 2nd and 3rd trimester. Only 42.5 percent of women in comparison areas heard messages about IYCF compared to 83.3 percent of women intervention in intervention areas. The differences were statistically significant for 4 of the 5 messages (P<0.01). All three messages regarding breastfeeding and complementary feeding reached 80 to 90 percent of women in *Suaahara* areas; the differences were also highly statistically significant (P<0.001). The differences between DAG and non-DAG regarding ANC seemed to be about receiving the care but not about the quality or messages delivered if care is received.

Table 41: Antenatal care practices during most recent pregnancy

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/ %						
Any ANC	82.0%	90.7%	94.8%	95.7%	86.3%	**95.3%***	90.7%
ANC from a skilled provider*^ (among those who received	97.0%	95.3%	89.0%	98.2%	96.1%	93.7%	94.9%

any ANC)							
Months pregnant for first ANC received * (among those who reported any ANC and knew when)	3.5 (1.4)	3.4 (1.2)	3.7 (1.2)	3.5 (1.0)	3.4 (1.3)	3.6 (1.1)	3.5 (1.2)
Total number of times any health worker consulted for ANC* (among those who reported any ANC and knew when)	3.4 (1.3)	3.8 (1.4)	3.5 (1.5)	3.6 (1.4)	3.7 (1.4)	3.5 (1.5)	3.6 (1.4)
Source of ANC services or counselling+							
FCHV	46.7%	59.3%	76.5%	63.3%	52.9%	69.8%	61.2%
Specific topics counselled on during ANC* (among those who reported any ANC) (READ ALOUD)							
Sufficient rest during pregnancy	74.0%	80.4%	99.1%	97.3%	77.3%	**98.2%*** **	88.1%
Healthy eating during pregnancy	80.0%	84.1%	99.1%	96.4%	82.1%	**97.7%** **	90.2%
One extra meal per day during pregnancy	63.0%	67.3%	94.5%	92.9%	65.2%	**93.7%** **	79.9%
Iron after 1st trimester of pregnancy	86.0%	86.9%	97.3%	91.1%	86.5%	94.1%	90.4%
Institutional delivery	71.0%	77.6%	93.6%	93.8%	74.4%	**93.7%*** **	84.4%

Breastfeeding within 1 hour of birth	53.0%	60.8%	83.5%	87.5%	57.0%	**85.5%*** **	71.7%
Exclusively breastfeeding infants until 6 months of age	48.0%	60.8%	90.8%	90.2%	54.6%	**90.5%*** **	73.1%
Infant and young child complementary feeding	36.0%	48.6%	82.6%	83.9%	42.5%	**83.3%*** **	63.6%
** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.* ** P<0.05; ** P<0.01; *** P<0.001*							

While delivery assistance is nearly universal, institutional delivery was higher in *Suaahara* areas than non-*Suaahara* areas (68 versus 56 percent; p<0.05). Only about one-third of women in *Suaahara* communities received the first PNC check-up for themselves or for the baby within 1 day and the percentages for non-*Suaahara* areas were even lower. The content of PNC in *Suaahara* districts, as reported by the women, was more likely to include counselling on: early initiation of breastfeeding (86 versus 57 percent; p<0.001); and exclusive breastfeeding (91 versus 55 percent; p<0.001). Of those who received PNC, mothers in *Suaahara* districts were more likely to report having received assistance with positioning (66 versus 29 percent) and attachment (60 vs. 22 percent; p<0.001).

Gaps remained in some of the key delivery and PNC indicators between DAG and non-DAGs in both intervention and comparison areas. This was also true for the key topics being covered during the first hour after birth. However, DAGs in *Suaahara* areas were reached with all key messages more often than and were more likely to have an institutional delivery and skilled assistance at birth than their counterparts in comparison areas.

Table 42: Delivery and post-natal care among women who have given birth

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean %						
Any delivery assistance during birth*	93.9%	97.9%	100.0%	100.0%	95.4%	**100%*** **	97.5%

Any institutional delivery (hospital, centre or post)	41.4%	55.7%	62.2%	74.4%	48.2%	**68.3%***	57.3%
Skilled delivery assistance*^	45.5%	57.7%	61.0%	73.2%	51.5%	67.1%	58.6%
First PNC checks within 1 day*							
For self	20.2%	27.8%	36.6%	28.1%	24.0%	32.3%	27.8%
For baby	18.2%	21.7%	40.2%	28.1%	19.9%	34.2%	26.4%
Specific topics covered during first hour after birth* (among those who gave birth) (READ ALOUD)							
Counselling on breastfeeding	59.6%	61.9%	73.2%	89.0%	60.4%	**81.1%***	69.8%
Demonstration of proper breastfeeding	28.3%	35.1%	46.3%	62.2%	31.5%	**54.3%**	41.8%
Demonstration of proper breastfeeding positioning	22.2%	27.6%	45.1%	58.5%	24.9%	**51.8%****	37.1%
Assistance with breastfeeding positioning	28.3%	30.6%	53.7%	78.1%	29.4%	**65.9%***	46.0%
Demonstration of breastfeeding attachment	14.1%	13.3%	36.6%	51.2%	13.7%	**43.9%****	27.4%
Assistance with breastfeeding attachment	21.2%	23.5%	47.6%	73.2%	22.3%	**60.4%***	39.6%
** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*							

+ Note: These percentages may not add to 100% as this was a multiple response question

^ Skilled provider defined as doctor, staff nurse, ANM

** P<0.05; ** P<0.01; *** P<0.001*

Table 43 covers family planning-related counseling. In *Suaahara* areas many more women reported to have been counseled by a health professional on healthy timing and spacing of pregnancies (HTSP) than in non-*Suaahara* areas (88 versus 55 percent). This difference was highly statistically significant (P<0.001). Similarly, women in *Suaahara* areas received HSTP related advice/counseling from an average of 2.4 sources in comparison to 1.2 sources for women in non-*Suaahara* areas and this was also a significant difference (P<0.05). Many more women in *Suaahara* areas also reported to have heard each of the three key HSTP related messages than women in non-*Suaahara* areas: 1) waiting 2 years between each pregnancy (86 versus 56 percent; P<0.001); 2) using family planning method of woman's choice for 2 years between pregnancies (82 versus 57 percent; P<0.01); and 3) waiting until 20 years of age before trying to become pregnant (86 versus 56 percent; P<0.001). About 1 in 3 women in *Suaahara* areas reported to have heard these messages from a *Suaahara* field supervisor, the vast majority of women reported to have heard these messages from FCHVs (data not shown).

Table 43: Counseling on Health Spacing and Timing of Pregnancy

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean (SD)/%						
Ever counselled by health related professional on HSTP	50.0%	59.3%	92.2%	82.9%	54.6%	**87.5%*****	70.8%
Total number of sources for advice/counselling on HSTP	1.0 (1.2)	1.4 (1.4)	2.4 (1.2)	2.4 (1.5)	1.2 (1.3)	**2.4 (1.4)***	1.8 (1.5)
Specific messages received in last time counselled on HTSP							
Waiting 2 years between each pregnancy	43.4%	55.9%	89.6%	82.9%	49.6%	**86.2%*****	67.6%
Using family planning method of woman's choice for 2 years between	43.4%	56.8%	87.0%	77.8%	50.0%	**82.3%****	65.9%

pregnancies							
Waiting until 20 years of age before trying to become pregnant	19.7%	24.6%	69.6%	74.4%	22.1%	72.0%***	46.6%

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

+ Note: These percentages may not add to 100% as this was a multiple response question

** P<0.05; ** P<0.01; *** P<0.001*

Not only did DAGs in *Suaahara* areas report to have received more counselling on HSTP than DAGs in non-*Suaahara* areas, but the gap between DAGs and non-DAGs in *Suaahara* areas was smaller than in non-*Suaahara* areas. In the comparison areas 50 percent of DAGs versus 59 percent of non-DAGs ever received HSTP counselling, but in intervention areas it was 92 versus 83 percent with more DAG women having received counselling than non-DAGs. For all three of the specific messages, more DAGs than non-DAGs in the *Suaahara* area had received them, this is likely linked with the emphasis on FP and HTSP among DAG populations.

The PEAP survey also asked women about their knowledge and practices related to family planning. In *Suaahara* areas more women reported awareness of reversible methods (98 versus 91 percent), whereas in non-*Suaahara* areas, more women reported awareness of permanent methods (38 versus 29 percent). Though knowledge of family planning methods is high, fewer than 1 in 4 non-pregnant women practiced any method to delay or avoid pregnancy. Increasing use of family planning may warrant a better understanding of the current barriers to use and how to remove them.

WASH

The WASH component of *Suaahara* focuses on the Sanitation and hygiene behaviors targeting open defecation and hand washing at critical points as priority behaviors. *Suaahara* incorporated the USAID-developed Essential Hygiene Actions (EHA) into the core package. *Suaahara* also follows guidelines of the National Hygiene and Sanitation Master Plan to promote Open Defecation Free (ODF) VDCs through the Community-Led Total Sanitation (CLTS) approach. This involves building simple latrines and linking communities or households with available resources towards an improved state of sanitation. Coordinating with the GON and other WASH projects, *Suaahara* has led 137 VDCs in the ODF campaign, 75 of which have already been declared ODF.

Women were interviewed about their knowledge and practices regarding hand washing and treatment of water. Knowledge of both seemed to be higher in *Suaahara* areas than non-*Suaahara* areas. Twenty-two percent women in *Suaahara* areas tended to recall all five critical times a caretaker should wash her hands (versus 8 percent in comparison areas; difference not significant). Almost all women were able to name an appropriate method for treating water at the household level (97 percent in intervention and 91 percent in comparison areas). The most frequently cited critical times for hand washing were: after defecation and after cleaning the

child's bottom, reported by over 80 percent of women in *Suaahara* areas. Fewer women mentioned before food preparation, before eating or before feeding a child as critical times for hand washing, times which are critical for reducing the risk of illness in children. In *Suaahara* areas, the hand washing knowledge is almost the same among DAGs and non-DAG women whereas in comparison areas there remains a gap.

Table 44: Knowledge of WASH practices

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean %						
All five critical times caretaker should wash hands	5.7%	11.0%	21.7%	22.2%	8.3%	22.0%	15.0%
Specific times caretaker should wash hands+							
After defecation	75.4%	75.4%	82.6%	84.6%	75.4%	83.6%	79.5%
After cleaning the child's bottom	81.2%	78.0%	87.8%	82.1%	79.6%	84.9%	82.2%
Before preparing food/cooking	27.9%	40.7%	62.6%	65.0%	34.2%	63.8%	48.7%
Before eating	48.4%	55.1%	63.5%	62.4%	51.6%	62.9%	57.2%
Before feeding the child	55.7%	67.0%	66.1%	65.8%	62.0%	66.0%	63.6%
Water treatment: boiling, adding bleach/chlorine, filtering, or SODIS	85.3%	96.6%	94.8%	100.0%	90.8%	97.4%*	94.1%

** P<0.05*

To assess WASH practices, rather than ask questions, data collectors hand washing stations and noted the availability of soap and water. They also observed the type and condition of latrines and toilets and were trained to assess their degree of cleanliness. More women in *Suaahara* areas were observed to have water, soap, and soap/ash available. The finding related to soap – that 80 percent of women in *Suaahara* areas versus only 47 percent in non-*Suaahara* areas had soap - was statistically significant (P<0.01). Similarly, more women had a hand washing station with full supplies (water plus soap/ash): 87 percent versus 50 percent in non-*Suaahara* areas; the finding was statistically significant (P<0.05). Another household level observation revealed that 68 percent of women in *Suaahara* areas versus 19 percent of women in non-*Suaahara* areas had clean toilets in their household; this was highly statistically significant (P<0.001).

For all supply related observations, DAGs lagged behind non-DAGs in *Suaahara* areas, but the largest lag was regarding toilet cleanliness (56 percent among DAGs and 80 percent among non-DAGs). In comparison areas, similar gaps between DAG and non-DAG households were observed.

Table 45: Observations on WASH practices

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean %						
Hand washing supplies (OBSERVATION)* (among those with observable hand washing station)							
Water	59.8%	76.1%	90.4%	93.2%	67.8%	91.8%	79.6%
Soap	36.9%	57.3%	75.7%	84.6%	46.9%	**80.2%****	63.3%
Soap and/or ash	57.4%	70.1%	86.1%	92.3%	63.6%	89.2%	76.2%
Hand washing station with water and soap/ash available (OBSERVATION)	38.5%	61.0%	84.4%	88.9%	49.6%	**86.6%***	67.8%
Soap shown on request (OBSERVATION)	82.8%	89.8%	97.4%	99.2%	86.3%	98.3%*	92.2%
Toilet at household (OBSERVATION)	75.4%	88.1%	87.8%	94.9%	81.7%	91.4%	86.4%
Toilet facility: Flush (OBSERVATION) * (among those	63.0%	74.0%	86.1%	90.1%	68.9%	88.2%	78.9%

who have a toilet)							
Toilet cleanliness (OBSERVATION)* (among those who have a toilet)							
Dirty	32.6%	14.4%	5.0%	0.9%	23.0%	2.8%	12.5%
Not very clean	56.5%	58.7%	39.6%	18.9%	57.7%	28.8%	42.7%
Clean	10.9%	26.9%	55.5%	80.2%	19.4%	**68.4%*** **	44.9%
** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*							
** P<0.05; ** P<0.01; *** P<0.001*							

Women were asked about their practices relating to water treatment, food protection and steps used to keep the household cleans. The only major difference was that 80 percent of women in *Suaahara* areas covered the drinking water pot, whereas this was only the case for 49 percent in non-*Suaahara* areas. This difference was statistically significant (P<0.01). A spot-check observation also showed that 62 percent of *Suaahara* households did not have any animal or human feces in the house/near the compound, whereas this was only true for 47 percent of the non-*Suaahara* households. Though knowledge of water treatment methods is high, few women reported actually treating water in the household. This is another area where *Suaahara* could benefit from understanding the barriers to household water treatment practices and how to reduce them.

The gap between DAG and non-DAG households was a lot smaller in *Suaahara* areas than non-*Suaahara* areas. For instance, the gap for not having animal or human feces in the house/near the compound was 0.2 percent in *Suaahara* areas versus more than 15 percent in non-*Suaahara* areas. Similarly there was only a 5 percentage point difference between DAG and non-DAG households related to water treatment in *Suaahara* areas but there was nearly a 15 percentage point difference in the non-*Suaahara* areas. (Data not shown)

Gender and Social Inclusion (GESI)

Suaahara focuses both on scale and reaching disadvantage groups, understanding that Nepal's geographic, ethnic, religious and caste diversity pose barriers to achieving equitable health and nutrition outcomes. The Government of Nepal has prioritized incorporating GESI into the country's health policies, programs and plans, and *Suaahara*'s GESI strategy supports this process. VDCs identified as having significant DAG populations are identified to receive Core ++ packages of interventions designed to focus on improving equity for DAGs, addressing social inclusion and gender determinants of health and nutrition. On average DAGs account for 25 percent of the 1000 Days households in all *Suaahara* districts. Throughout this report, equity between DAG and non-DAG women in terms of their access to services, knowledge and practices has been explored. In this section, two additional GESI issues are explored—gender norms and the participation of DAGs in community groups.

As a glimpse into gender norms, the survey asked women about their ability to make decisions (either on their own, or jointly with their husbands). There was little difference between *Suaahara* and comparison areas in the proportion of women who reported that they had sole or joint decision-making power, which was high for most items in both areas. Of interest is that on many items, DAG women were more empowered to make decisions than their non-DAG counterparts. This was true in both areas.

Table 46: Household decision making power

	Comparison		Intervention		Full Sample		
					Comparison	Intervention	All
	DAG (N=122)	Non-DAG (N=118)	DAG (N=115)	Non-DAG (N=117)	(N=240)	(N=232)	(N=472)
	Mean %						
Decision-making control (sole or joint) (READ ALOUD)							
Shopping for food	35.3%	28.8%	24.4%	19.7%	32.1%	22.0%	27.1%
Animal source food consumption	34.4%	29.7%	24.4%	18.0%	32.1%	21.1%	26.7%
Feeding children	90.1%	88.0%	91.7%	84.2%	89.1%	88.0%	88.6%
Children's health care	92.1%	96.0%	95.2%	96.3%	94.0%	95.8%	94.8%
Buying hygiene items (soap)	53.3%	57.6%	58.3%	47.9%	55.4%	53.0%	54.2%
Food for self-consumption	88.5%	85.6%	83.5%	66.7%	87.1%	75.0%	81.1%
Your own health	91.0%	89.8%	91.3%	89.7%	90.4%	90.5%	90.5%
Use of family planning	87.7%	91.5%	99.1%	96.6%	89.6%	97.8%	93.6%
Participating in meetings, groups	54.9%	53.4%	84.4%	73.5%	54.2%	78.9%	66.3%
Agricultural production	50.8%	43.2%	47.0%	28.2%	47.1%	37.5%	42.4%
Livestock raising	51.6%	44.1%	43.5%	27.4%	47.9%	35.3%	41.7%
Your own wage or salary employment	82.8%	83.9%	93.9%	92.3%	83.3%	93.1%	88.1%

Major household expenses	41.0%	39.8%	25.2%	13.7%	40.4%	19.4%	30.1%
Your own health and nutrition	91.8%	89.8%	91.3%	89.7%	90.8%	90.5%	90.7%
Going to your mother or friend's house	63.9%	61.9%	70.4%	65.0%	62.9%	67.7%	65.3%
+ Note: These percentages may not add to 100% as this was a multiple response question							

Household Food Production

The HFP component of element of *Suaahara* includes the following main interventions to support 1,000 days households to produce nutritious food, especially vegetables and eggs (chicken) on the small plots of land available around their households:

1. Training on simple and doable techniques that help women to produce high yield vegetables and backyard poultry;
2. Provision of inputs, such as seeds and chicks, as the start up support to mothers
3. Training (social mobilization and entrepreneurship development skills) and demonstration input support for progressive leaders of community to establish village model farm as resource and service center relevant to household HFP promoted by *Suaahara*; and
4. Coaching and supervision support to homestead food production beneficiaries to adopt improved practices through Home visits, group meeting, and group registration.

These interventions are not available in all VDC, only those in districts that are more vulnerable to food insecurity or where a high proportion of households are classified as DAG. In this section, data are disaggregated by whether the woman lived in a VDC where these interventions were supposed to have been implemented.

Knowledge

Almost all women surveyed in Agricultural VDCs (n=82) were able to mention the benefits of small animal production, though they favored benefits related to the household and income over the benefits to the child's and/or mother's nutritional status (Table 47). Almost all women knew small animals were an additional source of household food, and a source of income, though less than a third reported that one advantage of raising small animals was to improve the diets of women and children. This was mentioned as a benefit by only 32 percent of women. Similarly, women were more likely to mention household and income related benefits of homestead food production, rather than benefits to the diets of women and children.

Table 47: Knowledge of HFP benefits among Agricultural VDCs in Intervention Areas

Knowledge: Homestead Food Production (HFP) - Poultry Production	Ag VDC (N=82) Mean %
Advantages of producing small animals+	

Improve household food	98.8%
Source of income	95.1%
Improve diets of children or women	31.7%
Other	0.0%
Benefits of homestead garden+	
Improve household food	100.0%
Source of income	46.3%
Improve diets of children or women	26.8%
Other	0.0%

HFP Practices

Several practices are promoted by *Suaahara* to improve child nutrition. These include raising improved breeds of chicken, growing a variety of crops, especially dark green leafy vegetables and vitamin A rich vegetables. Among women surveyed in Ag VDCs, almost 50 percent had chickens, about half of these 23 percent owned improved chickens. Most of the households visited had traditional HFPs (82 percent) and only 2 percent had the improved gardens promoted by *Suaahara*. The remainder did not have any homestead garden at all.

Table 48: Homestead Food Production practices in Agricultural intervention VDCs

Practices: HFP Garden	Intervention		
	Non-ag VDC (N=150)	Ag VDC (N=82)	Overall (N=232)
	Mean (SD)/%		
HFP garden at home			
None	7.3%	15.9%	10.3%
Improved	26.7%	2.4%	20.2%
Traditional	66.0%	81.7%	79.8%
Land devoted to HFP* (in hectares) (among those who have HFP at home) (N= 139-C, 69-I, 208-A)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Types of vegetables grown in HFP last year*+ (among those who have HFP at home) (N= 139-C, 69-I, 208-A)			
Dark green leafy vegetables	96.4%	100.0%	97.6%
Yellow/orange vegetables	54.7%	87.0%	65.4%
Others	77.0%	75.4%	76.4%
HFP production provides food* (among those who have HFP at home) (N= 139-C, 69-I, 208-A)			
Up to 3 months	15.1%	34.8%	21.6%
3-6 months	26.6%	37.7%	30.3%

6-12 months	28.1%	18.8%	25.0%
All year	30.2%	8.7%*	23.1%

* P<0.05

Practices: HFP Garden	Ag VDC (N=82) Mean (SD)/%
HFP garden at home	
None	15.9%
Improved	2.4%
Traditional	81.7%
Land devoted to HFP* (in hectares) (among those who have HFP at home)	0.0 (0.0)
Dark green leafy vegetables	100.0%
Yellow/orange vegetables	87.0%
Others	75.4%
HFP Provides Food	
Up to 3 months	34.8%
3-6 months	37.7%
6-12 months	18.8%
All year	**8.7%***

P<0.05

Table 49: Poultry Raising in Agricultural VDCs in Intervention Areas

Practices: HFP Poultry	Intervention Ag VDC (N=82) Mean (SD)/%
Ownership (OBSERVATION)	
Local chickens: yes/no (N=80-I)	21.3%
Broiler/hybrid chickens: yes/no (N= 82-I)	1.2%
Improved chickens: yes/no (N=79-I)	22.8%
Ownership: numbers (OBSERVATION) (among those with max 10)	

Local chickens (N= 80,)	1.0 (2.4)
Broiler/hybrid chickens (N=, 82)	0.0 (0.1)
Improved chickens (N=82)	1.4 (3.6)
Total chickens (N=77)	**1.9 (3.2)*** **

** Note: The sample size is lower for these results as the question was only asked to those who answered a prior question in a particular way.*

** P<0.05, ***P<0.001*

VIII. DISCUSSION

Exposure to *Suaahara* interventions is high in *Suaahara* areas and women report access to more sources of information, on average, than in comparison areas. In *Suaahara* areas, women are more knowledgeable about the practices that *Suaahara* promotes. This is true for maternal health and nutrition, healthy timing and spacing of pregnancies, IYCF, and WASH. This seems to be translated into improved behaviors in some areas. For example, *Suaahara* mothers are more likely to consume an extra meal during pregnancy, deliver in a health facility, more likely to exclusively breastfeed and give their young children more diverse diet. Women and children in *Suaahara* areas are consuming more eggs and dairy than their counterparts in comparison areas, all of which have a positive effect on the nutritional status of women and children. For the most part, the disparities in knowledge and practice between DAG and non-DAG women are smaller in *Suaahara* areas than in comparison.

However, some of the behaviors promoted by *Suaahara* could use additional attention, particularly related to reducing illness and its impact on children's nutritional status. For example, knowledge about hand washing before food preparation and child feeding is low. This along with low household water treatment may be contributing to illness among children. Since knowledge about how to feed sick children remains low, periods of illness could be very detrimental to their nutritional status. Increasing hand washing prior to food preparation and child feeding and increasing the proportion of sick children who are fed more during and after their illness could help *Suaahara* achieve greater impact on children's nutritional status.

For several areas, a large gap was observed between knowledge and practice. This is true for WASH as mentioned above, but also for family planning. This might be because knowledge is not the limiting factor in changing these behaviors. Perhaps other barriers, e.g. economic or social, interfere with women's ability or willingness to adopt the behaviors. Qualitative research to understand the factors affecting these decisions could be useful to help craft a BCC strategy that address them.

IX. CONCLUSIONS

Overall, *Suaahara* training does not seem to have resulted in higher knowledge among the FLWs, with the exception of the following: the number of recommended ANC visits, number of iron/folic acid tablets needed during pregnancy and post partum, the importance of the 1000 days and feeding more food during illness. What is evident is that *Suaahara* has done a great job of arming FLWs with skills and knowledge not related to their sector (non-health workers are trained in health and health workers trained in non-health sector issues).

Several key features distinguish the FLWs in *Suaahara* areas from those in comparison areas. 1) They have access to and are using the SBCC tools developed by *Suaahara*. 2) They are making more frequent contacts with 1,000 day mothers than their counterparts in comparison areas, not only during home visits and health mothers' groups, but at other opportunities as well. 3) The quality of antenatal care, post-natal care and family planning services are higher in *Suaahara* areas, based on mothers' reports of the content of their visits. In addition, during post natal care, *Suaahara* FLWs are providing hands-on support necessary for successful breastfeeding, such as helping mothers with positioning and attachment to a greater extent than FLW in comparison areas. 5) Finally, they are reaching DAG households with almost the same frequency as non-DAG households.

In addition to the interpersonal contact with FLWs, the mass media campaign is also reaching target audiences and reinforcing the *Suaahara* messages. Exposure to mass media, specifically the *Bhanchhin Aama* radio drama and hoarding boards is high, even among DAG households.

This combination of interventions seems to have resulted in higher knowledge among 1,000 days mothers for most of the *Suaahara* messages and the adoption of some of the practices promoted by *Suaahara*. In *Suaahara* areas, women are more likely to deliver in health facilities with a trained provider. They are more likely to consume a more nutritious diet during pregnancy—extra meals and and dairy. Children in *Suaahara* areas are more likely to have been given colostrum at birth, more likely to exclusively breastfeed and consume more diverse diets that include eggs and dairy. *Suaahara* area households are more likely to have hand washing stations that have soap and water. All of these are important improvements in behaviors that would be expected to result in improved nutritional status.

To increase the potential impact that Suaahara could have on nutritional status, the following recommendations could be implemented. Providing more training to FLWs on how to conduct interpersonal counseling. Increase awareness among FLWs and mothers of the impact of illness on nutrition and increase promotion of hand washing before feeding and feeding during illness and the recuperation period following illness. Conduct additional research to understand the barriers to adoption of home water treatment and family planning; despite high levels of knowledge in these two areas, there is little uptake of practices.