The European Union's Civil Society and Local Authorities Thematic Programme

Siaya Maternal and Child Nutrition Nawiri Project

CSO-LA/2015/368-296

END TERM EVALUATION REPORT

April 2019

WITH FUNDING FROM
AUSTRIAN DEVELOPMENT COOPERATION

care

FAMILY HEALTH OPTIONS KENYA

KMET

Nawiri Project End Term Evaluation Report

Prepared

By

Dr. Philemon Yugi and Dr. Gordon Nguka

Benaphil Consultants Ltd

P.O. BOX 9845-00200, Nairobi, Kenya
Email: info@benaphilconsultants.com
Website: www.benaplconsultants.com

ABBREVIATIONS AND ACRONYMS

ADA	Austrian Development Agency
ANC	Antenatal Clinic
ARI	Acute Respiratory Infection
BMI	Body Mass Index
CARE	Cooperation for Assistance and Relief Everywhere
CHIS	Community Health Information Systems
CHMT	County Health Management Team
CHV	Community Health Volunteers
CSOs	Civil Society Organization
CME	Continuous medical education
DHIS2	District Health Information Software
EC	European Community
ENA	Emergency Nutrition Assessment
FBOs	Faith Based Organizations
FGD	Focus Group Discussion
FHOK	Family Health Options Kenya
GAM	Global Acute Malnutrition
GS	Growth Standards
HW	Health Workers
IEC	Information, Education and Communication
IMAM	Integrated management of acute malnutrition
IMC	International Medical Corps
KEMRI	Kenya Medical research Institute
KII	Key Informant Interview
KMET	Kisumu Medical and Education Trust
MAM	Moderate Acute Malnutrition
MCA	Member of County Assembly
MIYCN	Maternal Infant and Young Child Nutrition
MMCG	Mother to Mother Care Groups
MTMSGs	Mother to Mother Support Groups
MUAC	Middle Upper Arm Circumference
NCHS	National Centre for Health Statistics
NGO	Non-Governmental Organizations
ODK	Open Data Kit
OPV	Oral Polio Vaccine
OJT	On Job Training
SAM	Severe Acute Malnutrition
SD	Standard Deviation
SOP	Standard Operating Procedures
SPSS	Statistical Package for Social Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
TBA	Traditional Birth Attendant
TWG	Technical Working group
UNICEF	United Nations International Children Emergency Fund
WASH	Water, Sanitation and Health

WFA	Weight For Age
WFH	Weight for Height
WHO	World Health Organization

ACKNOWLEDGEMENT

The evaluation team acknowledges the European Commission (EC), the Austrian Development Agency (ADA) and CARE for providing resources for the Nawiri Project and the End of Project Evaluation. We thank the project beneficiaries especially the mothers, male champions, CHVs and health workers for their participation in the evaluation. We also acknowledge the participation of the County and Sub-county Ministry of Health officials from Bondo, Gem and Rarieda Sub-counties in Siaya County. We also appreciate the participation and support received from Nawiri Consortium coordinated by CARE, Kenya. The CARE team led by Lilian Kong'ani, the Project Manager and Dorothy Owiyo the project Officer; KMET project Officer, Debra Otambo, FHOK project Assistant Andrew Ouma played a key role in coordination of the evaluation. We would also like to acknowledge the County and Sub-county nutrition team lead by Oscar Kambona, the County Nutrition Coordinator. Finally, we are very grateful to Lilian Kong'ani, Teresia Njoki and Claire Laurent of CARE Kenya and Austria respectively for their insightful observations and review of the evaluation report.

Benaphil Consultants Limited

Table of Contents

List of Tables and Figures

Tables

Figures

EXECUTIVE SUMMARY

Introduction

The Siaya Maternal and Child Nutrition *Nawiri* Project was a 36-months intervention on maternal and child nutrition. The project was executed in partnership with CARE (the coordinator), Family Health Options Kenya (FHOK) and the Kisumu Medical and Education Trust (KMET) in Siaya County with funding support from the European Commission (EC), the Austrian Development Agency (ADA) and CARE. The overall objective of the project was to contribute to improving maternal, infant and young child nutrition (MIYCN), including nutrition of women of reproductive age, in Siaya County.

Objectives of the End-term evaluation: The ***specific objectives*** of the end-term evaluation of the Nawiri Project were to: (1) assess against the project goal, objectives and expected results based on the indicators of the project log-frame; (2) assess the project objectives and proposed outcomes by measuring performance against each indicator under each result area and analyze key determinants that were positively or negatively critical for obtaining these results; (3) assess the efficiency of the process of achieving results. Under this objective, the evaluation would determine the contribution of the adopted gender equality Social Analysis and Action (SAA) Model and rights based approach project, community score card strategy for social accountability, advocacy strategies for political commitment, role of mother to mother support groups, male champion curriculum and training, role of MIYCN Trainer of Trainers (ToTs), impact of community outreaches, food demonstration sessions, public participation by CHVs during budget development process towards achieved results; (4) evaluate the efficiency of the organizational set-up for the project (partnership arrangement) and systems used in the delivery of the project and to what extent these contributed to or inhibited the delivery of the project outcomes; (5) assess how gender aspects have been considered and included in the implementation (with specific focus on gender mainstreaming, setting of gender equality goals), inter alia, how women had participated or were represented meaningfully in decision-making and feedback; (6) assess the level of sustainability (financial, institutional and social) of the individual project components, and identify critical areas that may affect sustainability; and (7) provide recommendations on future project design including how to ensure effectiveness of log frames.

Evaluation Design -This was a cross-sectional descriptive study design with a mix method of data collection using qualitative and quantitative methods and comparison undertaken with similar data from the project's mid-term and baseline survey. Triangulation of data from the mixed sources was undertaken to enhance the credibility and reliability of the findings. Conclusions and recommendations are made as drawn from the findings.

Evaluation Results: The evaluation results are presented by evaluation objectives.

Objective 1: Assess against the project goal, objectives and expected results based on the indicators of the project log-frame. The indicators of achievement have been summarized in the log-frame. The overall objectives were met evidenced by the improved nutrition indicators for maternal, infant and young children in Siaya County shown by the reduction in the prevalence of undernutrition among children below 5 years, stunting from 25.7% to 22.0%, underweight slightly increased from 12.6% to 13.0% and wasting

increased by 4.6% from 6% during the midterm evaluation. Whereas moderate underweight reduced from 11.3% to 7.5% while severe underweight increased from 1.3% to 5.5%. Based on MUAC, the nutritional status of women at reproductive age intensified from 16.7% to 86.5%. However, a large percentage of these groups were either lactating (62.25%) or pregnant (2.65%). Exclusive breastfeeding from 0-6 months was at 64.7%, iron and folic acid intake 92.5% and initiation of breastfeeding within the first one hour after birth was 88.5%. All these domains represent an improvement from the midterm evaluation. On matters of vitamin A intake from 6-59 months, coverage was still below national average at 46.2%. The focus on sanitation and hygiene practices demonstrated a larger percentage 73.7% of the residents of Siaya County use safe treated water for human consumption. The uptake of zinc pills or syrup as a remedy during diarrheal episodes reduced from 25.7% at midterm to 15.8% at end term while ingestion oral rehydration salts increased from 20.8% at midterm to 30.5% at end term assessment. Interview with CHVs following these results revealed that both ORS and zinc are included in the job aid given to the CHVs and that CHVs are given and replenished with sachets of ORS and zinc tablets during monthly meetings. However, out of the five interviewed from the three sub-counties none of them had distributed either zinc or ORS stating that diarrhea was rare. In fact one CHV from Wagai health Center stated that their area was declared Open Defecation Free (ODF). Further, the CHVs mentioned that both zinc and ORS were not available in shops in the community. This means that those who used either zinc or ORS which were promoted equally accessed them through CHVs or health facilities. The low use can then be attributed to inaccessibility by the households since findings show that 36% used nothing and the rest home remedies.

Finally, a considerable number of respondents 87.4% indicated that the practice of healthy nutrition is paramount to reduction of diseases. Further examination on attitudes towards MIYCN revealed that both genders strongly agreed that MIYCN is an important intervention to the community. Lastly, both genders variously agreed that Nawiri Project has facilitated adoption of health practices to the community. The logical frame work below shows that most of the indicators (process, outcome and impact) were achieved or were close to achievement. The framework compares the baseline, mid-term and end-term evaluation results.

Summary table of indicators

	Intervention logic	Objectively verifiable indicators of achievement	Baseline	MTE	ETE	Target (Overall Project Targets)
Overall objectives	O1 – To contribute to improving maternal, infant and young child nutrition, including nutrition of women of reproductive age in Siaya County, Kenya.	Indicator 1: Percentage reduction of micronutrient deficiencies (Vitamin A, Iron, Iodine and Zinc) among children under 5 years and women of reproductive age (15-49 years)	Vit A 63.55% (Uptake 36.45%) IFAS 44.5% Exclusive breastfeeding <6months: 62.5% (Uptake is at 37.5%) Zinc: 86.94%	Vit A 54.0% (Uptake is at 46.0%) IFAS 6.3% (Uptake is at 93.7%) Exclusive breastfeeding <6months: 42.2% (uptake is at 57.8%) Zinc: 88.1% (Uptake is at 11.9%)	Vit A 63.61% (Uptake is at 36.39%) IFAS 7.5% (Uptake is at 92.5%) Exclusive breastfeeding <6months: 35.3 % (Uptake is at 64.7%) Zinc: 85% (Uptake is at 15%)	Vit A 20% IFAS 20% Exclusive breastfeeding <6months: 60% Zinc: 100%
		Indicator 2: Percentage reduction in stunting, wasting and underweight among children under 5 years.	Under 5 years (MAM) Wasting- 11.9% Underweight- 10.4% Stunting- 12.7% 6-59months (MAM)	Under 5 years (MAM) Wasting: 10.0% Underweight: 5.3% Stunting: 8.9% 6-59months (MAM)	Under 5 years (MAM) Wasting: 3.8% Underweight: 5.5 % Stunting: 12.1% 6-59months (MAM)	Under 5 years (MAM) Wasting- 5.95% Underweight- 5.2% Stunting- 6.35% 6-59months (MAM)

			Wasting- 10.5% Underweight- 20.3% Stunting- 29.7%	Wasting: 5.0% Underweight: 6.8% Stunting: 9.0%	Wasting: 3.8% Underweight: 5.5% Stunting: 12.1%	Wasting- 7.35% Underweight- 14.2% Stunting- 20.79%
		Indicator 3: Percentage reduction in acute malnutrition (SAM and MAM) among women of reproductive age (15-49 years).	Wasting 1.7%	Wasting 1.7%	Wasting 0.88 %	Wasting 1%
Specific Objective	SO 1 – To increase the capacity and commitment of CSOs and state health actors to provide and facilitate access to coordinated, complementary quality maternal, infant and young child nutrition services in Siaya County.	Indicator 1: Number of Sub-counties with functional nutrition coordination in place, executing their mandates at all levels	0[1]	All the 3 supported sub counties have functional nutrition coordination in place, executing their mandate at all levels	All the 3 supported Sub-counties have functional nutrition coordination in place, executing their mandate at all levels	3
		Indicators 2: Number of nutrition implementing agencies in Siaya County integrating their nutrition priorities into county plans	4	4 nutrition implementing agencies in Siaya County integrating their nutrition priorities into county plans (Kenya Red Cross, Aphia Plus, MAP Int. and AMREF)	11 nutrition implementing agencies in Siaya County integrating their nutrition priorities into county plans (CARE'S Nawiri consortium, AMREF, PATH, MAP Kenya, Hellen Keller, Welt Huger Hilfe,World Vision, ONE ACRE Farm, Kisumu	10

[1] The baseline does not provide adequate data to measure this indicator. CARE therefore decided to start with a baseline of 0 and foresees that all 3 sub-counties will execute their mandate with regards to nutrition coordination by the end of the project.

					Development Program, CHS and PLAN)	
Expected results	ER1 – "Advocacy for political commitment" – Political commitment and good nutrition governance in the Siaya County are strengthened and vulnerable groups are integrated in decision-making processes.	Indicator 1: Number of county assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging.	0 County Assembly Members[2]	4 Executive leaders engaged (Governor, CEC Health, Chief Officer and Health Director) 0 MCAs (*MCAs could not be met at the period because of the political activity-The MTE happened at the heart of dispute over repeat election and Civil Disobedience*)	20 executive leaders (Governor, CEC-Health, Chief Officer –health and Health Director, Nutrition, Education, Water and Agriculture) and 54 MCAs have been engaged, 2 Members of the National Assembly. No Senator was engaged by the project	37 County Assembly Member 68 executive political leaders 7 Members of the National Assembly 1 Senator[3]
		Indicator 2: Proportion increase in county budgetary allocation for MIYCN services.	0.08%[4]	0.24% (for nutrition activities, excluding the funds targeting HRH)	0.42% (for nutrition activities, excluding the funds targeting HRH)	0.5%
		Indicator 3: Costed County Nutrition Strategic Plan developed and Nutrition Action Plan implemented.	0	1 CNAP developed	1 CNAP developed and launched 1 CCINAP (Costed County Integrated Nutritional Action	1

[2] The baseline study only consulted County Assembly Members.
[3] The targets given here are representative for the entire Siaya County and will be achieved in cooperation with Amref.
[4] This value was extracted from the County Integrated Development Plan 2013-2017 (CIDP) of Siaya County.

					Plan) developed	
	ER2 – "Capacity-building" – CSOs and state actors have a greater capacity (including human capacity) and improved skills and systems to respond to maternal and child nutrition needs in Siaya County	Indicator 1: Number of health workers [5]trained on relevant nutrition guidelines and SOPs	5 health workers trained on SOPs and MIYCN [6]	36 health workers trained (23 males and 13 females)	36 health workers trained (23 males and 13 females)	35 health workers trained on SOPs
		Indicator 2: Number of health workers and CHVs workers trained on MIYCN.	5 health workers trained on SOPs and MIYCN [7]	38 health workers trained on SOPs and MIYCN (21 females and 17 males)	38 health workers trained on SOPs and MIYCN (21 females and 17 males) and 1054 CHVs trained/sensitized on MIYCN	35 health workers trained on MIYCN 1054 CHVs trained on MIYCN
		Indicator 3: Proportion of health facilities experiencing no stock outs of essential nutrition commodities in past 3 months.	50%	80% of facilities reporting no stock outs of essential nutrition commodities	95% of facilities reporting no stock outs of essential nutrition commodities	80%
	ER3 – "Sensitisation and mobilisation" – Targeted communities are informed and empowered to demand, access	Indicator 1: Percentage increase of pregnant women who take iron-folic acid supplements during pregnancy.	55.5%	93.7% pregnant women taking iron-folic acid supplements	92.49% pregnant women taking iron-folic acid supplements	80%
		Indicator 2: Percentage increase of children under 6 months who are on exclusive breastfeeding.	37.5%	57.8% of children under six months of age were on exclusive	64.7% of children under six months of age were on exclusive	50%

[5] CHVs are generally not trained on nutrition guidelines and SOPs, therefore CARE decided to remove the CHVs for this indicator.
[6] The data collected in the baseline derives from interviews with only 12 health workers and no CHVs. Therefore, the numbers should be treated with caution as CARE considers that the numbers given in the baseline are not representative of the number of health workers and CHVs trained in the 3 Sub-counties of Gem, Bondo and Rarienda.
[7] See footnote 6.

	and utilize quality maternal and child nutrition services.			breastfeeding	breastfeeding	
		Indicator 3: Percentage increase of children aged 6-59 months receiving Vitamin A supplementation twice a year.	36.45%	46.0% children aged 6-59 months received Vitamin A supplementation twice a year in 2017	36.39% children aged 6-59 months received Vitamin A supplementation twice a year in 2018	80%
		Indicator 4: Percentage increase of children under 5 years with diarrhoea who are treated with zinc supplements.	13.06%	11.9% children less than 5 years with diarrhea who are treated with Zinc supplements	15.8% children less than 5 years with diarrhea who are treated with Zinc supplements	100%
		Indicator 5: Percentage increase of male and female final beneficiaries being able to name at least three benefits of healthy nutrition practices.	46.92%	58% male-female beneficiaries able to name at least three benefits of MIYCN	61.5% male-female beneficiaries able to name at least three benefits of MIYCN	80%
		Indicator 6: Proportion of final beneficiaries expressing the positive change in gender attitudes for MIYCN.	55.6%	60.6% beneficiaries expressing positive attitudes to MIYCN	59.3% beneficiaries expressing positive attitudes to MIYCN	80%
	ER4 – "Evidence-building" – Evidence on how effective nutrition	Indicator 1: Proportion of county health facilities with source documents data matching health facility summary sheet data.	66.7%	80.0%	88.9%	100%

	sensitive and nutrition-specific actions is built, discussed and disseminated.	Indicator 2: Proportion of county health facilities with source documents data matching DHIS2 data.	66.7%	95.0%	95.0%	100%
		Indicator 3: Proportion of county health facilities timely reporting nutrition data.	74.1%	75.0%	95.0%	90%
		Indicator 4: Proportion of Community units timely reporting nutrition data.	74.1%	75.0%	89.90%	90%
		Indicator 5: Number and type of good practices and research results documented and disseminated for evidence-based advocacy	Information brochure Evaluation reports Nutritional survey [8]	- Male involvement module developed - Research committee reactivated -	- 1 MSC and Best Practices Booklet - 5 abstracts(3 oral and 1 poster presentations)3 Studies(Baseline, MTE and ETE) - 1 Male involvement module developed	1 MSC booklet 1 best practice publication 3 studies 3 research abstracts

[8] The data collected in the baseline study only looked at the types of materials, and not the numbers.

Objective 2: Assess the project objectives and proposed outcomes by measuring performance against each indicator under each result area. The evaluators assessed the life of project targets and performance per Expected Result Area (ERA). The performance per indicator in the expected result areas are presented in tables with color codes on achievement levels with the key presented below.

Key to color codes

	Achieved or Surpassed Results
	Near achievement
	Moderate
	Non achievement

Life of project Targets

The project generally achieved the targets as presented by life of project target performance in table 1. However, the target of adolescent girls was not achieved due to unforeseen complexities not covered in the project design such as adolescent girls becoming pregnant. These girls were then chased from home and had no stable living environment as they were being accommodated by different relatives such as aunts, grandmothers or sisters for short periods that would not allow them to participate in the teenage mothers to mothers groups as per project design.

Table 1: Overall Project Target Performance Table

Beneficiaries	3Year Target	Annual Achievements			Total	% Achievement
		FY1	FY2	FY3 (Q3)		
Children under 5 years	94,435	1724	69,051	16175	86950	92%
Women of Reproductive Age	127,055	22317	78729	9511	110557	87%
Adolescent Girls	42000	728	17730	2104	20562	49%
Men	20,000	6617	22166	4203	32986	165%

ER1: Advocacy for Political Commitment: Advocacy was crucial in influencing systemic support through policy. The project reached 76 political leaders (the Governor, CECs, MPs and directors) including 54 MCAs, 2 MPs (Rarieda and Gem) and 20 executives. No Senator was reached. The project facilitated the development of the County Nutrition Action Plan (CNAP) which was used to develop the Costed County Integrated Nutrition Action Plan and County Nutrition Action Plan (CNAP) and the County integrated Development Plan (CIDP). Further, through advocacy the project influenced the development of the health bill which is about to be presented in the County Assembly to strengthen the nutrition unit. Table 2 shows that all the indicators were achieved or surpassed.

Table 2: ER 1 Performance Indicators Table

Indicators	Baseline	Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Number of county assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging	0	113*	0	0	0	76	76	76	67.2%*
Indicator 2: Proportion increase in county budgetary allocation for MIYCN services	0.08%	0.50%	0	0.24%	0.24 %	0.42%	0.42%	0.42%	84%**
Indicator 3: Costed County Nutrition Strategic Plan and County Nutrition Action Plan (CNAP) developed and implemented.	0	1	0	1	1	0	1	1	100%

*The target of 113 was or the whole of Siaya County. The three targeted Sub-counties only have 36 MCAs, 3 MPs and 1 senator of who all were reached except for the senator

** The budget achievement level has used the target of 0.5% as the denomitor

ER2: Capacity Building: Capacity building for the human resource for nutrition was key to the achievement of nutrition indicators. All indicators were achieved and some surpassed. Table 3 demonstrates that the best performing indicator was on training health workers through CME at 148% and the training of CHVs at 100%. These two indicators were critical in improving quality of nutrition service delivery hence leading to improved nutrition outcomes. Further, 95% of health facilities experienced no stock outs of essential nutrition commodities in past 3 months prior to the evaluation. The achievement of 95% was considered achieved given the margin of error of 5%. The facilitating factors for the CME achievement may be explained by the commitment of the ToTs, community feedback on service delivery based on the score card and effective monitoring of CME activities by both SCHMT and Nawiri Project team.

Table 3 ER 2 Performance Indicators Table

Indicators	Baseline	Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Number of health workers trained on relevant nutrition guidelines and SOPs.	0	35	36		36		36	36	103%
Indicator 2: Number of health workers and CHV workers trained on MIYCN.									
• Health workers(TOTs)	5	35	38	39	38	38	39	39	111%
• Health workers reached through CME	0	3300	0	1330	0	3539	4869	4869	148%
• Community Health Volunteers (CHVs)		1054	1054	1054		630	1054[9]	1054	100%

[9] The same CHVs were trained and refreshed (Source FHOK)

Indicators	Base line	Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 3: Proportion of health facilities experiencing no stock outs of essential nutrition commodities in past 3 months.	50%	80%	0	80%	80%		80%	95%	95%

ER3: Sensitization and Mobilization for Nutrition Services: The evaluation team noted that sensitization and mobilization were carried out effectively through community outreach programs. The team established that five types of nutritional outreaches were carried out 1) outreach for nutrition assessment in the general aspects; 2) outreaches focused on areas with chronic malnutrition issues; 3) outreaches done to link with commemoration of nutrition days such as *Malezi Bora* week and breastfeeding week; 4) food demo outreaches; and 5) outreaches using PET by CSOs. Table 4 shows that only two out of five indicators were achieved. The coverage of Vitamin A was 81.18%, with only 36.39% getting Vitamin A twice in the previous year. This indicator could have been affected by recall bias. The use of zinc pill or syrup did not increase as expected (80%). This indicator was measured at community level where zinc syrup is not generally sold in the shops as opposed to ORS which is found in some shops. The project did not do social marketing of zinc to ensure it was widely found in shops and hence accessible to households.

Table 4: ER 3 Performance Indicators

Indicators	Baseline	3 years Target	MTE	ETE	% Achieved
Indicator 1: Percentage increase of pregnant women who take iron-folic acid supplements during pregnancy.	55.50%	80%	93.70%	92.5%	92.50%
Indicator 2: Percentage increase of children under 6 months who are breastfed exclusively.	37.50%	60%	57.80%	64.7%	64.7%
Indicator 3: Percentage increase of children aged 6-59months receiving vitamin A supplementation twice a year.	36.45%	80%	46.04%	36.39%	-0.2%*
Indicator 4: Percentage increase of children under 5 years with diarrhoea who are treated with zinc supplements	13.06%	100%	25.7	15.8%	20.9%*
Indicator 5: Percentage increase of male and female final beneficiaries being able to name at least three benefits of healthy nutrition practices.	46.92%	80%	58%	61.5%	31.07%*
Indicator 6: Proportion of final beneficiaries expressing positive change in gender attitudes for MIYCN	55.60%	80%	60.60%	59.3%	59.3%

*This is percent increase from baseline computed as follows (ETE-Baseline/Baseline)*100

Expected Result 4: Evidence on effective nutrition-sensitive and nutrition-specific actions is built, discussed and disseminated: This result area was the best achieved overall with all indicators being achieved. Most indicator targets were surpassed attaining between 90% and 157% with qualitative data from SCHMT members also confirm the status of the proportions presented as presented in Table 5. This demonstrates that the project was effectively implemented. Most achieved indicator is number 5 which included development of 5 abstracts, 3 orals and one poster and one MSC booklet completed with best practices. These documents were used for advocacy and to reach larger audience with project results through presentations in conferences. The project also facilitated a nutrition conference in Siaya County.

Table 5: ER 4 Performance Indicators Table

Indicators	Baseline	3 Year Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Proportion of health facilities with source documents data matching health facility summary sheet data.	66.70%	100%			80%		0	88.9%	88.9%
Indicator 2: Proportion of health facilities with source documents data matching DHIS2 data.	66.70%	100%			95%		0	95%	95%
Indicator 3: Proportion of county health facilities timely reporting nutrition data	74.10%	90%			75%		0	95%	95%
Indicator 4: Proportion of Community Units timely reporting nutrition data	74.10%	90%			75%		0	89.9%	89.9%
Indicator 5: Number and type of good practices and research results documented and disseminated for evidence-based advocacy	0	7	0	1	1	10	11	11	157%

Objective 3: Assess the efficiency of the process of achieving results. Efficiency measures how economically resources/inputs (funds, expertise, time, etc.) are converted to results. The evaluation team was of the opinion that the project was efficiently implemented due to the following reasons. In this regard, the project endeavored to use most cost efficient ways. For example the project team in the consortium shared office space and vehicles. The project planned activities in a manner to avoid duplication of efforts and resources.

Objective 4: Efficiency of the organizational set-up for the project (partnership arrangement) and systems used in the delivery of the project. Nawiri project was implemented consisting of CARE (the lead partner), FHOK and KMET. The partnership was deemed efficient due to the following reasons: the partners had complementary expertise used across the project creating synergy; sharing of office space thus avoiding extra costs, use of common logistical support in the field through careful planning of trips; and facilitated formation of nutrition coordination mechanisms at the sub-county level and enhanced nutrition programming. Secondly, the partnership with the county health management team (CHMT) and location of the project office at the county headquarters facilitated interaction and consultation with the CHMT.

Objective 5: Gender aspects have been considered and included in the implementation (with specific focus on gender mainstreaming, setting of gender equality goals), inter alia, how women have participated or were represented meaningfully in decision-making and feedback. The project mainstreamed gender through the use of SAA in facilitating community dialogue challenging gender stereotypes. This led to changing of norms where men confessed to be taking up gender reproductive roles and women taking up productive roles.

Objective 6: Sustainability (financial, institutional and social) of the individual project components, and identify critical areas that may affect sustainability. The evaluation team found that Nawiri project strongly embedded sustainability in both the project design and implementation through a systems approach via policy framework and capacity building of implementation of structures. The nutrition policy documents included CNAP, CCNP, and pending nutrition bill. Capacity building for human resources for health (HRH) on nutrition through continuous medical education (CME) by MIYCN TOTs in line with the MOH policy framework has potential to continue as a result of performance contracting. Community level sustainability is through community strategy with the training of CHAs and CHVs; and capacity of ten grass-root civil society organizations (CSOs) in community mobilization and engagement through Participatory Educative Theater (PET) and Social Analysis and Action (SAA) which they may continue to use to engage the community in nutrition and gender related dialogue.

Challenges

1. Nutrition is a unit within the health department with no budget code. This means that even when a budget was allocated for nutrition in the unit it may be easily diverted to other health activities because the finances are in a pool.
2. Inadequate human resource for health for nutrition unit. There were 14 nutritionists for 21 health facilities meaning that some facilities had no nutritionists.
3. Attrition of staff trained by the project as a result of transfers and retirements led to the need for training new personnel of mobilizing support of the new leadership which requires time for buy in to the project.
4. The health workers' strike led to temporary withdrawal of some activities thus reducing the impact of the project. For example the slight negative change in vitamin A uptake could have been due to reduced access following the protracted strike by the health workers in the year 2018 that made health facilities to partially close down hence affecting the supply of vitamin A supply.

Facilitating Factors that Made the Project Achieve Results

1. The consortium had partners with complementary expertise which were well focused on project outcomes.
2. Good will from the County and Sub-county Health Management Teams
3. Collaboration and working together with the MOH teams, other partners in nutrition TWG and the community itself.
4. Transparency through joint planning and implementation with County and Sub-county health management teams.

Best Practices

The evaluation identified the following five best practices.

1. **Consortium approach.** The consortium facilitated sharing of expertise and capabilities for effective and efficient delivery of services.
2. **Male involvement training manual**. The adoption/contextualizing of male involvement training manual facilitated behavior change evidenced through male partners taking up more gender roles seen as feminine by the society in the family
3. **Participatory Educative Theater (PET)** methodology to enable the community to dialogue on MIYCN and gender issues
4. **Social Analysis and Action (SAA)**was effective in gender mainstreaming through community dialogue
5. **Community scorecard.** The score card was very effective in providing feedback to both health workers in the facilities and the community resulting in improved service delivery and increased utilization of the health facilities

Lessons Learnt

The lessons learnt in Nawiri project include but are not limited to the following:

1. Working with communities as drivers of change rather than recipients of change enhances sustainability and yields better results
2. Projects in response to the felt needs are more accepted by the stakeholders and likely to be successful and sustainable.
3. Involvement of relevant government department from the project development, planning and implementation provides a better partnership and has far reaching positive effects.
4. Well trained Community Health Volunteers can bridge the gaps in community health and nutrition programmes.
5. Engagement of top political leadership in programmes facilitates policy change
6. Male champions are the best influencers of gender attitude change in the community.

Conclusions

1 This evaluation has found compelling evidence that the Nawiri Project implementation partnership between the consortium of CARE, FHOK, KMET in partnership with government, local CSOs and communities has worked well in Siaya County to deliver sustained nutrition interventions over the three-year project period. There was effective buy-in and leadership at county, Sub-county and community levels; which ensured institutional support for project implementation.

2 Nawiri project design and implementation was found to be very relevant to the needs of Siaya County in general and aligned to the national nutrition policy. The targeting of county, Sub-counties and local communities ensured benefits flow down in improvement of nutrition indicators for children under the age of five years and their mothers as well as gender equity through male partners involvement with potential positive impact on maternal, infant and young children's morbidity and mortality.

3 The project was efficiently implemented through well-coordinated partnerships in the consortium (CARE, FHOK and KMET), County government and local Civil Society Organizations (CSOs). The partnerships created synergy through complementary capacities within the consortium and community engagement through indigenous grass-roots CSOs within the communities.

4 Nawiri project was effectively implemented evidenced by the high level engagement with both the political class and technical team in Siaya County which then facilitated the development of policy framework for implementation of nutrition programmes in Siaya County such as the development of CNAP and CCINP. The project engineered a sustainable framework for increased budget allocation for nutrition interventions. This was done through policy and county level capacity enhancement in budgeting for nutrition programmes through the development of the Costed County Integrated Nutrition Plan (CCINP), changing gender norms with men involved through SAA exhibiting attitude

change towards gender productive and reproductive work. However, more time is required to develop a critical mass of men to facilitate sustainable change.

5 Early Childhood Education (ECD) component of the project was linked with PATH ECD programme to create synergy in the county.

6 The project sustainability was engrained in the strengthened health systems at all levels. At the county, through the County Health committee for ratification and/or development of nutrition policies, County and Sub—county health management teams and at community level though community strategy.

7 The project has increased capacity of the health workers to implement MIYCN activities through CMEs to enable them integrate nutrition activities in their work. However, there is need for professional nutritionists for the health facilities for more effective prevention diagnosis and treatment of malnutrition.

8 Although Nawiri Projects has influenced the county to provide MIYCN budget in the health budget, the nutrition unit has limited access to the funds due to lack of budget code for nutrition activities.

9 The project effectively engaged the county government through advocacy and capacity building initiatives. The project is however, closing before the health bill in support nutrition unit's budget code is passed. The budget code will in turn enable the implementation of the CICNP which is critical for sustainability of nutrition outcomes realized in the project.

Recommendations:

County Government

1. County government through the health committee should consider fast tracking of the Nutrition Bill to enhance sustainability of the nutritional gains.

2. County government should consider providing a budget code for Nutrition unit to facilitate funding of nutrition programmes.

3. County government should consider increased budget to fund the CCINP for improved nutrition indicators.

4. County government should consider increment of human resource for health (HRH) for nutrition.

5. Consider strengthening the public- private partnerships (PPP) through nutrition technical working group (TWGs) and stakeholder forums to broaden coverage, support

continual delivery and implementation of beneficial health services to the community such as Vitamin A intake.

6. Consider strengthening adolescent sexual and reproductive programmes to address teenage pregnancies and address the challenges of teenage mothers.

CARE and Partners

1. Future projects working with adolescent girls should consider their unique and complex circumstances to provide solutions like linkage to rescue centers to provide temporary shelters as their issues are sorted.

2. Future projects should consider mapping out stakeholders with challenges in receiving mobile money transfer to avoid delays or loss of allowances when they use well-wishers phones

1.0 INTRODUCTION

Siaya Maternal and Child Nutrition Nawiri Project was a 36-month intervention on maternal and child nutrition. The project targeted to reach 94,435 children under 5 years; 127,065 women of reproductive age; 42,000 adolescent girls and 20,000 men in Gem, Bondo and Rarieda Sub-Counties in Siaya County. The project was executed in partnership among three consortium members; CARE (the coordinator), Family Health Options Kenya (FHOK) and the Kisumu Medical and Education Trust (KMET) in Siaya County with funding support from the European Commission, the Austrian Development Agency (ADA) and CARE.

1.1 Objectives of the project

1.1.1 Overall Objective

The overall objective of this project was to contribute to improving MIYCN, including nutrition of women of reproductive age in Siaya County.

1.1.2 Specific Objective

The specific objective was to increase the capacity and commitment of Civil Society Organizations (CSOs) and state health actors to provide and facilitate access to coordinated, complementary, quality MIYCN services in Siaya County.

1.1.3 Expected Results (ER)

The Nawiri project had the following expected results (ER):

ER1: Political commitment and good nutrition governance in the Siaya County were to be strengthened and vulnerable groups in decision-making processes integrated.

ER 2: CSOs and state actors were to have greater capacity (including human capacity) and improved skills and systems to respond to maternal and child nutrition needs in Siaya County.

ER 3: Targeted communities were to be informed and empowered to demand, access and utilise quality maternal and child nutrition services.

ER 4: Evidence on effective nutrition-sensitive and nutrition-specific actions was to be built, discussed and disseminated.

1.2 Purpose/objectives of the survey

The **overall objective** of the evaluation of the Siaya Maternal and Child Nutrition, Nawiri project was to establish the achievements of project implementation between May 2016 and March 2019 and the overall impact on final beneficiaries. The evaluation followed the CARE International Evaluation Policy (Annex 1) and used a participatory methodology. Recommendations emerging from the end-term evaluation would inform and guide the design of future projects and generate information on the level of achievement of the intervention objectives/outcomes. Evidence of emerging impact and information would be useful to stakeholders. Specifically, the evaluation sought to address the following issues and provided

specific, actionable and practical recommendations for future projects:

1. The evaluation provided an assessment against the project goal, objectives and expected results based on the indicators of the project log-frame (including data disaggregation by gender and age). Within the framework of the process evaluation, the logic model and relevance of the project to the identified needs were assessed, specific gaps identified and recommendations provided.

2. Project objectives and proposed outcomes were assessed by measuring performance against each indicator under each result area. Key determinants that were positively or negatively critical for obtaining these results were analyzed.

3. Assessed the efficiency of the process of achieving results and determined the contribution of the adopted gender equality Social Analysis and Action (SAA) Model and rights based approach project, community score card strategy for social accountability, advocacy strategies for political commitment, role of mother to mother support groups, male champion curriculum and training, role of MIYCN Trainer of Trainers (ToTs), impact of community outreaches, food demonstration sessions and public participation by CHVs during budget development process towards achieved results.

4. Evaluated the efficiency of the organizational set-up for the project (partnership arrangement) and systems used in the delivery of the project and the extent to which these contributed to or inhibited the delivery of the project outcomes.

5. Assessed how gender aspects have been considered and included in the implementation (with specific focus on gender mainstreaming, setting of gender equality goals), inter alia, how women had participated or were represented meaningfully in decision-making and feedback.

6. Assessed the level of sustainability (financial, institutional and social) of the individual project components, and identified critical areas that may affect sustainability.

7. Provided recommendations on future project design including how to ensure log frames are more effective.

2.0 METHODOLOGY

2.1 Data Collection Methods and Tools

2.1.1 Data Collection Methods

Benaphil Consultants (BCL) applied both quantitative and qualitative data collection methods. In order to promote stakeholder involvement and learning as much as possible, the team used participatory methods in line with the CARE International Evaluation Policy.

Quantitative data were collected through household questionnaires administered to mothers of children below 5 years. The evaluation team conducted a series of qualitative interviews using participatory tools such as key informant and focus group discussions, with participants disaggregated by gender. BCL supplemented interview information with documents and secondary data review. These qualitative results were triangulated with results from quantitative household surveys and service delivery data from health facilities. The team carried out interview work in each of the three sub-counties covered. These communities were selected in consultation with the CARE team and BCL recommended choosing one of most successful and most challenging of communities covered in order to maximize lesson learned and success stories generated. The evaluation methodology ensured that the final report described the project impact on the lives of the communities, both general projects attributes (relevance, efficiency, effectiveness, impact and sustainability) as well as the degree to which each objective had been achieved. Figure 2 below summarizes the data collection at various levels

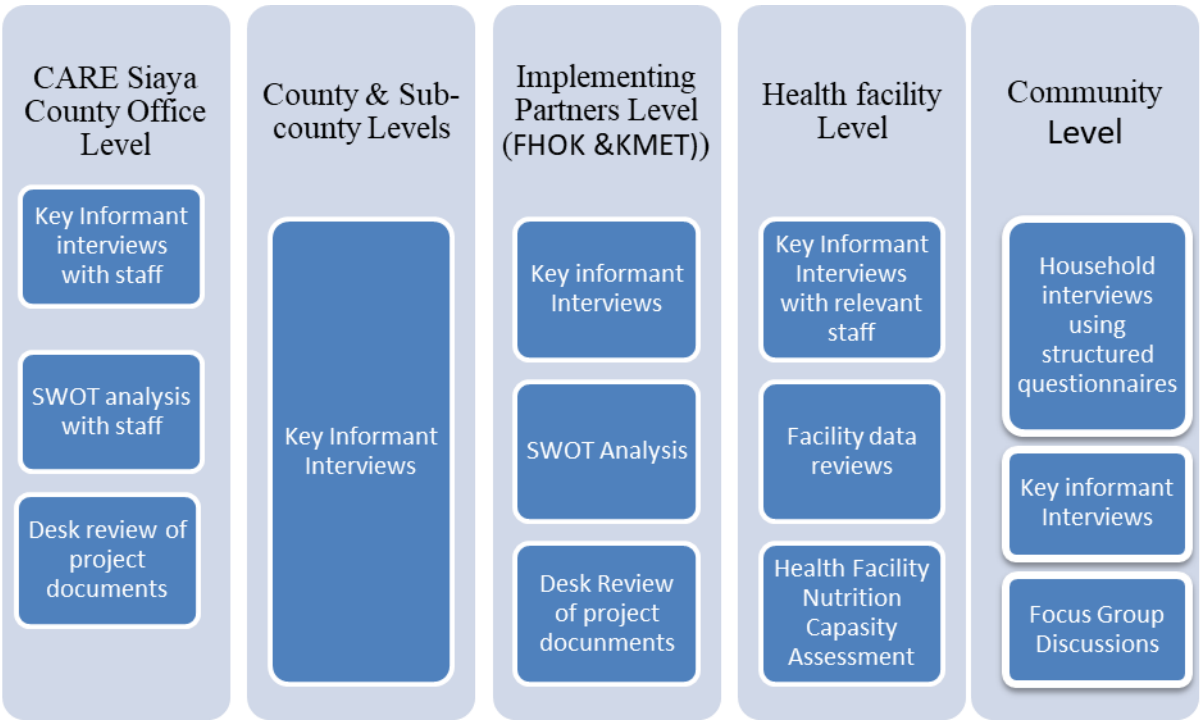

Figure 1: Data Collection at various Levels

2.1.2 Data Collection Tools

Five types of tools were used in data collection including in the household survey questionnaires for quantitative data, focus group discussion guides, Key informant interview guides, Strengths Weaknesses Opportunities and Threats (SWOT) analysis tool for qualitative data and clinic data review form summarized in Table 1. These tools were the main framework and basis for training the respective data collection teams. The tools were pre-tested during the field teams training process and refined thereafter before they were used in the final evaluation data collection. The tools have been attached as Annex 2.

Table 1: Data Collection tools

Quantitative Tools	Qualitative Tools
• Survey Questionnaires	• Key Informant Interview (KII) Guides
• Clinic data review form	• Focus Group Discussion (FGD) Guide

2.2 Study Design

The evaluation used cross-sectional descriptive survey design to collect data across the three sub-counties of Bondo, Gem and Rarieda over a five day period.

2.3 Sampling and Sample size

BCL sampled a total of 422 households for quantitative data collection. However 461 households were interviewed. Some off the households had some missing variables, Hence there denominators (N) are not constant. The quantitative sample size had been calculated using the Cochran Israel formula with an adjustment of 10% to take care of any possible design effect.

$$n \geq \frac{Z^2 .p .q}{d^2}$$

n= desired sample size
z= standard normal deviate at the required confidence level
p= the proportion of the target population or the estimated characteristics being measured
q = the maximum tolerable error for the prevalence estimate ±0.05
d = the marginal error allowed or degree of accuracy desired (in our case 95% confidence limit, thus marginal error allowed, d=0.05.

$$n \geq \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05} = 384.16$$

Adding 10% for design effect: n = 384+ (384x10/100) = 384+34=422

The sample size was allocated proportionately using population data to the three project sites of Bondo, Rarieda and Gem as shown in table 2:

Table 2: Sampling Frame

Sr. no	Project site	Total population[10]	Proportion	Targeted sample size (HH)	HHs Interviewed	Proportion
1	Bondo	183,565	35%	148	156	33.8%
2	Gem	184,100	35%	148	152	33.0%
3	Rarieda	156,804	30%	126	153	33.2%
	Total	**524,469**	100%	**422**	**461**	**100%**

2.4 Sampling Techniques and Respondent Characteristics

2.4.1 Sampling Techniques

Three sampling techniques were applied. Purposive sampling was used for qualitative respondents in Key informant interviews and focus group discussions, clustered and systematic random sampling technique for quantitative data in household survey. The quantitative sampling followed a two stage cluster random sampling method with the first stage being selections of clusters defined as wards and the second being selection of households for interviews.

Stage 1 sampling: Selection of clusters: This was done using probability proportionate to size, and the most recent census lists from the wards. The sampling interval was calculated by dividing the total population of the Sub-county by the number of clusters (wards). A random start number was used to get the location of the first cluster. Subsequent clusters were calculated by adding the sampling interval to the random number, and so on, until the required number of clusters was arrived at.

Table 3: Sample size calculation per cluster (ward)

Sub-Counties	# clusters (wards)	# households to visit	# households per cluster	Actual HH surveyed per cluster
Bondo	3	148	50	52
Rarieda	3	126	42	51
Gem	3	148	50	51

Stage 2 sampling: Selection of households: Within each selected cluster, a direction was selected randomly from a central location of the community using a toast the coin method. The first household was selected in the identified direction, by counting the number of households seen in the selected direction and selecting one of them randomly. Once the first household is selected, subsequent households were selected using the "next nearest door" method, until the required number of households was reached. The selection of household and respondents has been illustrated in an algorithm below in Figure 2.

[10] Siaya County Integrated Development Plan 2013

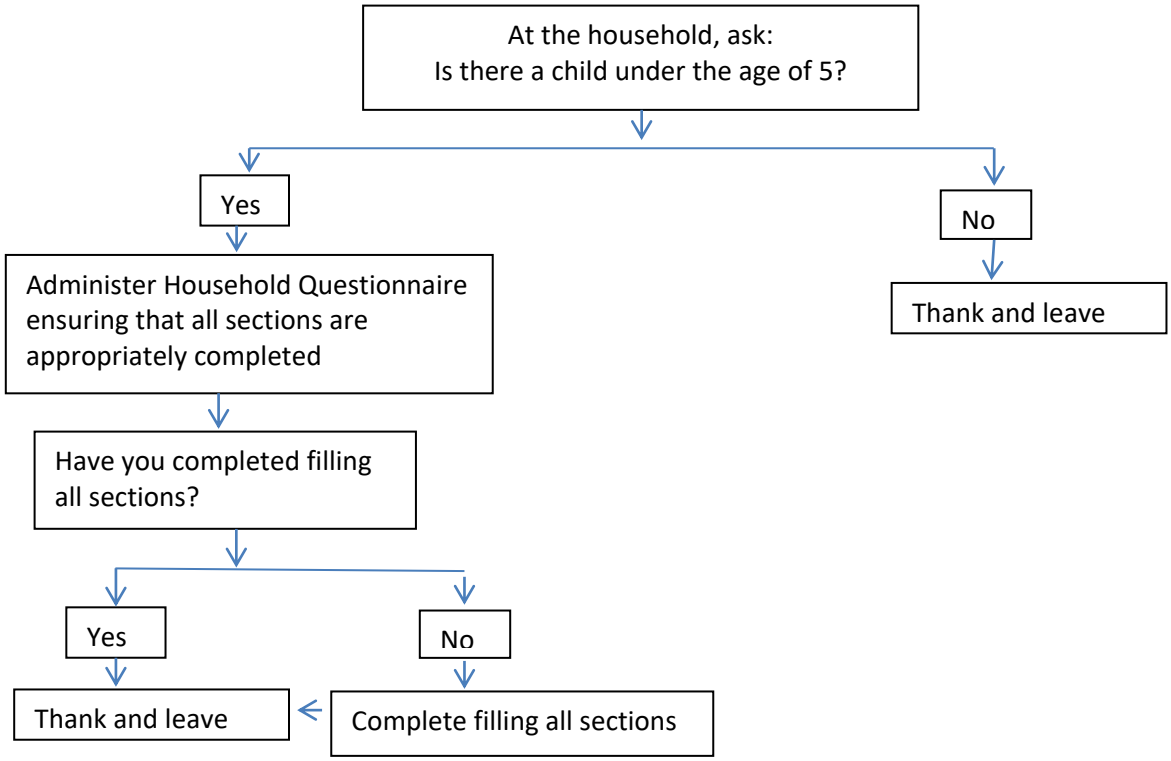

Figure 2: Selection of respondents

2.4.2 Respondent Characteristics

The respondents' characteristics depended on the type of data to be collected which included quantitative data through household surveys and qualitative data through Key informants and focus group discussions.

Household survey: A quantitative household survey was conducted targeting mothers of children aged less than 59 months.

Key Informant Interviews: Key informants interviews were conducted with about 15 respondents including project staff, relevant government representatives and stakeholders presented in table 4.

Table 4: KII Respondents Categories

Respondent Categories	Respondents for KIIs
Care Kenya	The Project Manager, Project Officer
KMET	Project officer
FHOK	Project assistant
Partner CBOs	3 CBOs
CHMT	1. County Nutritionist
Sub-county Health Management Team (SCHMT)	Sub County Nutritionists # 3 SCMOH #2
Health services providers	TOTS #3
For Advocacy and Political Commitment Result area	MCA Chair health committee #1
Capacity Building Result area	Trained Health care workers# 3
Evidence Building Result area	1. County Nutritionist #1 2. All the sub county Nutritionist #3

Focus Group Discussion: The focus group discussions were carried out by research assistants at the community level. The specific target groups were spread out in the three sub-counties to ensure diversity of opinion. The questions guides were administered to groups comprising of between eight (8) to twelve (12) people each. A total of 24 FGDs was carried out being 8 per sub-county as detailed in table 5.

Table 5: FGD Respondents Interviewed

S/N	FGD category	FGDs per sub-County	Total
1	Community Health Volunteers	1	3
3	Teen mothers support groups	1	3
4	Mothers to Mothers groups	1	6
5	SAA beneficiaries(male champions)	1	3
Total		**4**	**15**

2.5 Data Management

Data management commenced with development of valid data collection tools responding to evaluation questions. This was followed by recruitment and training of data collectors on the tools, data quality and evaluation ethics. During data collection, quality was assessed at the field level to ensure correctness and completeness of information. Qualitative data was transcribed daily to ensure the information is not lost and to help in ensuring that all required information

is collected during the evaluation field work. The lead consultant held discussions every close of business with the data collectors to ensure they captured all the important information and in case of information deficit, more data was collected to answer evaluation questions.

2.5.1 Selection and training of Data Collection Teams

Data Collection Assistants and Field Supervisors were hired by CARE from their data collectors' data base to conduct the household surveys and focus group discussions. The numbers of Data Collectors for each study site (Sub-county) were 6 people giving a total of 18 data collectors. The following criteria were used in selecting the Data Collectors

- Good knowledge of the culture and language in the local community.
- Experience in household surveys for health similar to the evaluation survey.
- Adequate formal education and work experience to quickly grasp the evaluation questions and the most appropriate way to administer the questions to respondents.
- Ownership of a Smart phone for electronic data collection.
- The data collectors were marched with a CHV who guided them to household with the children under 5 years in the community.

Additional Data Collectors were hired to conduct the FGDs. People with good experience in qualitative research and good knowledge of the culture and language of the evaluation communities were selected. Up to 6 people were selected and deployed; two per sub-county to conduct the 8 FGDs planned in each site. They were also responsible to translate and transcribe all the proceedings from the focus groups, and to produce electronic versions of the complete FGD record of discussions.

All Data Collectors and CHVs were trained together in one centre. The training of the field teams lasted 2 days; with focus on the following key elements of the evaluation process:

- Nawiri Project results and the process of its implementation.
- In-depth understanding of the data collection tools, and field trial of the tools in actual use.
- Electronic data collection using smart phones.
- Orientation to the health system and health care practices in the evaluation sites.
- Ethical considerations.
- Data collection skills and etiquette.

During the training, some separate sessions were arranged as required for the household survey teams and the FGD teams. This enabled the necessary focus on the respective tools and evaluation process as relevant to each team. The training was conducted by the consultants. They were supported as needed by Ministry of Health personnel from the County/Sub-counties. CARE staff also participated in the training to provide in-depth understanding of the Nawiri Project.

2.5.2 Data Analysis

Quantitative data: Data was collected electronically using the Kobo Collect mobile application. This allowed for elimination of data quality compromise and time delays inherent in entry of data collected using paper questionnaires. Data collected each day was double-checked by the Data Officer before uploading. Data verified as valid and complete were uploaded to the web-based database at the end of each day by the data collectors once approved by the Data Officer. Necessary callbacks were done to address data with gaps that could be dealt with through clarification visits to the same households. In situations where this was required; additional households were visited in the covered clusters, continuing from the last household visited in the sampled community.

A stock of paper questionnaires were availed to all data collection teams during the data collection process as a backup in case of problems with the electronic devices in use. All data collected using the paper questionnaires were checked and entered at the end of each day.

The Data Officer exported the complete data set into the statistical Package for Social Scientists (SPSS) version 25.0 for analysis and ENA software for the analysis of anthropomeric data. This involved summary presentations (tabulation and charts) in order to generate both descriptive and inferential statistics. The descriptive statics included percentages, frequencies, measures of central tendencies such as mean and standard deviations. Inferential statistics include Chi-square which was used to measure the association of variables at 0.05 and below.

Qualitative data: Qualitative data from focus group discussions and key informant interviews was recorded and transcribed. The evaluators ensured that the transcripts from spoken local language to English are carefully considered for linguistic nuances. Data analysis was done with Ti Atlas where the evaluators established protocols for coding each transcript to topically categorize and organize the content, which was the first step in identifying themes. Codebook development followed an iteractive process informed by the evaluation purpose, interview guide content and preliminary findings based on quantitative aspect of the study. The evaluators conducted the coding exercise to establish code consistency protocols and further organized document families, code families and individual codes. After coding was complete, the evaluators ran queries on the coded data to analyze the content and themes that emerged from the qualitative study, drew out data to interpret and triangulate findings from the quantitative and qualitative data.

2.5.3 Data quality

Data quality started with the adoption and development of appropriate questions responding to the evaluation. This was followed by training of data collectors on the tools and pre-testing the tools to ensure clarity of presentation and sequencing. Protection of information and data was taken seriously on behalf of our clients and the communities we worked with. Data protection measures were typically stipulated by an in-house Standard Operating Procedure (SOP) emphasizing the client's confidentiality measures and locational and time verification of data through collection of GPS coordinates. We stood ready to implement any and all measures concerning sensitive information including SOPs regarding multiple-step rights access verification, password protection, and data encryption during transmission, archiving, storage, and retrieval. In Nairobi, our secure server maintains an excellent and stable Internet

connection, which allowed us to reliably collect data from decentralized collection points throughout the Kenya via web-based KoBo Collect platform**.**

2.5.4 Data Dissemination Plan

The evaluation report was disseminated through presentation of the study findings first to CARE team for their input and validation of the evaluation results before final dissemination for the stakeholders and project beneficiaries in the county.

2.6 Ethical Considerations

The evaluation team paid attention to the following ethical issues: informed consent, privacy, justice, beneficience and confidentiality.

Informed Consent and confidentiality: The following measures were taken to secure informed consent and assent of the respondents: explaining the objective of the evaluation, the kind of information required and the intended use, and above all, providing reasons for choosing the respondents. Anonymity and confidentiality were guaranteed. Overall, the team ensured that all data were coded and stored safely with limited access.

3.0 END TERM EVALUATION FINDINGS

This section presents the household characteristics and the results for Nawiri project based on the thematic areas. It commences with presentation of the socio-demographic data and the Nutrition indicators in response to the **overall objective:** to contribute to improving maternal, infant and young child nutrition, including nutrition of women of reproductive age, in the Siaya County, Kenya. This is followed by the expected result areas one to four. **Expected Result 1:** Political commitment and good nutrition governance in the Siaya County were strengthened and vulnerable groups in decision-making processes integrated; **Expected Result 2:** CSOs and state actors had greater capacity (including human capacity) and improved skills and systems to respond to maternal and child nutrition needs in Siaya County; **Expected Result 3:** Targeted communities were informed and empowered to demand, access and utilize quality maternal and child nutrition services; and **Expected Result 4:** Evidence on effective nutrition-sensitive and nutrition-specific actions built, discussed and disseminated. The section ends with response to remaining evaluation questions in the terms of reference.

Discussion in this section are based on findings from the household survey conducted as part of the end term evaluation, compared with results from the baseline and mid-term surveys as well as with the comparison area for select indicators. Point estimates are presented with the denominator (n) and 95% confidence limits. When the 95% confidence limits of two point estimates do not overlap, the difference between the two estimates is considered statistically significant, but the converse is considered likely (and not necessarily true). Disaggregation by gender and age are presented where relevant and are triangulated with qualitative data from focus group discussions and in-depth interviews conducted as part of the end term evaluation.

3.1 Household characteristics

The study targeted households with children below five years and their caretakers (mothers). Table 6 depicts that Children 0-6 months formed 15.84% (n=71) and 84.16% (n=382) children 6-59 months, the boy to girl ratio was 1:1 i.e. 244 boys and 204 girls. The average age for the last birth of mothers was 26.51 years (SD-5.9).

Table 6: Distribution of age and sex of sample

	Boys		Girls		Total		Ratio
Age (months)	no.	%	no.	%	no.	%	Boy: girl
0-6	44	61.90	27	38.10	71	15.84	1.6
6-17	87	50.60	85	49.40	172	38.40	1.0
18-29	58	58.60	41	41.40	99	22.10	1.4
30-41	29	47.50	32	52.50	61	13.62	0.9
42-53	18	62.10	11	37.90	29	6.47	1.6
54-59	8	50.00	8	50.00	16	3.57	1.0
Total	244	53.10	204	46.90	448	100.00	1.1

Table 7 further revealed that 62.25% of the mothers were lactating, 82.39% were married and 40.2% of the mothers in this study completed primary level education. More observations portrayed that majority of the respondents were Protestants with 75% and 29.35% solely depended on casual labor as the main source of income.

Table 7: Distribution of Household Characteristics

Characteristic	Frequency	Percent (%)
Gender (n=448)		
Boy	244	45.47
Girl	204	54.53
Age in months (n=453)		
0-6 months	71	15.67
6-59 months	382	84.33
Physiological status of the mother (n=453)		
Pregnant	16	3.53
Lactating	282	62.25
Pregnant and lactating	2	0.45
Not pregnant/ not lactating	153	33.77
Marital Status (n=460)		
Married	379	82.39
Single/ never married	60	13.04
Divorced/Separated	6	1.3
Widowed	15	3.27
Relationship with household head n=460		
Head	58	12.61
Wife	310	67.41
Mother	50	10.87
Daughter	28	6.09
Grandmother	2	0.42
Mother in-Law	1	0.22
Niece	1	0.22
Sister	3	0.65
Grandchild	5	1.09

Other (specify)	2	0.42
Level of education (n=460)		
No formal education	1	0.22
Primary not completed	109	23.70
Primary completed	185	40.22
Secondary not completed	85	18.48
Secondary completed	65	14.13
Tertiary college / University	15	3.25
Religion (n=460)		
Protestant	345	75.00
Muslim	4	0.87
Roman catholic	76	16.52
Adventist	21	4.56
Traditional religion	14	3.05
Main source of household income (n=460)		
No reliable source of income	110	23.91
Salaried employment	13	2.83
Casual labor/wage earner	135	29.35
Assistance (Hand-outs)	4	0.87
Business	120	26.09
Crop farming	78	16.95

3.2Nutritional Status of Mothers and Children

3.2.1 Nutritional status for mothers

The nutritional status for mothers and caretakers of the children were also recorded during the survey. The primary indicator for classification was MUAC. MUAC is a simple tool that best fits in assessment of the nutritional status of pregnant women particularly during community centered nutrition interventions (Table 8).

Findings from this survey revealed that 86.95% were overweight. Somehow, based on examination on physiological status of the mothers interviewed, the outcome depicted that a large percentage of these mothers were either lactating (62.25%) or pregnant (2.65%) and therefore had not been able to shed off the weight gained during pregnancy by the time this data was being collected, This kind overweight is temporary as the mothers would tend to lose weight during the entire process of lactation, furthermore, the period of pregnancy and lactation are not the time to institute weight loss approaches but the mothers should be under close monitoring of qualified nutritionists and dieticians to ensure that the situation is not out of hand especially where there is persistence after lactation. In essence, the findings are normal. The average year for last birth was 26.51 years.

Table 8: MUAC Classification for Mothers

MUAC in cm n = 452	Classification	Frequency	Percent (%)
< 18cm	Severe	2	0.44
≥ 18 & ≤ 21 cm	Moderate	2	0.44
> 21 & ≤ 24 cm	Normal	55	12.17
> 24 cm	Overweight	393	86.95

3.2.2 Nutritional status among children

Nutrition Characteristics of the Survey (based on WHO standards 2006)

Malnutrition as a result of micronutrient imbalances, wasting, stunting and suboptimal breastfeeding is associated with approximately 45% of under five year deaths and a fifth of maternal deaths in low and middle income countries (Bilukha, Prudhon, Moloney, Hailey & Doledec, 2012). Circumstances that lead to stunting for instance, poor feeding practices have proven damaging effects to the cognitive development of a child. Widespread studies across countries demonstrate that under nutrition after 2 years of life is less likely to be reversed[11]. What follows is a deprived learning capacity, performance in school and an altered attainment of peak height at adulthood. For that reason, prevention of under nutrition especially below 5 years presents a window of opportunity that cannot be ignored. Efforts geared towards eliminating such an occurrence safeguards not only the children and families but also a healthy and productive workforce for the society at large.

This section delivers the key nutrition findings that align with objective one. A household survey questionnaire to capture quantitative data was administered to the mothers of the children below 5 years. The anthropometric indicators measured during the survey included weight, height/length, oedema and mid upper arm circumference (MUAC). Global acute malnutrition was defined as <-2 z scores weight-for-height and/or oedema and severe acute malnutrition as <-3z scores weight-for-height and/or oedema. Stunting, a reflector of chronic under nutrition was defined as < –2 z score height-for-age, underweight as < –2 z scores weight-for-age and overweight as > +2 z scores weight-for-height. All these indicators are referenced against the WHO Child Growth Standards Median.

Weight-for-age (WAZ), height-for-age (HAZ) and weight-for-height (WHZ) Z-scores based on WHO 2006 growth standards were calculated from weight, height/length, age, and sex variables using Emergency Nutrition Assessment (ENA) software 2011, developed for the Standardized Monitoring and Assessment of Relief and Transitions (SMART) initiative.

There were no duplicate data entries. Any records with missing WAZ (n = 8), HAZ (n = 3) and WHZ (n = 8) were removed. The means were then calculated and are tabulated in table 9 below.

[11] https://www.unicef-irc.org/article/958-the-first-1000-days-of-life-the-brains-window-of-opportunity.html.

Table 9: Mean z-scores, Design Effects and excluded subjects

Indicator	N	Mean z-scores ± SD	Design Effect (z-score < -2)	z-scores not available*	z-scores out of range
Weight-for-Height	440	0.25±2.23	1.00	5	0
Weight-for-Age	440	-0.24±1.80	1.00	5	0
Height-for-Age	445	-0.78±2.06	1.00	0	0

* contains for WHZ and WAZ the children with Oedema.

The procedures followed for taking anthropometric measurements during the survey are specified below;

a) Length/height.

The length of each child aged 6-24 months was measured by the child lying flat and centrally on the measuring boards placed on a hard flat surface on the ground. The length was read to the nearest 0.1 cm (head and feet against the base of the board and foot piece respectively). The height of children aged above 24 months was measured by the child standing straight on measuring board placed on hard flat surface against a wall with line of sight perpendicular to the horizontal surface. The child's height was taken twice and recorded to the nearest one decimal place. The average were then calculated and used as the final measure of height/length.

b) Weight.

Those children who could stand were asked to stand on the weighing scale placed on a flat floor with hard wooden platform under the scale. Children, who could not stand on their own, were weighed together with their mothers and then the mother weighed alone using the same weighing scale. The subjects' weight was calculated by subtraction from the mother's weight. These measurements were taken twice and recorded. The averages were then calculated as used as the final measure of the weight.

c) MUAC

The respondent (mother and child) were asked to remove any clothing that covered the left arm and asked to stand sideways in the side of the measurer. The midpoint of the left arm was estimated and stretched and the tape wrapped around the arm at the midpoint with numbers is right side up and the tape flat around the skin (not too tight or too loose). The measurements were then read and recorded to the nearest 0.1 cm. The classification of MUAC is presented in Table 10 below.

Table 10: MUAC classifications

MUAC Cut-Offs	Classification
MUAC<115mm and/or bilateral oedema	Severe acute malnutrition with high risk of mortality
MUAC >=115mm and <125mm	Moderate acute malnutrition with risk of mortality
MUAC >=125mm and <135mm	Risk of malnutrition
MUAC > 135mm	Adequate nutritional status
Maternal MUAC Cut-Offs	
MUAC < 21cm	Malnourished
MUAC ≥21cm≤21.5cm	At risk
MUAC >21.5 and <24cm	Normal
MUAC > 24cm	Overweight

3.2.3 Anthropometric indicators and interpretations

3.2.3.1 Mid Upper Arm Circumference (MUAC)

A special tape was used for taking mid upper arm circumference measurements. The tape has three colours, with the red indicating severe acute malnutrition (<115mm/11.5cm), the yellow indicating moderate acute malnutrition (>115 to 125mm/11.5 to 12.5 cm) and the green indicating normal nutritional status (>125mm/12.5cm) presented in Figure 3. The findings shown in Table 11 specified that majority of the children 0 – 59 months had normal MUAC readings.

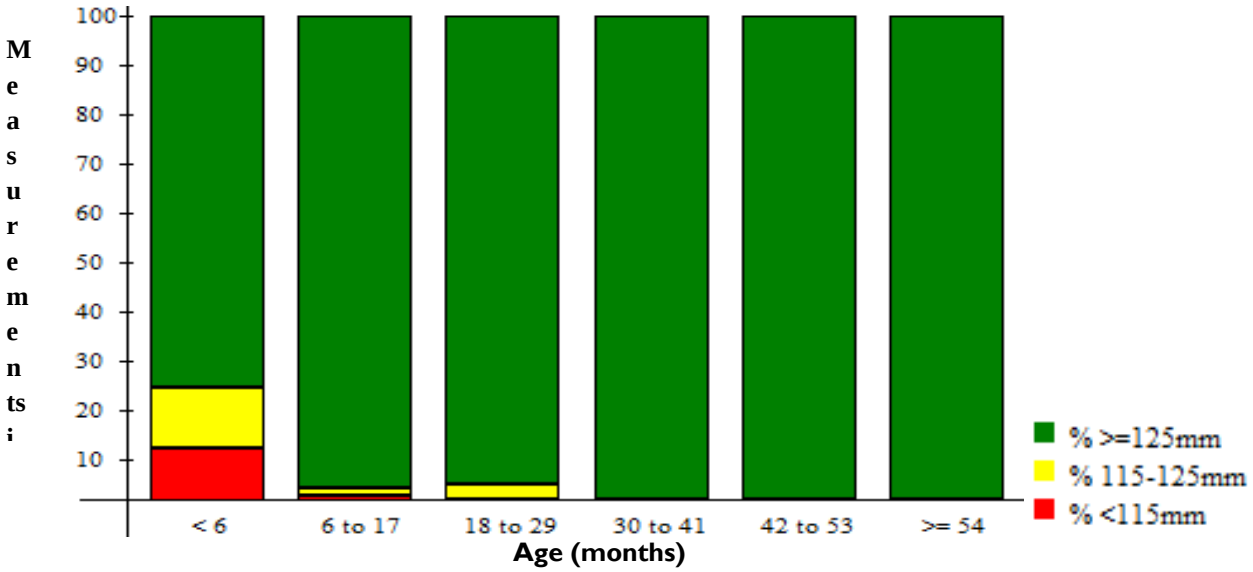

Figure 3: Classification of malnutrition for children (0 – 59) months according to MUAC

Additional analysis through age groups illustrated that majority of the children recorded normal measurements based on MUAC. It is important to note that MUAC is not effective as measurement of nutritional status in children below six months because of the proven lack of evidence to direct its interpretation at this stage of life (WHO Bulletin Volume 90 December 2012 pgs 641 - 944. However for the ages of six months to 59months this is an important

measure for health of children as they are affected by the nutrient intake and utilization since it has a predictive value with respect to child mortality. A favourable statistics as indicated below is therefore an indication of the hard work put in by the Nawiri project. Out of the (n=377) children assessed only one child (n=1) indicate severe wasting 0.3% while 1.06% (n=6) had moderate acute malnutrition with 98.10% (n=370) having normal measurements indicating improved quality of life in the areas that were under the evaluation. Table 11 indicates the distributions within the age groups.

Table 11: Prevalence of acute malnutrition by age, based on MUAC cut offs and/or oedema

		Severe wasting (< 115 mm)		**Moderate wasting (>= 115 mm and < 125 mm)**		**Normal (> = 125 mm)**		**Oedema**	
Age (months)	**Total no.**	**No.**	**%**	**No.**	**%**	**No.**	**%**	**No.**	**%**
6-17	172	1	0.60	3	1.70	168	97.70	2	1.20
18-29	99	0	0.00	3	3.00	96	97.00	1	1.00
30-41	61	0	0.00	0	0.00	61	100.00	0	0.00
42-53	29	0	0.00	0	0.00	29	100.00	0	0.00
54-59	16	0	0.00	0	0.00	16	100.00	0	0.00
Total	377	1	0.30	6	1.60	370	98.10	3	0.80

3.2.3.2 Oedema

The presence of oedema was investigated across all age groups and results revealed prevalence to be 0.9% as illustrated in Table 12. The presence of oedema is reflected as indication of protein deficiency as a result of consumption of diet that is low in body building foods that are essentially rich in protein. looking at the food consumption score there were households that tended to consume more carbohydrate rich staple foods either as a coping strategy or to meet the dietary needs though they were not many. this situation is not grevious as only 0.9% (n=4) depicted this clinical symptom, hence a success that was attributed to intensive community engagement by Nawiri project through community health volunteers on health and nutrition education that provided clear nutrition education on child feeding.

Table 12: Distribution of acute malnutrition and oedema based on weight-for-height z-scores

N=444	**<-3 z-score**	**>=-3 z-score**
Oedema present	Marasmic kwashiorkor No. 1 (0.2 %)	Kwashiorkor No. 3 (0.7 %)
Oedema absent	Marasmic No. 26 (5.9 %)	Not severely malnourished No. 414 (93.2 %)

3.2.4 Nutritional status for children 0 – 6 months

In reference to weight, height/length and age, 72.50% of the boys 0 – 6 months exhibited median height-for-age, 57.14% median weight-for-age and 38.10% were overweight. On the contrary, girls 0 – 6 months recorded median classifications in all the mentioned categories, 66.67% HAZ, 60.00% WAZ and 29.33% WHZ. Table 13 and 14 categorizes more details.

Table 13: Prevalence of WHZ, HAZ and WAZ for boys 0 – 6 Months

Indicator N=444	Frequency	Percent (%)
Weight-for-height (n=42)		
Severe	3	7.14
Acute	4	9.52
Moderate	4	9.52
Median	12	28.57
Overweight	16	38.10
Obese	3	7.15
Height-for-age (n=40)		
Severe	1	2.50
Acute	5	12.50
Median	29	72.50
Overweight	3	7.50
Obese	2	5.00
Weight-for-age (n=42)		
Severe	1	2.38
Acute	2	4.76
Median	24	57.14
Overweight	10	23.80
Obese	5	11.92

All the girls registered median WAZ, HAZ and WHZ indicating that no girl had the probability of experiencing underweight, stunting or wasting respectively hence had more sustainable growth and development compared to their male counterparts and therefore had more resilient growth patterns with minimal vulnerability to slide into under nutrition situation

Table 14: Prevalence of WHZ, HAZ and WAZ for girls 0 – 6 Months

Indicator* N =444	Frequency	Percent (%)
Weight-for-height (n=27)		
Severe	4	14.81
Acute	2	7.41
Moderate	3	11.11
Median	8	29.63
Overweight	6	22.22
Obese	4	14.82
Height-for-age (n=27)		
Severe	2	7.41
Median	18	66.67

Indicator* N =444	Frequency	Percent (%)
Overweight	2	7.41
Obese	5	18.51
Weight-for-age (n=25)		
Severe	3	12.00
Acute	2	8.00
Median	15	60.00
Overweight	3	12.00
Obese	2	8.00

*Median readings for all categories ENA Program would only pick on complete available data to compute on median readings in all categories hence the variations in sample per category. However this does not affect the weighted contribution into the computed characteristics.

3.2.5 Nutritional status for children 6 – 59 months

This group formed the largest number of the survey respondents. The outcome of this evaluation revealed that the prevalence of global malnutrition based on (WHZ) was 10.60%, underweight based on (WAZ) was 13.00% and 22.20% experienced stunted growth based on (HAZ). Comparative trend of the nutrition status of children 6-59 months from baseline to the end term evaluation in Siaya County against the national prevalence is represented in the Table 15. Classification for assessing severity of under-nutrition by prevalence ranges among the children below 60 months of age groups the prevalence indicated on the table as medium according to WHO, for the evaluated sub-counties stunting was 22% falling within the medium prevalence classification and below the national average of 26% reflecting an excellent performance of Nawiri project considering that this a long term indicator that is sensitive to impact evaluation. On the contrary moderate wasting seems to have increased by 4 percentage points from the mid-term evaluation, which could have been as a result of improvement experienced by children who had severe wasting following the interventions or aggressive treatment by the Nawiri project hence transited into moderate wasting faster than moderately wasted children transiting into normal or fully recovered. So this was actually considered a success in the management of wasting.

Table 15: Comparative trend in nutritional status of children 6-59 months

Indicator	Prevalence (%)			
	Baseline	Mid Term	End Term	KDHS 2014
Weight_for_Height	17.8%	6.0%	10.6%	4%
Moderate			3.8%	
Severe		0.5%	6.8%	
Height_for_age	20.3%	25.7%	22.0%	26%
Moderate	19.3%	19.0%	12.1%	
Severe		6.7%	10.1%	
Weight-for-age		12.6%	13.0%	11%
Moderate	20.3%	11.3%	7.5%	
Severe	7.1%	1.3%	5.5%	

3.2.5.1 Weight-for-height Scores (Wasted) for children aged 6-59 months

Wasting in children is an indication of acute under nutrition, usually as an outcome of inadequate food consumption or high frequencies of infectious diseases, especially diarrhea. Wasting therefore impairs the functioning of the immune system and leads to increased severity and predisposition to infectious diseases and an amplified possibility of death.

Weight for height measurements were taken and computed to determine the prevalence of wasting. A total of 10.60% of children 6 – 59 months developed global malnutrition, 3.8 moderately malnourished and 6.80 were severely malnourished. The overall prevalence of global malnutrition increased by 4.6% from the midterm findings. However, according to WHO cut-off values of between 10-14% reflects serious problem for public health significance. These could be attributed to reduced food access due to low food production that was as a result of severe drought that went on in the middle of the year 2018 that was under review, this coupled with strike by the health care workers did not auger well for the children, with the presence of the Nawiri project only global acute malnutrition had slight change from the mid-term readings but which were of no public health significance as indicated by the WHO cut off points. These results correlate with food coping strategies employed by the 87% of the households during extreme conditions for the survival of household members as discussed in 3.2.6.2.

Table 16: Prevalence of acute malnutrition based on (weight-for-height z-scores and/or oedema) by sex

	All n = 444	**Boys n = 241**	**Girls n = 203**
Prevalence of global malnutrition (<-2 z-score and/or oedema)	(47) 10.60% (8.1 - 13.8 95% C.I.)	(26) 10.80 % (7.5 - 15.3 95% C.I.)	(21) 10.30 % (6.9 - 15.3 95% C.I.)
Prevalence of moderate malnutrition (<-2 z-score and >=-3 z-score, no oedema) *Com of K/MK	(17) 3.80% (2.4 - 6.0 95% C.I.)	(7) 2.90 % (1.4 - 5.9 95% C.I.)	(10) 4.90 % (2.7 - 8.8 95% C.I.)
Prevalence of severe malnutrition (<-3 z-score and/or oedema)	(30) 6.80% (4.8 - 9.5 95% C.I.)	(19) 7.90 % (5.1 - 12.0 95% C.I.)	(11) 5.40 % (3.1 - 9.4 95% C.I.)

*The overall prevalence of oedema is 0.9 % n=4
K (Kwashiorkor and Marasmus Kwashiorkor

In another analysis, both genders contributed almost the same to the overall prevalence, boys at 10.80% and girls at 10.30% (Figure 4).

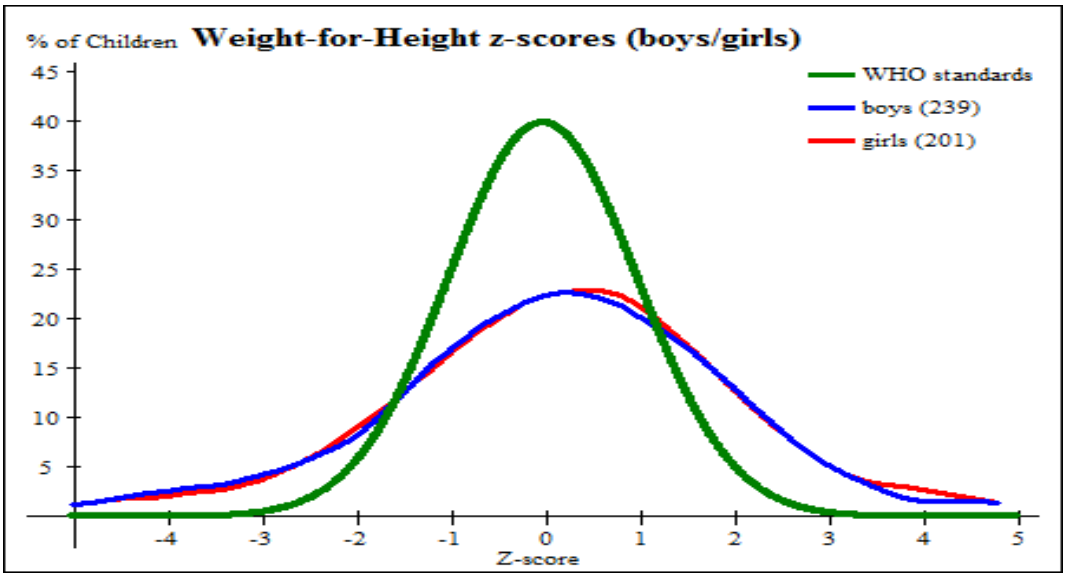

Figure 4: Weight-for-height z-score for children aged 6-59 months across gender

3.2.5.2 Prevalence of underweight (Weight-for-Age) for children aged 6 -59 months

Being underweight reflects many health concerns to a child such as inhibition of cognitive development and increased risk of death. It also deprives the health status of children later in life. According to WHO, underweight can reflect both stunting and wasting.

The findings in Table 17 demonstrated that 13.00% of children 6 – 59 months were underweight based on WAZ, 7.5% moderately underweight and 5.5% severely underweight. Whereas this outcome is a slight upsurge from the midterm prevalence by 0.4%, WHO categorizes cut-off values of 10-19% as medium prevalence.

Table 17: Prevalence of underweight for children aged 6-59 months based on weight-for-age z-scores by sex

	All n = 440	**Boys** n = 239	**Girls** n = 201
Prevalence of underweight (<-2 z-score)	(57) 13.00 % (10.1 - 16.4 95% C.I.)	(32) 13.40 % (9.6 - 18.3 95% C.I.)	(25) 12.40 % (8.6 - 17.7 95% C.I.)
Prevalence of moderate underweight (<-2 z-score and >=-3 z-score)	(33) 7.50 % (5.4 - 10.3 95% C.I.)	(17) 7.10 % (4.5 - 11.1 95% C.I.)	(16) 8.0 % (5.0 - 12.50 95% C.I.)
Prevalence of severe underweight (<-3 z-score)	(24) 5.50 % (3.7 - 8.0 95% C.I.)	(15) 6.30 % (3.8 - 10.1 95% C.I.)	(9) 4.50 % (2.4 - 8.3 95% C.I.)

*Underweight 13.00%

Observations established on the basis of gender portrayed that 13.40% of boys and 12.40% of girls were underweight (Figure 5).

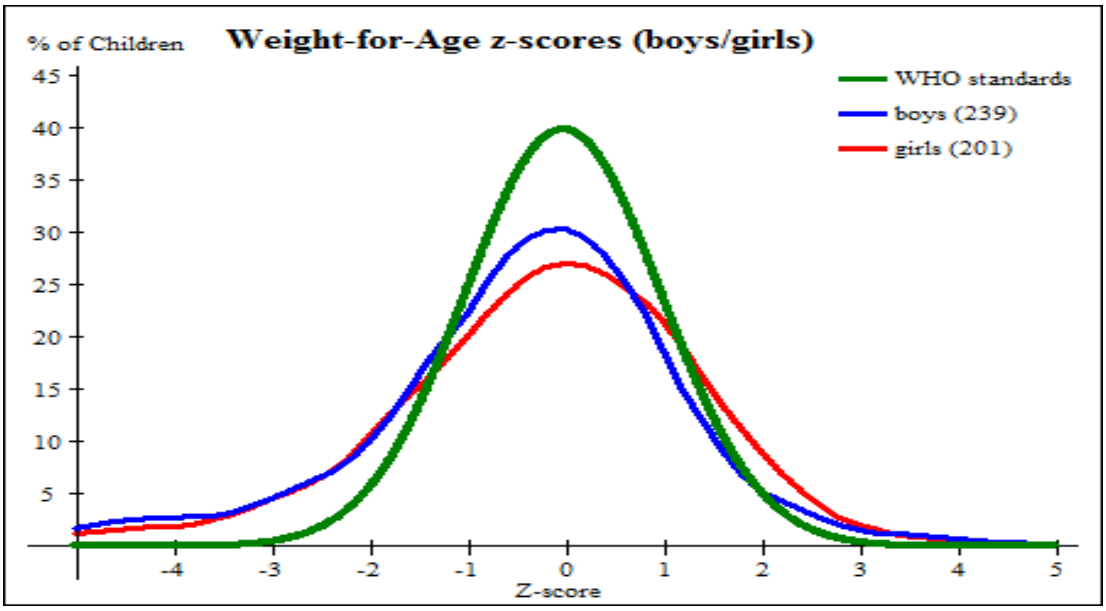

Figure 5: Weight-for-age z-scores for children 6-59 months across gender

3.2.5.3 Prevalence of stunting (Height-for-Age Scores) for children aged 6-59 months

Children below 5 years are classified as stunted when their height for age is greater than two standard deviations below the WHO Child Growth Standards. Stunting in the primary years of the life of a child has devastating implications to the growth and development of a child. Credible evidence associates stunting to poor cognitive development, retarded lineal growth, which then affects language and sensory abilities and therefore, poor performance in class and impaired motor functions. Although stunting at 22.0% prevalence from this assessment is lower than that of the midterm 25.7%, WHO silently classifies these cut offs as medium prevalence for public health significance.

Table 18: Prevalence of stunting for children 6-59 months based on height-for-age z-scores and by sex

	All n = 445	**Boys** n = 241	**Girls** n = 204
Prevalence of stunting (<-2 z-score)	(99) 22.20 % (18.6 - 26.3 95% C.I.)	(61) 25.30% (20.2 - 31.2 95% C.I.)	(38) 18.60 % (13.9 - 24.5 95% C.I.)
Prevalence of moderate stunting (<-2 z-score and >=-3 z-score)	(54) 12.10 % (9.4 - 15.5 95% C.I.)	(34) 14.10 % (10.3 - 19.1 95% C.I.)	(20) 9.80 % (6.4 - 14.7 95% C.I.)
Prevalence of severe stunting (<-3 z-score)	(45) 10.10 % (7.6 - 13.3 95% C.I.)	(27) 11.20 % (7.8 - 15.8 95% C.I.)	(18) 8.80 % (5.7 - 13.5 95% C.I.)

* Prevalence of stunting 22.00%

Analysis across age group showed that 25.3% of boys and 18.6% of girls were stunted.

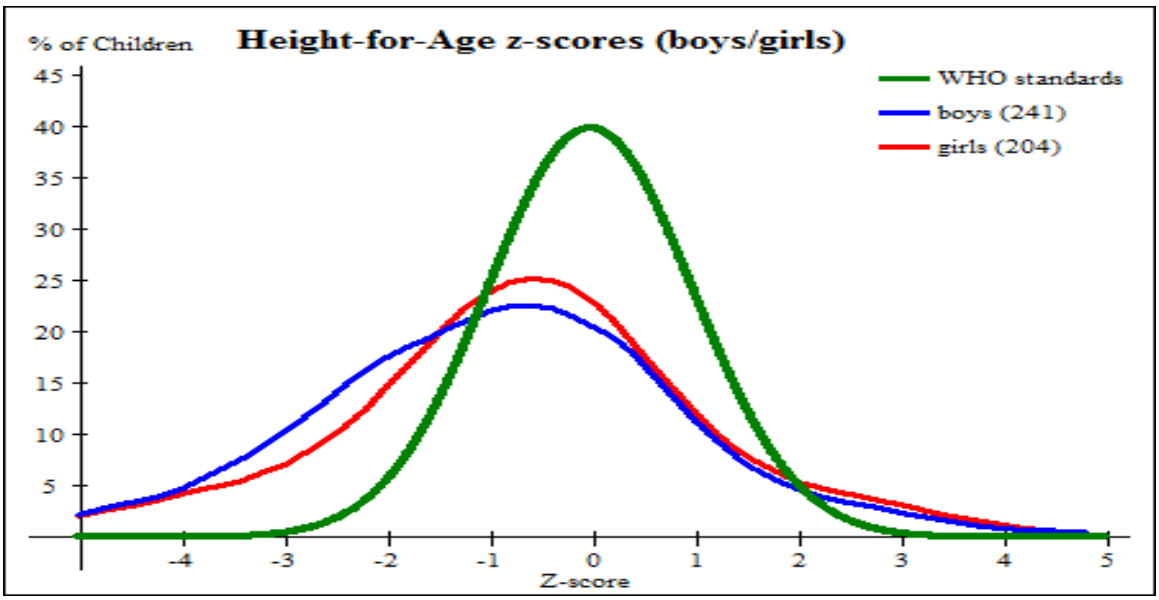

Figure 6: Height-for-age z-scores for children6-59 months across gender

3.2.5.4 Prevalence of overweight

Analysis was done to find out the proportion of children 6 – 59 months who were overweight. Table 19 demonstrates that 13.10% of children 6 – 59 months were overweight. Among these group, 5.90% of the children 6 – 59 months recorded >3 z scores against WAZ.

Table 19: Prevalence of overweight based on weight-for-height cut off's and by sex (no oedema)

	All n = 444	**Boys** n = 241	**Girls** n = 203
Prevalence of overweight (WHZ > 2)	(58) 13.10 % (10.2 - 16.5 95% C.I.)	(34) 14.10 % (10.3 - 19.1 95% C.I.)	(24) 11.80 % (8.1 - 17.0 95% C.I.)
Prevalence of severe overweight (WHZ > 3)	(26) 5.90 % (4.0 - 8.4 95% C.I.)	(13) 5.40% (3.2 - 9.0 95% C.I.)	(13) 6.40 % (3.8 - 10.6 95% C.I.)

3.2.6 Food security and livelihoods

3.2.6.1 Dietary Diversity

Dietary Diversity Score for a household (DDS) is an acceptable indicator that quantifies diet for a household. DD actually reflects nutrient adequacy for people living within a household. Dietary diversity is a proven way to alleviate diseases, prolong longevity of life and improve on

the nutritional status of a household as a whole. This domain was manifested by doing a simple count of the food consumed 7 days prior to the day of interview. Likewise to the mid-term, cereals and cereal products were focal foods consumed by 94.8% of the households in the study area, followed by dark green leafy vegetables (93.1%), fish (83.8%) and Vitamin A rich foods (69.8%). Organ meat especially from kidney and liver were the least food taken (12.4%). Findings of this study presents a slight deviation from the previous where 95.3% consumed cereal products, 75% consumed vitamin A rich foods and 94.7% of the households took dark green leafy vegetables.

3.2.6.2 Household Coping strategies

End term evaluation assessed household food coping strategies and revealed that majority households (87.2%) depended on less preferred and less expensive foods when they did not have enough food or money to buy food. This was followed by limiting portion size at mealtimes (60.4%), reducing the number of meals eaten in a day (55.1%). Restricting consumption by adults in order for small children to eat was the least preferred strategy (44.4%).

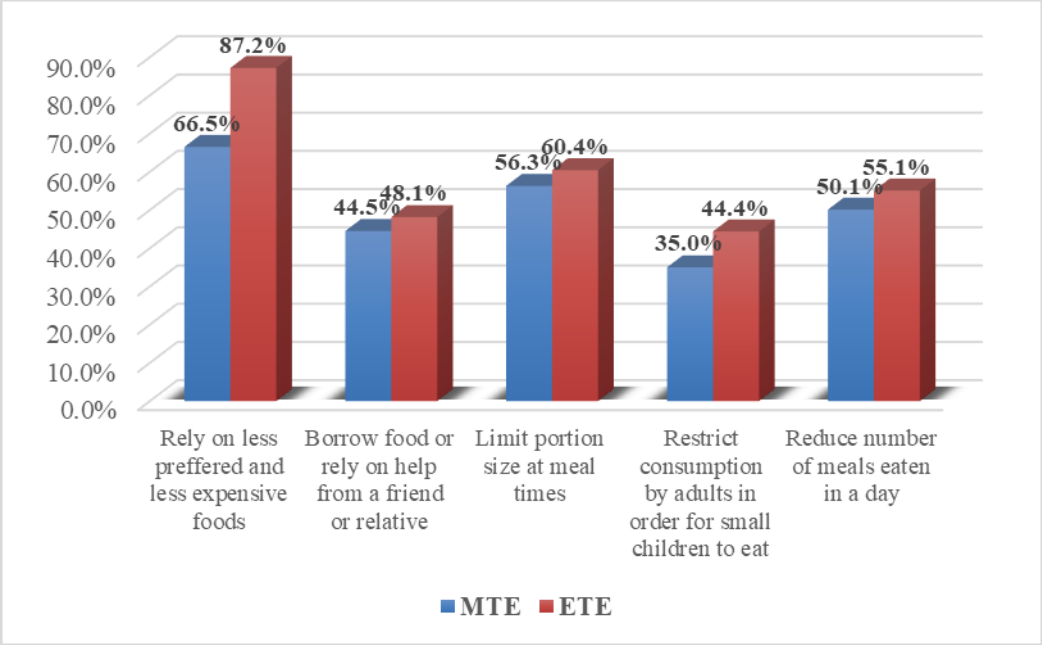

Figure 7: Household Coping Strategies

3.2.7 Water Sanitation and Hygiene Practices (WASH)

Good hygiene and sanitation practices correlate with better health. Water is a necessity for human life. Access and availability of clean water, practice of good sanitation and hygiene is a safety measure against waterborne and associated diseases (Dangour, Watson, Cumming, Boisson, Che, Velleman & Uauy, 2013).

3.2.7.1 Household sources of drinking water

Majority of the respondents of this study treated water before drinking 73.7% (public tapped water, protected spring, well water, bore-hole and truck water). The remaining 26.3% used untreated from surface water, unprotected springs and unprotected dug wells. This shows an

increase of 1.7% from the midterm evaluation.

3.2.7.2 Water treatment Methods

Water treatment on the other hand is a precautionary measure of the safety of water before intake, cooking or any other use for human consumption. Whereas 26.3% did not treat their water before drinking, of the 73.7% who treated, a majority treated with chlorine 70.2%, 15.2% boiled and 14.6% left the water to stand, used sedimentation or used water filters.

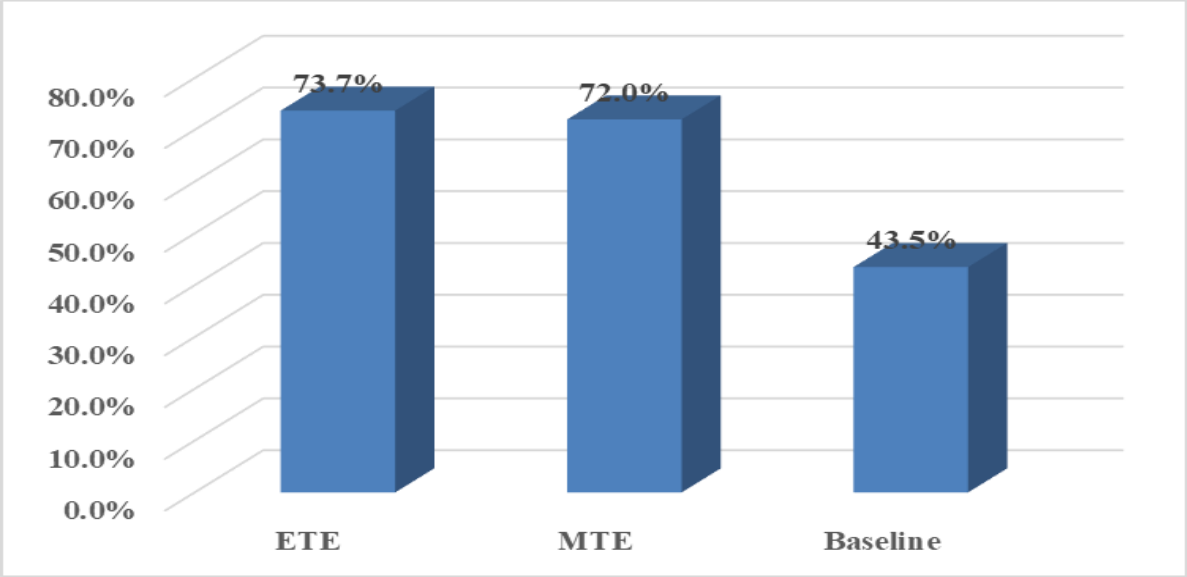

Figure 8: Use of safe treated water before drinking

3.2.7.3 Hand washing practices

Good hygiene practices prevent diseases and infections. It is important to adopt a habit of washing hands on, before or after handling any commodity that may pose risk to infection. This survey established that 47.3% of the respondents had no specific place where they washed hands, 20.2% washed hands elsewhere in the yard, 15.2% inside/near toilet, 14.3% inside kitchen/cooking place and 3.1% outside the yard. At these junctions, soap 63.3% was the main cleansing agent followed ash 5.0%, detergent 1.7% and 30% none of the mentioned.

3.2.7.4 Latrine coverage and usage

Human waste is a carrier of many pathogenic microorganisms. Proper disposal of human feces prevents water, food borne, air pollution and associated illnesses (Brown, Joe, Cairncross & Ensink, 2013). End term evaluation revealed that 94.6% of the survey participants have access to a toilet. This represents a positive trend in availability of a latrine from the baseline 87.5% and 91% at midterm evaluation. Again most 87.9% of the households primarily used traditional latrines and 12.5% used ventilated improved toilets, buckets or flush toilets.

3.3 Expected Result1: Political commitment and good nutrition governance in the Siaya County are strengthened and vulnerable groups in decision-making processes integrated

This result focused on engaging political actors in a dialogue on MIYCN and leveraging their action for increasing resource allocation that prioritises MIYCN and changing negative social norms that discriminate malnourished and vulnerable men, women, boys and girls. The evaluation results are organized by the three indicators: (1) County assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging; (2) County budgetary allocation for MIYCN services; and (3) Costed County Nutrition Strategic Plan developed and Nutrition Action Plan implemented. The evaluation findings show that all the targets for the three indicators were either achieved or surpassed. This can be attributed to the participation of the County Nutritionist in the project design, inception, implementation, monitoring and evaluation. This factor enhanced high level engagement with the executive including the Governor, County Executive Committee (CECs) members, Directors and members of county Assembly (MCAs). The close working relationship of the project leadership with the County and Sub-county health management teams ensured that project interventions were in sync with the county's strategic direction on nutrition or influenced the strategic direction in line with the national policies on Nutrition. Each of the indicators are discussed individually further down in order of their numbers.

3.3.1 County assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging

R1-Indicator 1:	Number of county assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging.
Achievement:	20 executive leaders (Governor, CEC- Health, Chief Officer –health and Health Director, Nutrition, Education, Water and Agriculture) and 54 MCAs have been engaged

The evaluation confirmed that there was high level engagement of the political class beginning with the Governor. The *Nawiri* Project had engaged the Governor and the office of the Governor a number of times. This resulted in the County's First Lady becoming a nutrition champion for Siaya County. A total of 20 executive members were engaged throughout the life of the project including the Governor, CECs and directors of health, nutrition, agriculture and education. Further, the political class were also engaged at both local community and county levels. *Nawiri* project team have engaged 54 Members of County Assembly (MCAs) at the ward level where the MCAs were engaged to champion the nutrition. At the community level and ward levels, the CHVs were able to advocate for and engage political leaders on nutrition issues. The project therefore reached 74 political class out of the expected 113. The KII with the County nutritionist who is the convenor of the county Advocacy technical working group

reveals continuous effort planned with Amref wing of the EU project for continuity of the work. Amref Stawisha project is a Nawiri sister project whose work spanned for 4 years with a closeout planned for Dec 2019.The political leaders also participated in the celebrations of nutrition achievements. The third year had the most engagements where the project reached 16 representatives of the Executive drawn from the Departments of Health, Nutrition, Education, Water, and Agriculture; and 30 political leaders to advocate for increased budgetary allocation for nutrition[12]. The participation of political class was in the graduation ceremony of M2Ms was confirmed in interviews with SCHMTs. Political engagement of MCAs especially, those in the health committee has led to a stage of drafting a MIYCN Bill which is due for presentation in the County Assembly as stated by the MCA and chair of health committee in the Siaya County Assembly interviewed.

> "NAWIRI has really worked on enhancing maternal and child nutrition governance at county level. But without a bill in place, they cannot have other policies. That is why we are working on the Health Bill now for it to be sustainable…..In Siaya we have one general budget for health. We don't have a line budget for MIYCN. That's why I said that we need to work on a policy that will take care of resources for *Nutrition*." **KII with MCA, Chair Health Committee**

3.3.2 County budgetary allocation for MIYCN services

R1-Indicator 2:	Proportion increase in county budgetary allocation for MIYCN services.
Achievement:	The proportion increase at baseline was 0.08%. The proposed budgetary allocations towards nutrition were given to be 3million, up from 1million Kenya shillings in 2017 being 0.24% of the budget and 5 million in 2018 being 0.42%.

The evaluation established that there was increased budget allocation for MIYCN. The County Director of Nutrition revealed that before Nawiri Project, the county only allocated budget for human resource for nutrition with no amount to nutrition commodities. As a consequence of advocacy, the County Government allocated 3 million out of 1.2 billion being 0.24% of the budget in 2017 and 5 million in 2018 being 0.42%. This shows steady nutrition budget increase during the project life. It is noteworthy that budgets are done in June and the evaluation was done in April 2019. From key informant interviews with county officials, it is expected that the next budget will continue to rise. On the other hand the political environment was not conducive as a number of county committees were constituted late, thus affecting the budgeting process. Although there was increased budget allocation, the bottleneck operationalizing the budget is that nutrition is a unit within the health department and hence has no budget code on its own. This makes the unit have little control on finances and often end up using much less

[12] Nawiri Project Year 3 Quarter 3 interim Report

than the allocation. However, as a result of advocacy, there is a health bill being developed by the health committee which proposes assignment of budget code to the Nutrition unit, which will then provide them with some level of autonomy in allocating nutrition resources to the much needed areas.

3.3.3 Costed County Nutrition Strategic Plan developed and Nutrition Action Plan implemented

R1-Indicator 3:	Costed County Nutrition Strategic Plan developed and Nutrition Action Plan implemented
Achievement:	CNAP2018 -2022 was developed, launched and further CCNSP was also developed.

The evaluation found that the CNAP was developed and launched. The support of Nawiri project in the development of CNAP and CCNSP was a very important milestone as it was the commencement of developing County Nutrition budget. This budgeting enhanced the capacity of the department to develop the budget based programming by the National Government. As a result of advocacy for nutrition, it is now pillar number one in the 2018-2022 Siaya County Integrated Strategic Plan (CIDP). The CNAP was used as a reference in development and review of CIDP, AWP 1 and 2 and used as an advocacy tool in developing advocacy briefs for nutrition investment. This shows that the advocacy was effective.

> "Yes we have a costed County nutrition strategic plan and a nutrition action plan which were massively and majorly supported by Nawiri. We have the document in place. The document is costed and it's what is guiding the implementation of all the nutrition interventions of the County", **KII with CHMT.**

3.4 Expected Result 2: CSOs and state actors have greater capacity (including human capacity) and improved skills and systems to respond to maternal and child nutrition needs in Siaya County

This section focussed on improvement of the technical and management capacity of CSOs and state health actors to provide quality MIYCN services. This cluster of activities were expected to reinforce the political commitment generated through Expected Result 1 and translating it into improved resources for CSOs and state health actors by providing training, mentoring and coaching to develop their capacities. The three indicators evaluated in included: 1) Number of health workers and CHV trained on relevant nutrition guidelines and SOPs; 2) Proportion of health workers and CHV workers trained on MIYCN; and 3) Proportion of health facilities experiencing no stock outs of essential nutrition commodities in past 3 months.

3.4.1 Health workers trained on relevant nutrition guidelines and SOPs

R2-Indicator 1:	Number of health workers trained on relevant nutrition guidelines.
Achievement:	A total of 36 health workers were trained on relevant nutrition guidelines among them are 23 males and 13 females.

The evaluation team confirmed that health workers were trained as planned by the project in 2017. Those trained included nurses, clinical officers, nutritionists and community health assistants. Some of these trained were health facility in-charges, service providers in the maternal child health (MCH) departments and Community Health Assistant (CHAs) in charge of Community health volunteers (CHVs). The choice of health workers trained on the guidelines or standard operating procedures (SOPs) was found to be relevant and effective in that they were able to conduct continuous medical education to the relevant teams given their roles in the facilities and the community.

3.4.2 Health workers and CHVs workers trained on MIYCN

R2-Indicator 2:	Number of health workers and CHVs workers trained on MIYCN.
Achievement:	A total of 38 (21 females and 17 males) health workers were trained as MIYCN TOTs against a baseline value of 5 people trained on MIYCN. This team further trained 3335 health workers through CME and 1054 CHVs

The evaluation team confirmed that 3335 health workers and 1054 community health volunteers (CHVs) were trained on nutrition. The CHVs were trained for 3 days followed by on the on the job training during supervision of their work in the community and annual refresher trainings. The CHVs reported that they were trained on nutrition specifically mentioning exclusive breast feeding, food for pregnant women and young children. They were also trained to screen children in the community households for malnutrition using the Mid-Upper Arm Circumference (MUAC) tapes and referring those malnourished to health facilities for treatment. Trend analysis of DHIS 2 data on referral of children below 5 years during the project life in Siaya show an upward trend with a dip in 2017 which could m have been due to the nurses strike. (Figure 9) In our opinion, this is an effective training given that this saw increased tracing and referral of malnourished children from Community Units (CUs) to health facilities and form health facilities to CUs.

> "We were taken for trainings to have knowledge on how to take good care of our children. They were also conducting follow ups to get to know how we do our work and also gave us refresher trainings where necessary", **CHVs.**

> "We were doing follow ups on pregnant women and under five children in the community and we advise them on the type of food they should eat. We were also looking for malnourished children in the households….. We were also helping mothers to plant kitchen gardens to help then when they need vegetables", **CHVs.**

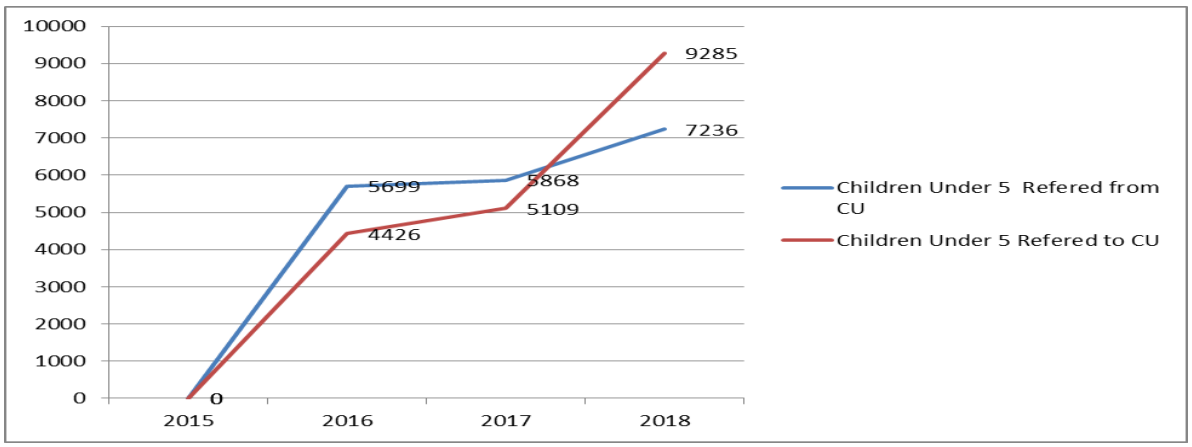

Figure 9: Trend analysis on referral of children under 5 years in Siaya County (Source DHIS2 Retrieved on May 6, 2019)

3.4.3 Health facilities reporting no stock out

R2-Indicator 3:	Proportion of health facilities experiencing no stock outs of essential nutrition commodities in past 3 months
Achievement:	The proportion of health facilities reporting no stock outs increased from 50% at baseline to 80% at MTE and 95% at ETE.

The proportion of health facilities experiencing no stock outs were estimated be above 95% based on discussions with the sub-county health management team members (SCHMT) and health facility in-charges interviewed. It is noteworthy that none of the nine randomly selected health facilities out of the 21 facilities in the project reported having had stock outs. The few cases of stock outs were attributed to poor procurement system where commodities are not distributed to the health facilities based on the orders from the facilities they received whatever the supplier brought. This seemed to be an issue the SCHMT had little control over. The other reason was due to late distribution of medical commodities in the last two quarters of 2018 from July to December. The commodities were received in January 2019. The health facilities therefore used the stocks they had plus additional support from Nawiri project and Malezi bora.

> "We have had relatively stable stock on iron and folic acid. However, there were some stock outs in 2018 which we attributed to the procurement system. There was delay in distributing commodities. But this affected just a few facilities….. may be less than 5%", **SCHMT Member.**

3.5 Expected Result 3: Targeted communities are informed and empowered to demand, access and utilise quality maternal and child nutrition services

This result focused on empowering men and women, boys and girls to demand, access, and utilize quality MIYCN services. Political commitment and capacity to provide quality MIYCN services alone is not sufficient to reduce malnutrition. Men and women, boys and girls were to

be supported to hold authorities accountable and actively claim their rights to these services. The action had six indicators: 1) percentage increase of pregnant women who take iron-folic acid supplements during pregnancy; 2) percentage increase of children under 6 months who are breastfed exclusively; 3) percentage increase of children aged 6-59 months receiving Vitamin A supplementation twice a year: 4) percentage increase of children under 5 years with diarrhea who are treated with zinc supplements; 5) percentage increase of male and female final beneficiaries being able to name at least three benefits of healthy nutrition practices; and 6) proportion of final beneficiaries expressing positive change in gender attitudes for MIYCN. The status of each indicator is evaluated below after the presentation of maternal and newborn characteristics.

3.5.1 Distribution of Maternal and New-Born Care Characteristics

The study further assessed critical maternal and new born care practices. It appeared that majority of the mothers were taught on breastfeeding 95.56%, dieting 92.14% and 92.49% were given iron and folic acid supplements during the antenatal care clinic visits. As a result, 64.7% mothers exclusively breastfed their children to 6 months. Coverage of vitamin A intake among children below 5 years was 81.18%. Further findings illustrated that 89.25% had immunization booklets with 84.62% having the growth chart of the children plotted. Table 20 illustrates the dispersal of maternal and new born care parameters.

Table 20: Dispersal of maternal and newborn care parameters

Characteristic	Frequency	Percent (%)
Information given on breastfeeding during ANC (n=457)	423	92.56
Yes	33	7.22
No	1	0.22
Don't know		
Information given on dieting during pregnancy (n=458)	422	92.14
Yes	35	7.4
No	1	0.2
Don't know		
Information on IFAS taken during pregnancy (n=453)		
Yes	419	92.49
No	34	7.51
Place of giving birth (n=459)		
Health facility	422	91.94
Other	37	8.06
Coverage of Vitamin A intake for children 6-59 months (n=457)		
Yes	371	81.18
No	76	16.63
Don't know	10	2.19

Characteristic	Frequency	Percent (%)
Vitamin A intake for children 6-59 months in the last 1 year (n=426)		
Once	178	41.78
Twice	121	28.40
Thrice	34	7.99
Don't know	93	21.83
Deworming for children in the past one year (n=448)		
Yes	181	40.40
No	253	56.47
Don't know	14	3.13
Growth chart of the child plotted (n=455)		
Yes	382	84.62
No	73	15.38
Presence of immunization card/booklet (n=456)		
Yes	407	89.25
No	47	10.31
Don't know	2	0.44
DTP Vaccination (n=456)		
Yes	435	95.39
No	20	4.39
Don't know	1	0.22
Measles vaccination (n=456)		
Yes	343	75.22
No	113	24.78
TB vaccine (BCG scar) (n=456)		
Yes	452	99.12
No	4	0.88
Diarrhea in the last two weeks (n=456)	86	18.86
Yes	369	80.92
No	1	0.22
Don't know		
Breastfeeding up to 6 months (n=453)		
Yes	451	99.56
No	2	0.44

3.5.2 Iron and Folic Acid (IFAS) Intake during Pregnancy

Micronutrients such as iron and folic acid are very essential during the gestation period. A deficiency or an imbalance in intake during this moment negatively affects growth and development of both the fetus and the mother (Adegoke & Sambo, 2013). In Kenya, the use of IFAS and the consequent benefits has been below average over years (KDHS, 2014). This section establishes the consistency and use of IFAS and the associated influencers in Siaya County.

The outcome proved that 92.5% of pregnant women matched to the 93.7% from MTE were taking iron and folic acid supplements during the pregnancy period. This demonstrates a slight decline of 1.2% from the MTE spell which could have been due to industrial action by the health workers in the year 2018 that left some facilities partially closed and since the services had to be accessed in the facilities it must have it difficult for the pregnant mothers to access the IFAS hence the slight drop in the Uptake. Chi square analysis was done to establish whether demographic factors influence IFAS intake presented in Table 9. Religion (χ^2, 10 = 15.74, p-value = 0.000), area under investigation ($\chi^2$4 = 34.64, p-value = 0.000), level of education (χ^2, 12 = 21.67, p-value = 0.041), and the marital status (χ^2, 8 = 16.15, p-value = 0.041), significantly influenced intake of the IFAS intake during pregnancy. The main source of income was the only variable with no significant relationship in this domain.

Table 21: Correlation of demographics and Iron/folate supplementation in pregnancy

Variables	**Uptake of IFAS tablets during pregnancy**				χ^2	**df**	**P-value**
	Yes		**No**				
	N	**%**	**n**	**%**			
Sub County	144	34.4%	6	17.7%			
Bondo	150	35.8%	3	8.8%	34.64	4	.0.000*
Rarieda	125	29.8%	25	73.5%			
Gem							
Marital status	51	12.9%	6	17.6%			
Single/living alone	348	83.1%	27	79.4%			
Married	5	1.2%	1	3.0%	16.15	8	.0.040*
Divorced	15	2.8%	0	0.0%			
Windowed							
Level of education	172	51.0%	12	36.4%			
Completed primary	12	3.6%	12	36.4%			
Primary not completed	60	17.9%	4	12.1%			
Completed secondary	78	23.1%	5	15.1%	21.67	12	.0.041*
Secondary not completed	15	4.4%	0	0%			
Tertiary							
Main source of income	97	23.4%	9	27.3%			
No reliable source of income	13	3.1%	0	0%			
Salaried employment	123	29.7%	11	33.3%			
Casual laborer	113	27.2%	5	15.2%	16.933	14	.0.260
Business	69	16.6%	8	24.2%			
Crop farming							
Religion	312	74.5%	29	85.3%			
Protestants	73	17.4%	2	5.9%	15.74	10	.0.000*
Roman Catholic	34	8.1%	3	8.8%			
Other religions							

*Significant at P < 0.05

After computing the test across the age groups and the intake of IFAS, no significant relationship was recognized as presented in Table 22.

Table 22: Relationship between age (0-6 Months) and IFAS intake

Age Classification	Yes		No				
	N	%	n	%	X^2	df	p-value
0-6 months	417	92.5%	34	34%	52.87	57	.0.631

*Significant at P < 0.05

3.5.3 Breastfeeding and Complimentary Feeding Practices

Proper feeding practices during the early stages of life play a critical role in growth and development of a child. The respondents of this survey were interviewed on the nature of feeding practices initiated soon after child birth.

3.5.3.1 Initiation of breastfeeding

The interest of this domain was to establish the time taken to initiate breastfeeding soon after child birth. The findings in figure 10 depicted that 88.5% of the mothers initiated breastfeeding within one hour upon delivery. This is an improvement from the MTE that gave 82% and consistent with the initiation recommendations soon after birth. This success enhanced through extensive and intensive initiatives by Nawiri project including training of health workers on MIYCN through CMEs, community outreaches conducted by the health workers and CHVs, teaching pregnant women in Mother to mother support groups and Father or male involvement on to matters of breast feeding,

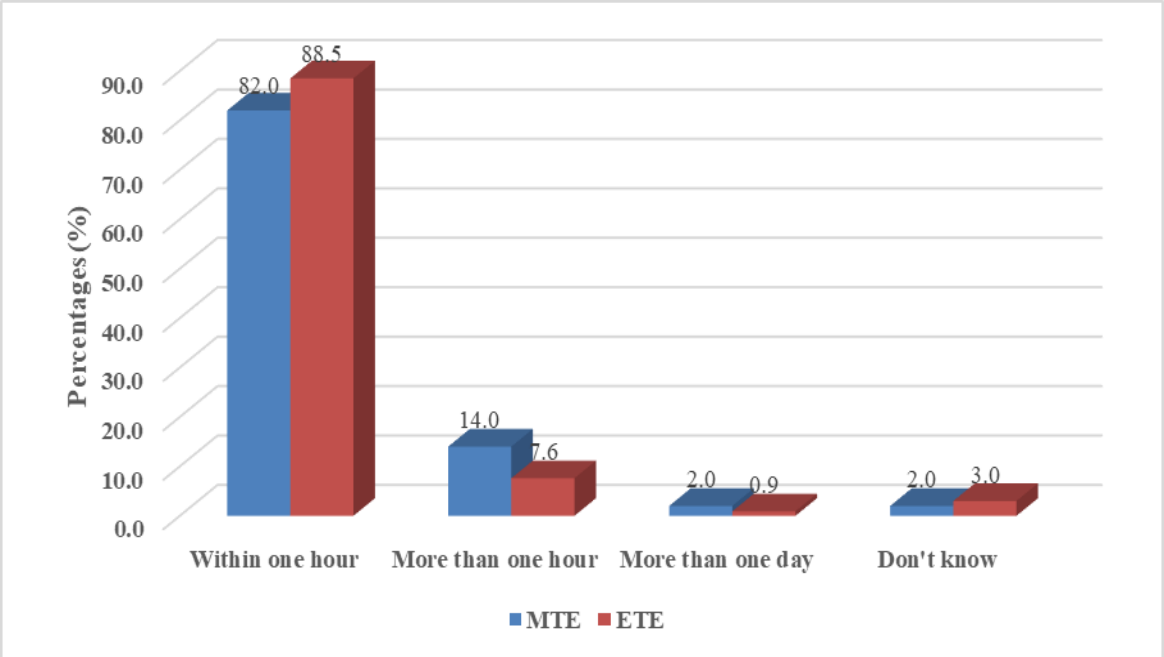

Figure 10: Initiation of breastfeeding

3.5.3.2 Exclusive breastfeeding for 6 months

R3-Indicator 2:	Percentage increase of children under 6 months who are breastfed exclusively.
Achievement:	Children under 6 months who were exclusively breastfed increased from baseline value of 37.5% to 57.8% at mid-term and 64.7% at end term evaluation

The WHO recommends that children 0-6 months should be exclusively breastfeed. Moreover, breastfeeding should continue up to 2 years. This is important because the mother's milk is rich in nutrients, protective elements, enzymes and growth factors that the young one needs. After 6 months, the nutrition content of the breast milk depreciates. Weaning comes in to replace these nutrients. When effectively initiated and in the required consistency, complimentary feeding has confirmed proper growth and development of a child within the first 24 months (Kimani-Murage, Madise, Fotso, Kyobutungi, Mutua, Gitau, & Yatich, 2011).

Findings in Figure 4 disclosed that 64.7% of children 6-59 months were exclusively breastfeed for the first 6 months. This represents an increment in provision of this domain from baseline 37.5%, mid-term 57.8% and an improvement of the KDHS 2014 estimates of 61% (Figure 11). A number of factors must have driven these achievements, from the chi-square test presented in table 23 level of education played a critical role on exclusive breast feeding, the more the mother was educated , the higher the probability that she would practice exclusive breast feeding. In addition to this more religious mothers had higher chances of practicing exclusive breastfeeding as well.

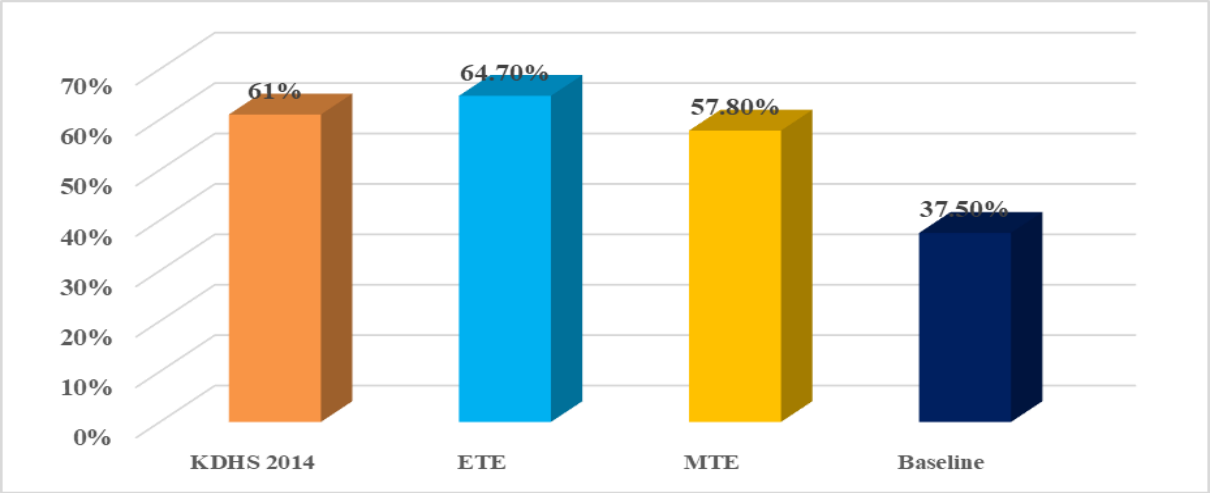

Figure 11: Percentages of exclusive breastfeeding for 0-6 months

Table 23 represents a chi-square test between demographic variables and exclusive breastfeeding. A statistical significant relationship was only realized between the level of education and exclusive breastfeeding (χ^2, 12 = 19.69, p-value = 0.000).

Table 23: Relationship between Demographic Parameters and Exclusive Breast Feeding

Variable	Exclusive breastfeeding for 6 months				x^2	df	p-value
	Yes		No				
	n	%	n	%			
Sub County							
Bondo	111	37.8%	39	24.7%	12.43	4	.0.140
Rarieda	92	31.3%	60	37.9%			
Gem	91	30.9%	59	37.4%			
Marital status							
Single/living alone	38	12.9%	18	11.4%			
Married	243	82.7%	132	83.5%	15.29	8	.0.054
Divorced	4	1.4%	2	1.3%			
Widowed	9	3.0%	6	3.8%			
Level of education							
Completed primary	112	38.2%	72	45.6%			
Primary not completed	68	23.2%	37	23.4%	19.69	12	.0.000*
Completed secondary	40	13.7%	24	15.2%			
Secondary not completed	63	21.5%	20	12.7%			
Tertiary	10	3.4%	5	3.1%			
Main source of income							
No reliable source of income	67	23.2%	38	24.0%			
Salaried employment	6	2.0%	7	4.4%	19.91	14	.0.133
Casual laborer	86	29.8%	48	30.4%			
Business	83	28.7%	35	22.1%			
Crop farming	47	16.3%	30	19.1%			
Religion							
Protestants	222	74.2%	118	74.7%	17.99	10	.0.055
Roman Catholic	49	16.4%	26	16.5%			
Other religions	28	9.4%	14	8.8%			

*Significant at P < 0.05

Further analysis in Table 24 established a statistically level of significance between age and whether or not exclusive breastfeeding was done ($\chi^{2,}$ 114 = 275.88, p-value = .0.000).

Table 24: Relationship between age (0-6 Months) and exclusive breastfeeding

Age Classification	Yes		No				
	n	%	n	%	x^2	df	p-value
6-59 months	292	64.7%%	158	35.3%	275.88	114	.0.000*

*Significant at P < 0.05

3.5.4 Vitamin A supplementation Coverage for Children of ages 6-59 months

R3-Indicator 3:	Percentage increase of children aged 6-59 months receiving Vitamin A supplementation twice a year.
Achievement:	Percent of children aged 6-29 months who received Vitamin A supplementation twice in 2018 was 36.39 at ETE down from 46.0% at MTE in 2017 and 36.45% at baseline in 2016

Vitamin A supplementation (VAS) is a public health intervention to curb vitamin A deficiency among children 6 – 59 months. Most countries have integrated this strategy in the child growth evaluation practices. This study sought to establish coverage of vitamin A intake in Siaya County (WHO, 2003).

Findings from this study indicated that 81.18% of children 6-59 months received vitamin A. Within the last one year 38.6% received vitamin A intake once, 26.2% received twice and 7.4% received thrice while 20.2% could not tell whether or not the child received vitamin A. The cumulative percentage of children who received vitamin A supplementation twice upon investigation is 36.39% which is below the mid-term evaluation of 46.0%. The ETE results show a reduction of 8.3% from MTE. This decline in number of children who received vitamin A supplementation can be attributed to the protracted industrial strike by the health workers in the year 2018 that made the services for vitamin supplementation unavailable for the children since the health facilities were partially closed. Additionally, the change in school calendar that increased the holiday period for children at ECD reduced the access to school where some children were to be provided with vitamin A supplementation.

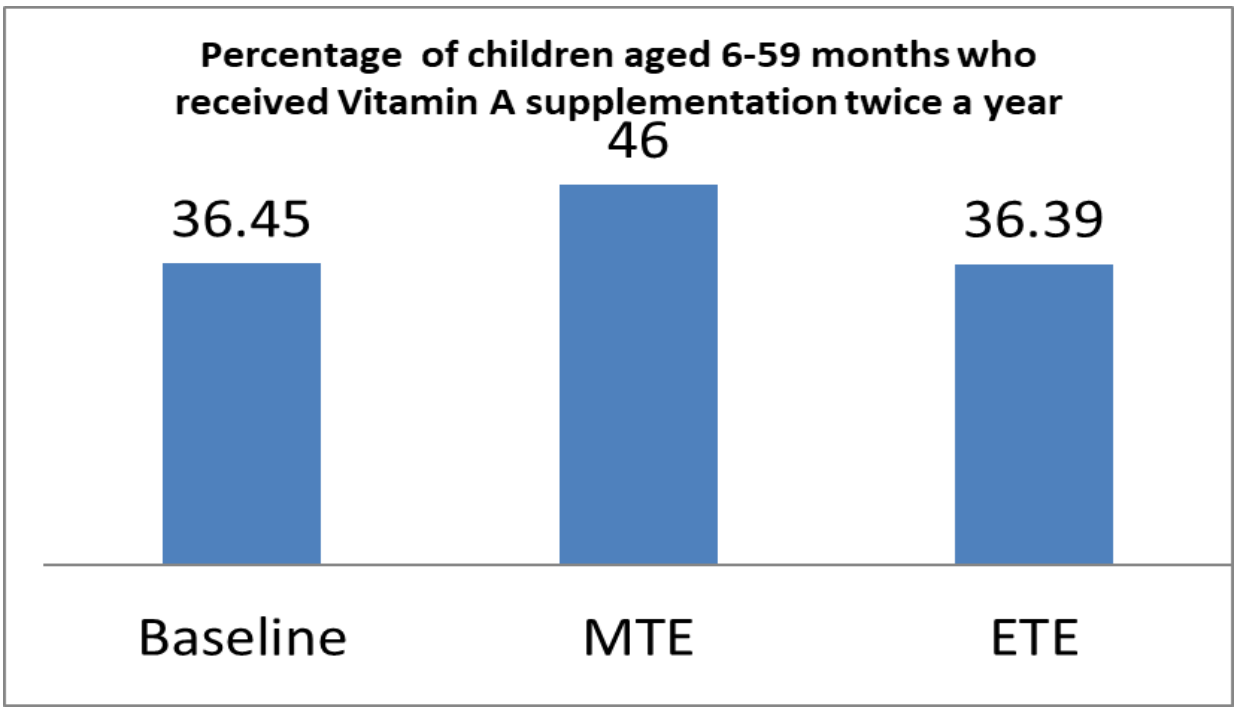

Figure 12: Percentages of Children 6-59 months who received Vitamin A supplements twice a year

On running the test of association between vitamin A supplementation and demographic factors, a statistical significant relationship was realized between the following variables; Sub-county ($\chi^{2,}$ 8 = 18.84, p-value= .0.016) and marital status ($\chi^{2,}$ 16 = 27.59, p-value= .0.035). Married women reported higher intake of vitamin A 79.2% once and 89.2% twice. In Bondo, 42.1% of children received vitamin A supplementation two times in 2018 shown in Table 25.

Table 25: Demographic factors associated with Vitamin A supplementation

Variable	Vitamin A supplementation				x^2	df	p-value
	Once		Twice				
	n	%	N	%			
Sub County							
Bondo	52	29.2%	51	42.1%	18.84	8	.0.016*
Rarieda	57	32.0%	39	32.2%			
Gem	69	38.8%	31	25.7%			
Marital status							
Single/living alone	31	17.4%	9	7.4%			
Married	141	79.2%	108	89.2%	27.59	16	.0.035*
Divorced	2	1.1%	2	1.7%			
Windowed	4	2.3%	2	1.7%			
Level of education							
Completed primary	71	41.5%	45	37.2%			
Primary not completed	39	22.8%	30	24.8%	26.35	24	.0.336
Completed secondary	22	12.8%	23	19.0%			
Secondary not completed	37	21.6%	21	17.3%			
Tertiary	2	1.9%	2	1.7%			
Main source of income							
No reliable source of income	38	21.7%	29	23.9%			
Salaried employment	2	1.1%	5	4.2%	34.58	28	0.183
Casual laborer	62	35.4%	31	25.6%			
Business	36	20.6%	35	28.9%			
Crop farming	37	21.2%	21	17.4%			
Religion							
Protestants	138	77.5%	83	75.4%	8.85	20	.0.985
Roman Catholic	27	15.1%	23	20.9%			
Other religions	13	7.4%	7	3.7%			

*Significant at P < 0.05

3.5.5 Children under 5 Years with Diarrhea Treated With Zinc Supplements

R3-Indicator 4:	Percentage increase of children under 5 years with diarrhoea who are treated with zinc supplements.
Achievement:	15.8% of the mothers of children under 5 years with diarrhea reported that they gave their children zinc supplements compared to 11.9% at midterm and baseline value of 13.1%

Poor nutrition status is linked to intensified duration of diarrhea (Brown, 2003). Symptoms exhibited such as mal-absorption, lack of appetite, frequent episodes of vomits, faster transit time greatly impact on the nutritional status of an individual when diarrhea occurs. Again, poor sanitation and hygiene practices such as unhygienic weaning, drinking of untreated water, and inappropriate disposal of feces, failure to wash hands on/before or after handling food or use of toilet are some of the transmission mechanisms of diarrhea. Diarrhea is known to kill through dehydration of the body. Essential salts and fluids are lost leading to an imbalance of osmotic pressure. Without prompt replacement, death is usually inevitable.

3.5.5.1 Prevalence of Diarrhea among Children under 5 Years

The overall prevalence of diarrhea in Siaya County was 19% *(n = 86) as shown in Figure 13*. This emanated after 81% of the responses revealing that a larger percentage *(n = 369)* of the children in Siaya had not experienced passing of loose bowel in the last two weeks.

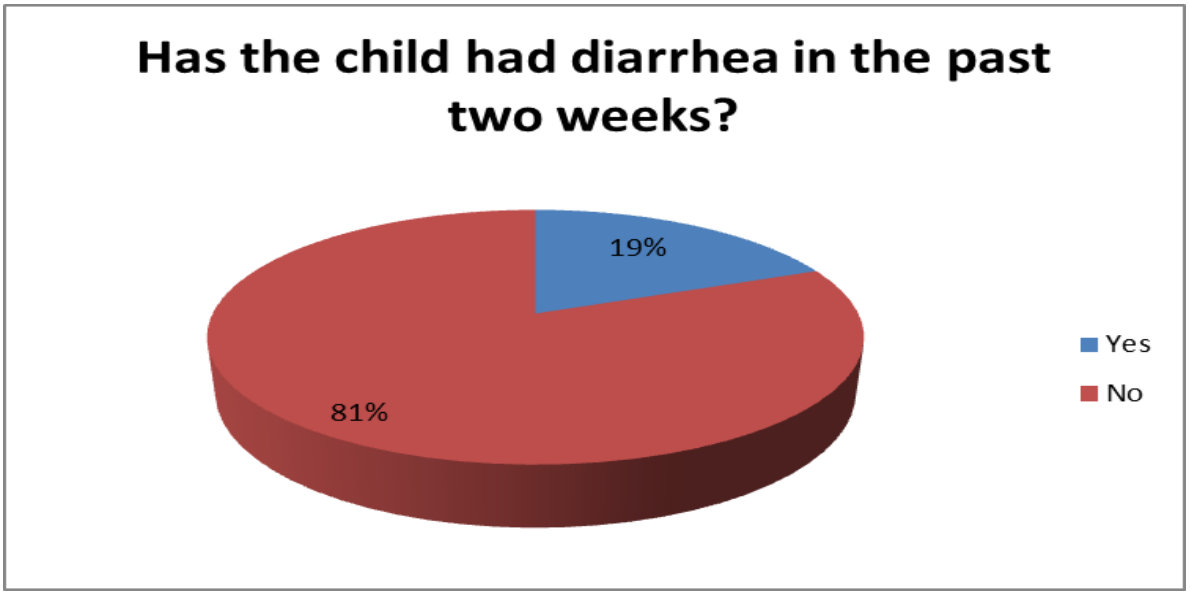

Figure 13: Prevalence of Diarrhea among children below 5 years in the past two weeks

It is noteworthy that majority of the survey respondents treated water before drinking at 73.7%, 94.6% had access to toilets, 87.9% primarily used traditional toilets, 47.3% had no specific place where they washed hands.

Further analysis in Table 26 demonstrated no significant association between episodes of diarrhea and the Sub Counties (χ^2, *2 = 4.88 p-value = .0.087)*. However, children under five years from Bondo 43.0% experienced more episodes of diarrhea than those from Rarieda 27.9% and Gem 29.1%.

Table 26: Prevalence of diarrhea across the Sub counties in Siaya

	Has the child had diarrhea in the last two weeks?				***x²***	***df***	***p-value***
	Yes		**No**				
	n	**%**	**n**	**%**			
Sub Counties in Siaya	37	43.0%	113	30.6%			
Bondo	24	27.9%	129	35.0%	4.88	2	.0.087
Rarieda	25	29.1%	127	34.4%			
Gem							

3.5.5.2 Children under 5 Years with Diarrhea Treated With Zinc Supplements

To prevent and reduce the severity and duration of diarrheal incidences amongst children, WHO and UNICEF recommends use of 10 mg and 20 mg of zinc supplements to rehabilitate children of 0-6 months and 10-14 days respectively. Alternatively, oral rehydration therapy can be administered to replace the liquids lost. While the end term evaluation showed that the prevalence of diarrhea decreased by 13.8% from the midterm assessment; on the contrary, uptake of zinc pills or syrup as a remedy during diarrheal episodes increased from11.9% at midterm to 15.8% at end term while ingestion oral rehydration salts increased from 20.8% at midterm to 30.5% at end term assessment.

Interview with CHVs following these results revealed that both ORS and zinc are included in the job aid given to the CHVs and that CHVs are given and replenished with sachets of ORS and zinc tablets during monthly meetings. However, out of the five interviewed from the three sub-counties none of them had distributed either zinc or ORS stating that diarrhea was rare. In fact one CHV from Wagai health Center stated that their area was declared Open Defecation Free (ODF). Further, the CHVs mentioned that both zinc and ORS were not available in shops in the community. This means that those who used either zinc or ORS which were promoted equally accessed them through CHVs or health facilities.

This indicator was measured at community level where zinc syrup is not generally sold in the shops as opposed to ORS which is found in some shops. Secondly, the project did not do social marketing of zinc and ORS to ensure it was widely found in shops and hence accessible to households. The low use can then be attributed to inaccessibility by the households since findings show that 36% used nothing and the rest home remedies. The reduction in the use of zinc in the treatment of diarrhea had a correlation with a similar decrease in the incidences of diarrhea and with significance of the association in the use of zinc and the occurrence of diarrhea as indicated table 27. This reduction assumed a normal curve and was therefore within normal range.

Table 27: Treatment of diarrhea with zinc syrup or pill

	Treatment using Zinc pill or syrup				x^2	df	p-value
	Yes		No				
	n	%	N	%			
Diarrhea occurrence in the last two weeks							
Yes	15	100%	70	15.9%	52.65	2	.0.000*
No	0		369	83.8%			
Don't know	0		1	0.3%			

*Significant at P < 0.05

On the contrary, treatment of diarrhea using zinc pills or syrups in Bondo was high 80.0% Rarieda 6.7% and Gem 13.3%. Somewhat, this treatment method exhibited a significant association through the Sub Counties in Siaya (χ^2, *2 = 14.27 p-value = .0.001)* as shown in Table *28*. It is noteworthy that Bondo is more cosmopolitan and more urbanized, with more pharmaceutical outlets, a factor that could have influenced the use of Zinc

Table 28: Treatment of diarrhea with zinc syrup of pill

	Treatment using Zinc pills/syrup				x^2	*df*	*p-value*
	Yes		No				
	n	%	n	%			
Sub Counties in Siaya							
Bondo	12	80.0%	141	32.4%			
Rarieda	1	6.7%	152	34.2%	14.27	2	.0.001*
Gem	2	13.3%	149	33.5%			

*Significant at *P < 0.05*

The second interpretation is the assumption from the participants that ORS and Zinc were both useful in the treatment of diarrhea hence in many instances, whenever there was an episode of diarrhea, ORS was used to play the role of zinc. ORS was widely available and could have been used instead of zinc as indicated in table 29. Further analysis demonstrated significant efforts to treat diarrhea with either zinc (χ^2, 2 = 56.65 p-value = .0.000) or oral rehydration salts (χ^2, 2 =106.68 p-value = .0.000) were revealed (Tables 27 and 29).

Table 29: Treatment of diarrhea with oral rehydration salts (ORS)

	Treatment using ORS				x^2	df	p-value
	Yes		No				
	n	%	N	%			
Diarrhea occurrence in the last two weeks		100%			106.68	2	.0.000*
Yes	29		56	13.1%			
No	0		369	86.6%			
Don't know	0		1	0.3%			

*Significant at P < 0.05

Treatment of diarrhea using oral rehydration salts was examined across the counties in Siaya. Bondo depicted a higher proportionate 51.7% treatment of diarrhea with ORS compared to Rarieda 20.7% and Gem 27.6%. However this relief method was insignificant across the Sub counties in Siaya (χ^2, *2 = 4.63 p-value = .0.099) in Table 30.*

Table 30: Treatment *of Diarrhea by use of Fluid from ORS Packet in Siaya*

	Treatment using fluid from ORS packet				x^2	*df*	*p-value*
	Yes		No				
	n	%	n	%			
Sub Counties in Siaya							
Bondo	15	51.7%	141	32.7%			
Rarieda	6	20.7%	147	34.1%	4.63	2	.0.099
Gem	8	27.6%	143	33.2%			

3.4.1 Perceived benefits of healthy nutrition practices

R3-Indicator 5:	Percentage increase of male and female final beneficiaries being able to name at least three benefits of healthy nutrition practices.
Achievement:	There was cumulative increase of 14.7% from baseline of 46.92% to 61.5% at end term and an increase of 3.5% from mid-term of 58% of male-female beneficiaries were able to name at least three benefits of MIYCN

Most recipients (61.5%) in this end term evaluation were aware of more than three benefits attained from engaging in healthy nutrition practices such as reduced occurrence of diseases, development of strong bones and teeth and reduced mortality. Proportionate comparison done

from baseline, 46.9% and mid-term 58% and end term 61.5% validates that awareness of benefits under review increased progressively from inception to this juncture.

The survey indicated in Figure 14 that most of the respondents were aware of the benefits of healthy nutrition practices. The response revealed that reduced incidence of diseases 87.4%, strong bones and teeth for children 62.4% and reduced child mortality were the highest perceived health benefits of nutrition practices in the area of study. Better brain functioning 23.7% and increased productivity among household members 27.4% were ranked with fewer benefits. However, mothers at 80.0% who were the primary care takers of the children were the most powerful in making the decision on how the child should be breastfeed in the households compared to husbands 11.8%, mother in laws 1.2% and others at 7.1% who were either grandmothers or family members. These results can be attributed to the trainings conducted by the CHVs and health workers to the mothers in the Mother to Mother (M2M) groups, food demonstrations in the community, men groups, social analysis and action dialogues and PET.

> We were taught not to sell what we have e.g. eggs. We can go for alternative meals with the same nutrients, use one which is available like beans which is available instead of meat. **FGD with M2M**

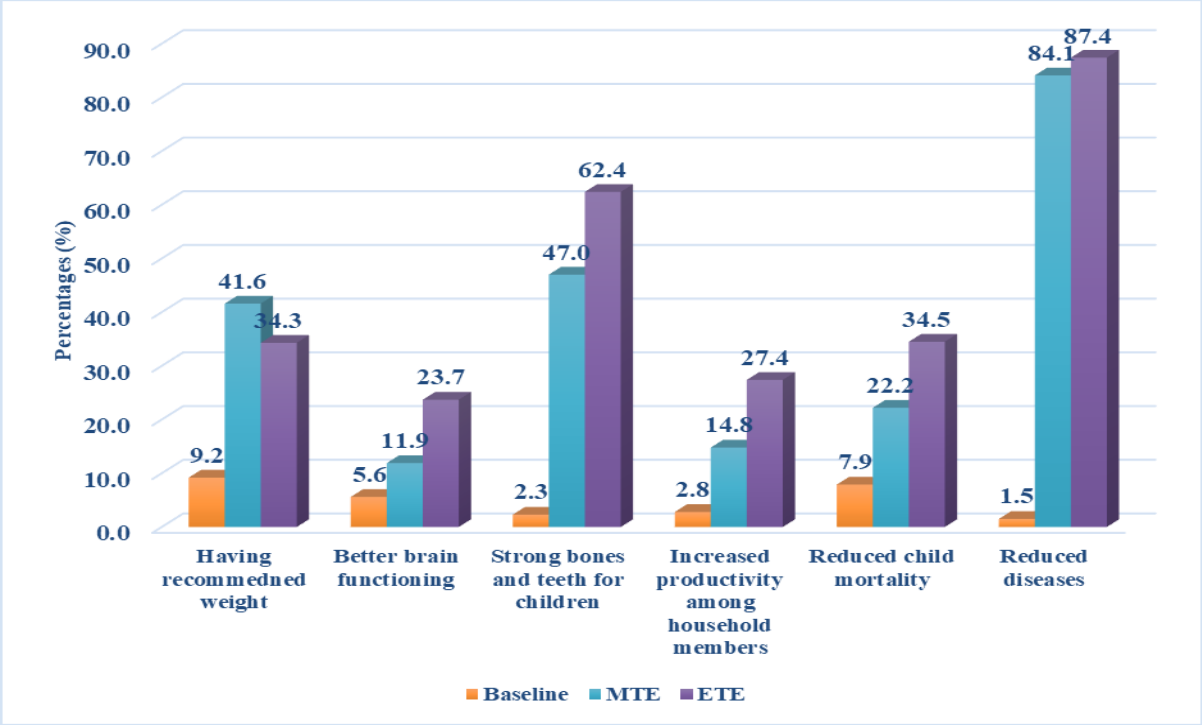

Figure 14: Benefits of healthy nutrition practices

Table 31 depicts particular aspects evaluated alongside responsiveness to at least three benefits accrued from engaging in healthy nutrition practices. Marital status (χ^2, 180 = 230.90 p-value = .0.000), area of intervention (χ^2, 90 = 419.89 p-value = .0.000), and the main source of income (χ^2, 315 = 260.82 p-value = .0.044), significantly related to responsiveness to more than one benefit of engaging in healthy nutrition practices. There we no significant correlation between religion and the level of education in the area of study.

Table 31: Demographic factors related with being aware of at least three (3) benefits of healthy nutrition practices

Variable	Responsiveness to > 3 benefits of healthy nutrition practices				x^2	df	p-value
	Yes		No				
	n	%	N	%			
Sub County							
Bondo	109	33.1%	41	29.5%	419.89	90	.0.000*
Rarieda	117	35.6%	35	25.2%			
Gem	103	31.3%	63	45.3%			
Marital status							
Single/living alone	27	12.8%	29	12.0%	230.90	180	.0.000*
Married	172	81.5%	203	84.2%			
Divorced	5	2.4%	1	0.4%			
Windowed	7	3.3%	8	3.4%			
Level of education							
Completed primary	41	19.5%	64	26.5%	280.54	270	.0.317
Primary not completed	85	40.5%	99	41.1%			
Completed secondary	46	21.9%	37	15.3%			
Secondary not completed	29	13.8%	35	14.5%			
Tertiary	9	4.3%	6	2.6%			
Main source of income							
No reliable source of income	44	21.1%	61	26.6%	260.82	315	.0.044*
Salaried employment	12	5.8%	1	0.4%			
Casual laborer	68	32.7%	66	28.8%			
Business	58	27.9%	60	26.2%			
Crop farming	26	12.5%	51	18.0%			
Religion							
Protestants	124	73.4%	216	83.0%	168.89	225	.0.998
Roman Catholic	31	18.3%	42	16.1%			
Other religions	14	8.3%	2	0.9%			

*Significant at P < 0.05

3.4.2 Beneficiaries Gender Attitudes towards MIYCN

ER3-Indicator 6:	Proportion of final beneficiaries expressing the positive change in gender attitudes for MIYCN.
Achievement: 59.3% of	of beneficiaries expressed positive attitudes to MIYCN which is 0.7% below the midterm evaluation of 61.0%

59.3% of the respondents strongly professed that MIYCN is a very important service to the community and the Nawiri Project had facilitated health feeding practices in the community. On the other hand, 58.0% affirmed that MIYCN should be a responsibility of all household members. However, 10.6% expressed the view that MIYCN is a women and child issue only and 4.4% alluded to the fact that MIYCN is for those who can afford. On establishing whether the spouse or partner participates in household nutrition events, 82% affirmed and 18% negated. Interestingly, this level of participation of the spouses was rated occasionally at 38.2% and most often at 37.1%. Only 9.1% rated the participation as rarely recognized as indicated in Figure 15.

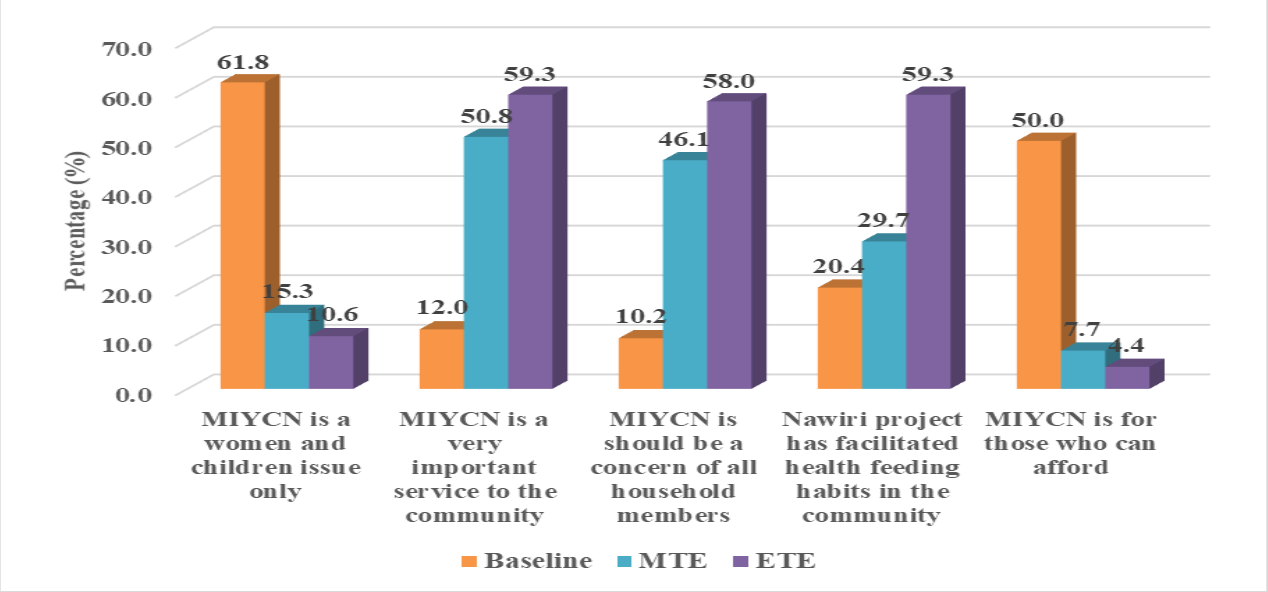

Figure 15: Beneficiaries Gender Attitudes towards MIYCN

3.5 Expected Result 4: Evidence on effective nutrition-sensitive and nutrition-specific actions being built, discussed and disseminated

This result area aimed at building evidence on effective actions for changing MIYCN trends and status in Siaya County through generation of robust and sustainable information systems, building and documenting evidence on effectiveness of nutrition-specific and nutrition-sensitive actions, using the evidence in rights based advocacy (ER1) for political commitment and nutrition governance, and providing technical expertise to build capacities that will enhance the achievement of this outcome and sustain them. The consortium collaborated with a research

body to conduct operations research. This result area was supported by five indicators which included: 1) proportion of county health facilities with source documents data matching health facility summary sheet data; 2)proportion of county health facilities with source documents data matching DHIS2 data; 3)proportion of county health facilities timely reporting nutrition data; 4) proportion of Community Units timely reporting nutrition data; and 5) number and type of good practices and research results documented and disseminated for evidence-based advocacy. The indicators are presented in tables and then discussed.

3.5.1 County health facilities with source documents data matching health facility summary sheet data

R4-Indicator 1:	Proportion of county health facilities with source documents data matching health facility summary sheet data.
Achievement:	88.9 percent of health facilities had source documents data matching health facility summary sheet data

Eight out of the nine (88.9%) randomly selected health facilities had source documents matching data in the facility sheet summary. This data mirrors what could be happening in all the 21 heath facilities in the project. The evaluators checked data from the MCH mainly on immunization. This was attributed to the training on data quality to the facility in charges and the Health Records Information Officers.

3.5.2 County health facilities with source documents data matching DHIS2 data

R4-Indicator 2:	Proportion of county health facilities with source documents data matching DHIS2 data.
Achievement:	Proportion of county health facilities with source documents data matching DHIS2 data was at 95.0% which is similar to the MTE.

The evaluators further checked the data from the summary sheets and DHIS2 using the mobile phones of facility in charges to confirm data entered in the previous quarter and the data summary sheets and found about 95% matching the source documents. The evaluators checked immunization data and Vitamin A. This was attributed to first training of the health workers especially health facility in chargers on the importance of data quality, monthly data reviews at health facility level as well as community data by CHVs. Further, the health facility in-charges participation in the Routine data quality assessments[13] (RDQA) conducted with the support of

The lead Consultant confirming data from summary sheet to DHIS 2 in Ndere Health

[13] This is referred in the documents as Data Quality Audits (DQA), however, since this an internal assessment scheduled in the project it is the evaluators informed opinion that it is a Routine Data Quality Assessment (RDQA)

Nawiri project by the SCHMT together with Nawiri Project staff. The facility in-charges reiterated that there had been tremendous improvement in data quality since they were trained and participated in the RDQAs. Besides, their data demand and use has also improved, with them using data for procurement of commodities and planning purposes. The evaluators are of the opinion that the implementation of this component was effective.

3.5.3 County health facilities timely reporting nutrition data

R4-Indicator 3:	Proportion of county health facilities timely reporting nutrition data.
Achievement:	Proportion of county health facilities timely reporting nutrition data was at 95.0% at ETE up from 75% at MTE

The proportion of county facilities reporting timely data was estimated at 95%. This data is reported through the Child health and nutrition information system (CHANIS) as well as MOH 711 covering mothers given IFAS- combined or single, and MOH 710 for vitamin A supplementation. The evaluation team was informed that the hard copy reports are due by 5th of every month while uploading into DHIS2 is done by the 10th of every month. Improved reporting is attributed to the RDQAs as well as use of innovative ways such as sending photos of the summary reports (710 and 711) through whatsapp[14] followed by the hard copy to avoid delays.

3.5.4 Community Units timely reporting nutrition data

R4-Indicator 4:	Proportion of Community Units timely reporting nutrition data.
Achievement:	Proportion of Community Units timely reporting nutrition data was at 80% at ETE up from 75.0% at mid-term.

The community health units are led by the Community Health Assistants (CHAs) who supervise the volunteers, the primary data collectors of household data on health and nutrition among other data. The CHVs report on a monthly basis using the MOH 100 reporting tool. According to the CHVs interviewed they were all reporting on timely basis and would only delay in very rare occasions. Those interviewed projected their timely reporting to be over 80%. The reasons provided for timely reporting were supportive supervision by the CHAs and the monthly meetings which served as an incentive as the CHVs were expected to share their reports.

3.5.5 Type of good practices and research results documented, disseminated for evidence-based advocacy

R4-Indicator 5:	Number and type of good practices and research results documented moreover, disseminated for evidence-based advocacy
Achievement:	157% (11 out of target of 7) 5 abstracts, 3 oral presentations, one poster presentation and one MSC booklet One male involvement module

This output was mainly achieved in year three with the presentation of 9 items (5 abstracts, 3 oral presentations, one poster presentation) in conferences and development of MSC booklet for best practices. Also included in this was the development of one policy brief. Key informant interview with project staff revealed that two policy briefs were yet to be completed for

[14] Social media application on mobile phones

advocacy as the project ends. The abstracts were also used in nutrition conferences to disseminate Nawiri project results and the advocacy briefs were used for nutrition advocacy for the political class.

3.6 Project Performance based on Evaluation Objectives

This section presents response to the evaluation objectives on implementation based on the expected result areas assessing the effectiveness efficiency and sustainability of the project.

3.6.1 Performance Measurement against Indicators under each Result Area (Effectiveness)

"The male champions were selected from those who are willing training. The committee took them through the SAA product. You will see that they are a group of 'busa club'. So the activities are done from the club." **KII with Proiect Staff**

Project effectiveness answers to whether the project accomplished what it was sent to do. In this regard, the evaluation established that that the project implementation was effective. Table 32 illustrates project target performance level with the male target being 165% while the adolescent girls target underperforming at 45%. The performance on the men reached was attributed to the strategies employed such as reaching the men through their spouses in the M2M groups as well as reaching them through male champions whenever they would be found including men clubs which yielded results. On the other hand, the project did not anticipate the complexity of working with teenage or adolescent girls who had no clear support system that required more resources and linkage to other systems such as rescue centers which were not readily available lading to the poor performance. The intervention for the adolescent girls was weak and the project team acknowledged the intricacies of working with teen age girls of 14 years project team. The remaining indicators under the four expected result areas are presented in the ensuing subsections.

"……..we just realized that there is a team that we had not planned for very well**, this is t**he **team of teen mothers**. So we see our interventions work best for people who were being supported, or who have spouses or parents who can support. This is a child who was in primary she is 17 years old or you meet a child of 13 or 14, with a child and she is not married, and the parents are not willing to help her. And she is living somewhere, and if you talk to them, she is looking for someone who would take them back to school……. but the biggest problem is that the 17year old is pregnant with a third child and no one has talked to the about that". **KII with Proiect Staff.**

Table 32: Project target performance

Beneficiaries	**3Year Target**	**Annual Achievements**			**Total**	**% Achievement**
		FY1	**FY2**	**FY3 (Q3)**		
Children under 5 years	94,435	1724	69,051	16175	86950	92%
Women of Reproductive Age	127,055	22317	78729	9511	110557	87%
Adolescent Girls	42000	728	17730	2104	20562	49%
Men	20,000	6617	22166	4203	32986	165%

3.6.1.1 ER1: Advocacy for Political Commitment

Advocacy was crucial in influencing systemic support through policy. The project planned to engage 113 political leaders and reached 74 including (the Governor, CECs and directors) and 54 MCAs. Year 2 quarter 1 report shows that two members of parliament for Rarieda and Bondo constituencies and Gem constituency manager. No Senator was reached. However, the project influenced the development of the health bill to strengthen the nutrition unit. Further, the project facilitated the development of the Costed County Integrated Nutrition Action Plan (CCINP) and County Nutrition Action Plan (CNAP) as planned and implemented. It is noteworthy that although the CCINP was developed its implementation faced budget challenges as the Nutrition unit within the health department does not have a budget code to facilitate allocation of funds specifically for nutrition activities. Table 33 below shows annual, mid-term and end term achievement levels. The final results are color coded for easy interpretations where Red represents indicators not achieved, amber almost achieved and green achieved indicators.

Table 33: ER 1 Performance Indicators

Indicators	Baseline	Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Number of county assembly members and executive leaders reached with advocacy for nutrition-specific and nutrition sensitive messaging	0	113*	0	0	0	76	76	76	67.2%*
Indicator 2: Proportion increase in county budgetary allocation for MIYCN services	0.08%	0.50%	0	0.24%	0.24%	0.42%	0.42%	0.42 %	84%**
Indicator 3: Costed County Nutrition Strategic Plan and County Nutrition Action Plan (CNAP) developed and implemented.	0	1	0	1	1	0	1	1	100%

*The target of 113 was or the whole of Siaya County. The three targeted Sub-counties only have 36 MCAs, 3 MPs and 1 senator of whom all were reached except for the senator.

** The budget achievement level has used the target of 0.5% as the denomitor

3.6.1.2 ER2: Capacity Building

Capacity building for the human resource for nutrition was key to the achievement of nutrition indicators. Table 34 reveals that all indicators were achieved and some surpassed. The best performing indicator was on 3539 health workers trained through CME at 148%. The training of 10454 CHVs presented 100% achievement. These two indicators were critical in improving quality of nutrition service delivery hence leading to improved nutrition outcomes. Those achieved at 95% were considered achieved given the margin of error of 5%. The facilitating factors for the CME achievement may be explained by the commitment of the ToTs, community feedback on service delivery based on the score card and effective monitoring of CME activities by both SCHMT and Nawiri Project team.

Table 34: ER 2 Performance Indicators

Indicators	Base line	Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Number of health workers trained on relevant nutrition guidelines and SOPs.	0	35	36		36		36	36	103%
Indicator 2: Number of health workers and CHV workers trained on MIYCN.									
• Health workers(TOTs)	5	35	38	39	38	38	39	39	111%
• Health workers reached through CME	0	3300	0	1330	0	3539	4869	4869	148%
• Community Health Volunteers (CHVs)		1054	1054	1054		630	1054[15]	1054	100%
Indicator 3: Proportion of health facilities experiencing no stock outs of essential nutrition commodities in past 3 months.	50%	80%	0	80%	80%		80%	95%	95%

3.6.1.3 ER3: Sensitization and Mobilization for Nutrition Services

The evaluation team noted that sensitization and mobilization were carried out effectively through community outreach programs. The team established that five types of nutritional outreaches were carried out: 1) outreach for nutrition assessment in the general aspects; 2) outreaches focused on areas with chronic malnutrition issues like the beach sides; 3) outreaches done to link with commemoration of nutrition days such as *Malezi Bora* week, breastfeeding week; 4) food demo outreaches; and 5) outreaches using PET. This led to the achievement of most of the ER 3 indicators apart from a few such as the use of Zinc for treating diarrhea which increased by 20.9% below the target of 80% and naming of three benefits of good nutrition at 61% with an increase of 31.07% from baseline which was below the target of 80% increase. The results presented in section 3.5 above show a steady increase in the use of zinc. Table 35 illustrates the performance.

Table 35: ER 3 Performance Indicators

Indicators	Baseline	3 years Target	MTE	ETE	% Achieved
Indicator 1: Percentage increase of pregnant women who take iron-folic acid supplements during pregnancy.	55.50%	80%	93.70%	92.5%	92.50%
Indicator 2: Percentage increase of children under 6 months who are breastfed exclusively.	37.50%	60%	57.80%	64.7%	64.7%
Indicator 3: Percentage increase of children aged 6-59months receiving vitamin A supplementation twice a year.	36.45%	80%	46.04%	36.39%	-0.2%*
Indicator 4: Percentage increase of children under 5 years with diarrhoea who are treated with zinc supplements	13.06%	100%	25.7%	15.8%	20.9%*

[15] The same CHVs were trained and refreshed (Source FHOK)

Indicators	Baseline	3 years Target	MTE	ETE	% Achieved
Indicator 5: Percentage increase of male and female final beneficiaries being able to name at least three benefits of healthy nutrition practices.	46.92%	80%	58%	61.5%	31.07%*
Indicator 6: Proportion of final beneficiaries expressing positive change in gender attitudes for MIYCN	55.60%	80%	60.60%	59.3%	59.3%

*This is percent increase from baseline computed as follows (ETE-Baseline/Baseline)*100

3.6.1.4 Expected Result 4: Evidence on effective nutrition-sensitive and nutrition-specific actions is built, discussed and disseminated

This result area was generally realized with very good outcomes in most indicator targets surpassed attaining between 90% and 157% as presented in Table 36. This demonstrates that the project was effectively implemented. It is however, noteworthy that some of the indicators are estimates based on the randomly selected nine out of 21 health facilities. However, qualitative data from SCHMT members also confirm the status of the proportions presented. Most achieved indicator is number 5 which included development of 5 abstracts, 3 orals and one poster and one MSC booklet completed with best practices[16] the project also facilitated a nutrition conference in Siaya County.

> "….. In this case in evidence building, Siaya County, we actually reactivated the **research committee**, and one of the things that has come out of the period NAWIRI project has been there in Siaya county is inaugural health conference that has been fully followed up by this project." **KII with Project Staff**

Table 36: ER 4 Performance Indicators

Indicators	Baseline	3 Year Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
Indicator 1: Proportion of health facilities with source documents data matching health facility summary sheet data.	66.70%	100%			80%		0	88.9%	88.9%
Indicator 2: Proportion of health facilities with source documents data matching DHIS2 data.	66.70%	100%			95%		0	95%	95%
Indicator 3: Proportion of county health facilities timely reporting nutrition data	74.10%	90%			75%		0	95%	95%
Indicator 4: Proportion of Community Units timely reporting nutrition data	74.10%	90%			75%		0	89.9%	89.9%
Indicator 5: Number and type of good practices and research results	0	7	0	1	1	10	11	11	157%

[16] Year 3 Quarter 3 Interim Report

Indicators	Baseline	3 Year Target	Achieved					ETE	% Achieved
			FY1	FY2	MTE	FY3	Total		
documented and disseminated for evidence-based advocacy									

3.6.2 Assessment of efficiency of the process of achieving results

The project implementation was deemed efficient based on the annual target achievements. The efficiency was attributed to well-coordinated activities at the consortium level and partnership with the government. Overall, most of the indicators were achieved. However, ER 3 indicator 5 could have been done more efficiently especially the policy briefs for advocacy as only one was produced, with the remaining two still in the process while the project is ending. Secondly, the targets of adolescent girls were below half the target at 49% yet they are the future mothers who will influence, improve or maintain the food and nutrition practices.

3.6.3 Contribution of the adopted gender equality (SAA Model) and rights based approach programming,

The Social Analysis and Action (SAA) was a very important evidence based model that has been used in different contexts and countries tool that has implemented to support gender issues particularly analyzing issues affecting women's health male involvement. Text box I presents illustrative question to address gender issues through rights based approach.

The use of the manual taught to the CSO members, enabled them to facilitate community dialogue forums addressing nutrition and health issues. The main contribution of SAA is facilitating gender based dialogue forums based on rights approach as mentioned by the project staff.

Text Box1: illustrative gender issues discussed in the SAA Manual

What are some of the key social factors that affect health?

■ **Gender:** Consistent denial of rights or access for women through systems of widowhood, divorce, child marriage, education, land and inheritance rights, and interpersonal violence.

■ **Age and agency:** Youth isolated or excluded from decision making or denied access to health, education or livelihood.

■ **Sexuality:** Social norms that restrict sex education, reinforce vulnerability to coerced sex, stigmatize sex work, link women's virginity with identity or power, discriminate against sexual minorities or promote use of sexual violence.

■ **Masculinity and machismo:** Social norms that promote aggression, violence and limited emotional expression among boys and men, and limit opportunities for access to reproductive health programs.

■ Power and race, caste, religion: Stigma and discrimination based on group identity

From the Social Analysis Manual:

http://www.care.org/sites/default/files/documents/social_analysis_manual.pd

The objectives actually follow fully within that including the one for gender where now we have come up with the male involvement manual and we have our **SAA** (Social Analysis and Action) model. The model covers that bit of gender. We may not see directly but that is what is doing. Because when you come to our logframe, you will see positive attitudes towards gender attributes. **KII with Project Staff**

3.6.4 Contribution of community score card strategy for social accountability,

The community score card was lauded by the SCHMT members, facility in-charges, community volunteers and mothers to mother groups for improving accountability and relationship between community members and health facilities. The score card feedback has enabled both community members and health service providers to appreciate the challenges of each group and have a way forward in line with the service charter. This has seen almost double increase the number of patients and clients seeking health services in the facilities.

3.6.5 Contribution of advocacy strategies for political commitment

The advocacy strategy contributed to the county nutrition through policy framework, championship of nutrition by the Governor's office, especially, the First Lady being the Nutrition Champion. Increased involvement of MCAs in nutrition agenda at the ward and community levels; and the drafting of Nutrition Bill which is underway in the County Health Committee will be a major achievement once it is completed. All of these will enhance sustainability of nutrition in the county.

3.6.6 Contribution of role of mother to mother support groups, male champion

The mother to mother groups provided a platform for training, peer support and safer environment for airing and addressing health and nutrition concerns. Participation in the groups have helped the mothers improve communication with their partners, improve breast feeding practices, improved livelihoods through savings and taking loans for small business, thus increasing household income.

"Young women sometimes did not know how to breastfeed or give proper meals but now they can do it. The women have also learned how to communicate with their spouses and ask for support which has in turn improved family relations", **FGD with M2M group**.

"NAWIRI has very powerful impacts on MCH indicators. If we compare previously before the project was implemented the number of the mothers who attend ANC is almost double. This has resulted from mother to mother support group. Through these support groups we put women together; we teach them importance of attending clinics and importance of good nutrition. Those who attend those groups spread the information to others and many come to this facility. Last year we were ranked number one in the sub-county and given a trophy as an evidence of what we do here", **KII with Health Facility In-Charge**.

3.6.7 Contribution of curriculum and training,

The project used three main curriculum 1) MIYCN curriculum developed the Kaya Government; 2) male investment module, and SAA training manual. The other guidelines used included one to enhance training of CHVs developed form the MIYCN curriculum. The MIYCN Curriculum was used for training the TOTs ad special topic picked from it from it to develop the CHV guidelines. The same guidelines were used for CMEs. The standard training manual ensured consistency in nutrition information provided across the cadres in the health system. It is our opinion that the curriculums used were effective based on the improved of MIYCN indicators already presented in section 3.5 above.

3.6.8 Contribution of role of MIYCN ToTs, impact of community outreaches, food demonstration sessions,

The MIYCN ToTs were trained for five days and were expected to train the other health workers and CHVs. They included nutritionists, nurses and clinical officers. The ToTs formed the backbone of training and hence capacity building for the health workers. The project trained a total of 35 ToTs. The ToTs in turn trained 3539 health workers on MIYCN through Continuous Medical Education (CME) in 214 sessions and sensitized 1054 CHVs in three days training workshop. The CMEs were conducted on a monthly basis. The sensitized CHVs visiting households, screening children for malnutrition, recruited mothers into the m2m support groups among other activities.

> *"Our role in the project is to mobilize mothers for outreaches, training mother to mother groups, monitor child growth, screening of children and referral of malnourished children. We also follow up on prenatal and postnatal mothers to remind them on their dates to go for those services and then follow up to ensure they don't miss a date. In addition, we teach and train mothers on good health and nutrition and also follow them to ensure that mothers put into practice what they have been taught", **CHVs**.*

The CHVs along with the ToTs and other health workers conducted integrated outreaches in the communities living over 5 kilometers to health facilities.

The discussion with the CHVs, health workers, TOTs, and SCHMT members revealed the impact of the training on MIYCN to be increased capacity of health workers and CHVs to screen and refer malnourished children for treatment, improved capacity of health workers to treat malnutrition in the health facilities resulting in reduced malnutrition cases. The home visits and outreaches increased exclusive breast feeding of children for the first six months, increased clinic attendance and increased number of women with kitchen gardens.

3.6.9 Contribution of Public Participation by CHVs during Budget Development Process

Public participation in budgeting and other policies of public interest is engrained in the 2010 constitution of Kenya. Although this was one off the deliverables, there was no clear evidence of CHVs participation in budgeting process.

3.6.10 Efficiency of the organizational set-up for the project and systems used in the delivery of the project

The project was efficiently implemented through a consortium of three organizations including CARE (the lead organization), FHOK and KMET in partnership with the Siaya County Ministry of Health. The consortium leveraged on the synergy created by their complementary expertise and experience in the project implementation. This was enhanced by the good will of the County government and health management teams.

To enhance efficiency, the consortium partners shared office space in Siaya and logistical support in movement to encourage team work, shared vision, efficient feedback

> "I don't want a situation where FHOK was going to Gem, and KMET to Bondo. But then KMET stays in the office, so that the driver takes FHOK to Gem comes back to Siaya and Takes KMET to Bondo. So now, the arrangements is so that we able to plan our journeys and move together properly", **KII with Project Staff.**

system which built synergy among project staff regardless of the employing organizations. It also enhanced coordination, joint planning, implementation and feedback between and within the consortium.

Although in most cases the arrangement worked well, differences in organizational policies, especially, in the terms of the mode of financial reimbursements for transport to participants in various activities elicited different reactions from stakeholders. For example, some CHVs did not have personal phones and were asked to provide a phone number to be used for payment of monthly allowance and transport reimbursement during special activities. This led to delayed or loss of payments of the allowances for those with no phones. On the other hand, the use of mobile money transfer improved accountability at organizational levels and reduced audit queries due to evidence of payment through the financial statements form the provider with details of the payee.

> "…I have calculated for each member, to know that for each person we reach we only spend 50 shillings",……..**KII with project Manager**

Partnership with the MOH worked well as the collaboration began from proposal development launch and implementation. The SCHMTs were well supported to carry out their mandate in supervision of nutrition services while integrating activities for synergy. Besides the project facilitated the formation of nutrition coordination mechanisms at the sub-county level to facilitate nutrition programming, Table 37 below presents strengths and weaknesses as seen by MOH Partners

> "We have cordial partnership relationship, we plan together then we implement together meaning our officers are the ones used to implement and penetrate communities. Good working relationship between the partners was also seen as each would fulfill its obligations in a timely manner one would support meals, another transport and another reimbursements", **KII with CHMT**

Nawiri project team also participated in the inter-agency collaborative meetings with other non-state actors such as PATH, AMREF among others. This ensured there is no duplication of efforts. The projects identified areas of collaboration for example in ECD Nawiri Project collaborated with PATH.

Table 37: Strengths and Weaknesses of partnership with MOH

Strengths	**Weaknesses**
• Capacity building • Facilitation of nutrition policies (CNAP, CCNP and policy briefs) • Equipment – procurement of salter and bathroom scales for health facilities and MUAC tapes for community screening of malnutrition • Increased number of nutrition human resources through training of health workers and CHVs and hiring of nutrition interns to support activities. • Support for integrated outreaches • Support SCHMT monitoring and supervision visits • Sub-county nutrition coordination mechanisms • Support facility in-charges meetings • Facilitation of DQA which has improved data quality	• The project did not envision the complexity of working with teenage mothers to program for them. • Use of different transport facilitation system i.e. some paying cash which was more efficient while others using MPESA which delays. However, cash payment is has hire risk of loss cash on transit. • Nawiri only covered some health facilities. It would have been better to cover all facilities in the selected sub counties.

3.6.11Gender Mainstreaming

The evaluation found that gender was mainstreamed in the project using tools such as Social Analysis and Action (SAA). The pregnant women and mothers of children below 5 years coming to clinics were encouraged to invite their partners. The men who came to the health facilities were trained on gender issues including sharing of responsibilities in the home, child care and importance of nutrition of the mother and child. The men interviewed confirmed that they were trained on various gender issues which helped them think differently. As a consequence of the male engagements through SAA as a driver of social change in the community, greater sharing of responsibilities in child care and in the household has increased with greater awareness and appreciation of such work. Men have become gender sensitive and supportive to their partners by doing gender reproductive work such as sharing in household chores previously considered as women's domain such as child care, house cleaning. On the other hand both gender productive and reproductive roles of women were also addressed. In productive roles, women were encouraged to improve their household income through village savings and loaning groups for small business. This helped to improve participation in financial decision making in their households and improved communication between husband and wife.

> "Since my husband stated participating in the men activities he has changed. These days he helps in the house, even dressing the children and sometimes cooking and washing utensils which he never did before", **FGD with M2M**

> "Boda boda youths (male motorcycle taxi riders) have been engaged and it has helped in understanding division of labor in terms of maternal health and men have been sensitized to know that everyone is equal in meal times", **CHVs.**
> "Men could not sweep or keep hygiene as it was thought to be women's role but now we do them without prejudice. Furthermore as a male champion I collect firewood and assist in house chores", **Male Champion.**

> "……women are very happy, now the men are taking them to hospital. If the women go to clinic, men remain home and cook for the children lunch. Now they can make a birth plan, and start saving towards the baby birth", **KII with Project Staff**

3.6.12Project Sustainability

The evaluation team found that Nawiri project strongly embedded sustainability in both the project design and implementation through a systems approach right from the top (county level) to the local community. For example engagement with the political class, the Governor, MCAs, County Health Committee and executives facilitated an enabling environment for the development and launching of critical nutrition policy documents such as CNAP, CCNP, and inclusion of nutrition pillar in the CIDP. These policy documents will facilitate increased budgeting for the nutrition portfolio in the county enhancing financial sustainability. For example, before Nawiri project, the County only provided financial resources for human resources without nutrition commodities which are critical in treatment and prevention of malnutrition. Currently there is budget for both human resources and nutrition commodities anchored in policy framework for sustainability.

Institutional sustainability was addressed through both policy framework and human resource capacity building at all levels (County, health facility and community level). At county level capacity for high level planning and budgeting, development of policy briefs for advocacy purposes were strengthened. At health facility level, capacity building for HRH through

continuous medical education (CME) by MIYCN TOTs in line with the MOH policy framework has potential to continue as a result of performance contracting. Community level sustainability is through community strategy with the training of CHAs and CHVs who also report on nutrition indicators.

Nawiri project also partnered with grass-root civil society organizations (CSOs) in the community and built their capacity in in community mobilization and community engagement through Participatory Educative Theater (PET) and Social Analysis and Action (SAA) which they may continue to use to engage the community in nutrition and gender related dialogue in the community.

3.7 Challenges

- Nutrition is a unit within the health department with no budget code. This means that even when a budget was allocated for nutrition the unit it may be easily diverted to other health activities due to lack of nutrition budget code, because the finances are in a pool.
- Inadequate human resource for health for nutrition unit. There were 14 nutritionists for 21 health facilities meaning that some facilities had no nutritionists.
- Attrition of staff trained by the project as a result of transfers and retirements led to the need for training new personnel of mobilizing support of the new leadership which requires time for buy in to the project.
- The health workers strike led temporary withdrawal of some activities thus reducing the impact of the project. For example the slight negative change in vitamin A uptake could have been due to reduced access following the protracted strike by the health workers in the year 2018 that made health facilities to partially close down hence affecting the supply of vitamin A supply.

3.8 Facilitating Factors that Made the Project Achieve Results

- The consortium had partners with complementary expertise which were well focused on project outcomes.
- Good will from the County and Sub-county Health Management Teams facilitated
- Collaboration and working together with the MOH teams, other partners in nutrition TWG and the community itself.
- Sharing information on the project budget facilitate transparency, joint planning and implementation

3.9 Best Practices

The evaluation identified the following five best practices.

6. **Consortium approach.** The consortium facilitated sharing of expertise and capabilities for effective and efficient delivery of services.
7. **Male involvement training manual**. The adaption/contextualizing of male involvement training manual facilitated behavior change evidenced through male partners taking up more gender roles seen as feminine by the society in the family

8. **Participatory Educative Theater (PET)** methodology to enabled the community to dialogue on MIYCN and gender issues
9. **Social Analysis and Action (SAA)**was effective in gender mainstreaming through community dialogue
10. **Community scorecard.** He score card was very effective in providing feedback to both health workers in the facilities and the community resulting in improved service delivery and increased utilization of the health facilities

3.9.1 Provide recommendations on future project design including how to ensure log frames are more effective.

The current project design was generally effective in responding to the needs of the target communities and working with the MOH and CSOs in the community. However there are a few recommendations for consideration in future projects.

1. The logical framework indicators should in future be written in a manner that facilitates easy measurement for example composite indicators combining women and male partners may be biased by focusing on either male or females as opposed to having each as an indicator with targets.

2. Future projects should carefully consider the unit of measurements for indicators for example using numbers or percentages at the design stage.

3. The engagement of adolescent girls in future projects should take cognizance of their complexities in the project design to adequately cover prevention and response to issues such pregnancy, child birth, MYICN etc. For example future projects could consider engaging adolescent girls in settings other community settings such as schools and religious settings like churches and mosques for wider reach.

4. The budgeting in future projects should include protective gear such as gum boots, umbrellas and rain coats for CHVs.

3.10 Lessons Learnt

The lessons learnt in Nawiri project include but not limited to the following:

7. Working with communities as drivers of change rather than recipients of change enhances sustainability and yields better results
8. Projects in response to the felt needs are more accepted by the stakeholders and likely to be successful and sustainable.
9. Involvement of relevant government department from the project development, planning and implementation provides a better partnership has far reaching positive effects.
10. Well trained Community Health Volunteers can bridge the gaps in community health and nutrition programmes.
11. Engagement of top political leadership in programmes facilitates policy change
12. Male champions are the best influencers of gender attitude change in the community.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Conclusions

1 This evaluation has found compelling evidence that the Nawiri Project implementation partnership between the consortium of CARE, FHOK, KMET in partnership with government, local CSOs and communities has worked well in Siaya County to deliver sustained nutrition interventions over the three-year project period. There was effective buy-in and leadership at county, Sub-county and community levels; which ensured institutional support for project implementation.

2 Nawiri project design and implementation was found to be very relevant to the needs of Siaya County in general and aligned to the national nutrition policy. The targeting of county, Sub-counties and local communities ensured benefits flow down in improvement of nutrition indicators for children under five years and their mothers as well as gender equity through male partners involvement with potential positive impact on maternal, infant and young children's morbidity and mortality.

3 The project was efficiently implemented through well-coordinated partnerships in the consortium (CARE, FHOK and KMET), County government and local Civil Society Organizations (CSOs). The partnerships created synergy through complementary capacities within the consortium and community engagement through indigenous grass-roots CSOs within the communities.

4 Nawiri project was effectively implemented evidenced by the high level engagement with both the political class and technical team in Siaya County facilitated development of policy framework for implementation of nutrition programmes in Siaya County such as development of CNAP and CCINP. The project engineered a sustainable framework for increased budget allocation for nutrition interventions. This was done through policy and county level capacity enhancement in budgeting for nutrition programmes through the development of the Costed County Integrated Nutrition Plan (CCINP), changing gender norms with men involved through SAA exhibiting attitude change towards gender productive and reproductive work. However, more time is required to develop a critical mass of men to facilitate sustainable change.

5 Early Childhood Education (ECD) component of the project was linked with PATH ECD programme to create synergy in the county.

6 The project sustainability is engrained in the strengthened health systems at all levels. At the county, through the County Health committee for ratification and/or development of nutrition policies, County and Sub—county health management teams and at community level though community strategy.

7 The project has increased capacity of the health workers to implement MIYCN activities through CMEs to enable them integrate nutrition activities in their work. However, there is need for professional nutritionists for the health facilities for more effective prevention diagnosis and treatment of malnutrition.

8 Although Nawiri Projects has influenced the county to provide MIYCN budget in the health budget, the nutrition unit has limited access to the funds due to lack of budget code for nutrition activities.

9 The project effectively engaged the county government through advocacy and capacity building initiatives. The project is however, closing before the health bill in support nutrition unit's budget code is passed. The budget code will in turn enable the implementation of the CICNP which is critical for sustainability of nutrition outcomes realized in the project.

4.2 Recommendations:

1. Since the study identified nutrition as key to reduction of diseases, developing and sustaining nutrition services through resource allocation and increasing nutrition workforce would effectively improve nutritional outcomes.
2. Beneficiaries are positive that Nawiri Project tremendously led to adoption of healthy practices by Siaya residents. Therefore such targeted-health nutrition projects decentralized within communities would enhance awareness and greatly reduce morbidity and mortality across age groups at regional, national and international level.
3. Linking the government, public and private partners through active participation would broaden coverage, support continual delivery and implementation of beneficial health services to the community such as Vitamin A intake.

County Government

7. County government through the health committee should consider fast tracking of the Nutrition Bill to enhance sustainability of the nutritional gains.
8. County government should consider providing a budget code for Nutrition unit to facilitate funding of nutrition programmes.
9. County government should consider increased budget to fund the CCINP for improved nutrition indicators.
10. County government should consider increment of human resource for health (HRH) for nutrition.
11. Consider strengthening the public- private partnerships (PPP) through nutrition technical working group (TWGs) and stakeholder forums to broaden coverage, support continual delivery and implementation of beneficial health services to the community such as Vitamin A intake.
12. Consider strengthening adolescent sexual and reproductive programmes to address teenage pregnancies and address the challenges teenage mothers.

CARE and Partners

3. Future projects working with adolescent girls should consider their unique and complex circumstances to provide solutions like linkage to rescue centers to provide temporary shelters as their issues are sorted.
4. Future projects should consider mapping out stakeholders with challenges in receiving mobile money transfer to avoid delays or loss of allowances when they use well-wishers phones

5.0 List of Annexes including:

5.1 Terms of reference

EndTerm
Evaluation_Nawiri_15

5.2 Data collection tools


KII Project Staff.doc


KII - ER 1- Health Commitee and CHMT


KII -ER 2-Health care Providers.24.03.19.d


FGD-ER 3-CHWsM2MsOutreach


ETE Quantitative tools for House Hold I

5.3 List of Documents Reviewed

Project Documents

1. Nawiri project Proposal
2. Nawiri Project Revised Logical Framework
3. Nawiri Year 1 Interim Report
4. Nawiri Year 2 Interim Report
5. Nawiri Year 3 Quarter 3 Interim Report
6. Nawiri Project Baseline Survey Report
7. Nawiri Project Mid-Term Evaluation Report

Other References

1. Bilukha, O., Prudhon, C., Moloney, G., Hailey, P., & Doledec, D. (2012). Measuring anthropometric indicators through nutrition surveillance in humanitarian settings: options, issues, and ways forward. Food and nutrition bulletin, 33(2), 169-176.
2. Brown, K. H. (2003). Diarrhea and malnutrition. *The Journal of nutrition*, *133*(1), 328S-332S.
3. Brown, Joe, Sandy Cairncross, and Jeroen HJ Ensink. "Water, sanitation, hygiene and enteric infections in children." *Archives of disease in childhood* 98.8 (2013): 629-634UNICEF. Childinfo Database. http://www.childinfo.org/low_birthweight_table.php.
4. Dangour, A. D., Watson, L., Cumming, O., Boisson, S., Che, Y., Velleman, Y., ... & Uauy, R. (2013). Interventions to improve water quality and supply, sanitation and hygiene practices, and their effects on the nutritional status of children. Cochrane Database of Systematic Reviews, (8).
5. Kimani-Murage, E. W., Madise, N. J., Fotso, J. C., Kyobutungi, C., Mutua, M. K., Gitau, T. M., & Yatich, N. (2011). Patterns and determinants of breastfeeding and complementary feeding practices in urban informal settlements, Nairobi Kenya. BMC public health, 11(1), 396.
6. Mbugua, S., Musikoyo, E., Ndungi, F., Sang, R., Kamau-Mbuthia, E., & Ngotho, D. (2014). Determinants of diarrhea among young children under the age of five in Kenya, evidence from KDHS 2008-09. African Population Studies, 28, 1046-1056.
7. Munos, M. K., Walker, C. L. F., & Black, R. E. (2010). The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. *International journal of epidemiology*, *39*(suppl_1), i75-i87.
8. World Health Organization (WHO) Community-based Strategies for Breastfeeding Promotion and Support in Developing Countries. Geneva: WHO, 2003
9. WHO. WHO (2006). Global Database on Child Growth and Malnutrition. Department of Nutrition for Health and Development (NHD), Geneva, Switzerland. http://www.who.int/nutgrowthdb/en/.
10. WHO. Child Growth Standards, publications and peer-reviewed articles. http://www.who.int/childgrowth/publications/en/.

5.4 List of respondents interviewed

Key Informant Interviews (KIIS)

Nawiri Project Staff

S/N	Name	Designation	Organization	Telephone Contact
1.	Lilian Kong'ani	Project Manager	CARE	0723966271
2.	Dorothy Owiyo	Project Officer	CARE	0709748125
3.	Debra Otambo	Advocacy and Investment Project Officer	KMET	0726527351
4.	Andrew Ouma	Assistant Project Officer	FHOK	0722144067

Ministry of Health and Members of County Assembly

S/N	Name	Designation	Organization	Telephone Contact
1.	Hon Abigael	MCA(Chair Health Committee)	Siaya County Assembly	0722228172
2.	Dr. Kenneth Orwenjo	County Director of Health	Siaya County	
3.	Osca Kambona	County Nutrition Coordinator	Siaya CHMT	0721540678
4.	Dr. Felix Tindi	SCMOH	Gem SCHMT	0725748918
5.	Dr. Peter Omoth	SCMOH	Bondo SCHMT	
6.	Caroline Juma		Nyenye Misori Dispensary	
7.	Janet Sika	Sub-County Nutrition Officer	Gem SCHMT	0727267234
8.	George Agola	Sub-County Nutrition Officer	Bondo SCHMT	0721645725
9.	Lorraine Ochieng	Sub-County Nutrition Officer	Rarieda SCHMT	0711936716
10.	Bilha Mongare	Health facility In Charge /MIYCN TOT	Ndere Health Center	0727030989
11.	Levina Emojong	Nurse In Charge	Pap Kodero Health Center	
12.	Simon Okoth	Nutrition Officer	Madiany SC Hospital	0718387422
13.	Isaac Mogusu	Nurse In Charge	Saradidi Health Center	0722693835
14.	Edwin Otieno Kojo	Community Health Assistant /MIYCN TOT	Saradidi Health Center	0727120176
15.	Emily Chepkorir	Nurse/ MIYCNTOT	Wagai Healh Center	0727506231
16.	Martin Apiyo	Community Health Assistant /MIYCN TOT	Rambogo Health Center	0727950538
17.	Esther Kelly	Nutrition Assistant	Pap Kodero Health Center	0723406694
18.	Evelyne Mwalo	TOT MIYCN	Bondo Health Centre	
19.	Michael Olombe -	Nurse In Charge Uyawi	Uyawi Health Centre	

S/N	Name	Designition	Telephone Contact
1.	Richard Miruka	ECD motivator (PATH)	0711857045
2.	Stephen Awange	Male Champion, Bondo	

Focus Group Discussions (FGDs)

Community Health Volunteers

S/N	Name	Designation	Organization	Telephone Contact
1.	Mercy Atieno	CHVs	Pap Kodero -Gagra East	0702202526
2.	Fenny Anyango	CHVs	Pap Kodero -Langi North	0798112747
3.	Elida Ndire	CHVs	Pap Kodero - Lamgi South	072988292
4.	Maureen Akal	CHVs	Pap Kodero -Pala Buru	0706777363
5.	Rose Adet	CHVs	Pap Kodero Akele South	0701490381
6.	Monicah achola	CHVs	Pap Kodero-Pala abuor	0748152067
7.	Vitalis okwama	CHVs	Pap Kodero Abondo south	0705637086
8.	Janet Amollo Opondo	CHVs	Wagai Health Center	0723616362
9.	Sarah Ogutu Odok	CHVs	Wagai Health Center	0715048157
10.	Merab Onyango Wayodi	CHVs	Wagai Health Center	0719632528
11.	Tabitha Atieno Olweny	CHVs	Wagai Health Center	07064639112
12.	Joyce M Osure	CHVs	Wagai Health Center	0710897356
13.	Eunice Atieno Owele	CHVs	Wagai Health Center	0729243925
14.	Molly Akinyi Samo	CHVs	Wagai Health Center	0700174574
15.	Eunice Adhiambo Omondi	CHVs	Wagai Health Center	0727487268
16.	Enika Mideva Ouma	CHVs	Ndere Health Center	0715583137
17.	Ursullah Anyango Wokuri	CHVs	Ndere Health Center	0721169465
18.	Millicent Auma Bunde	CHVs	Ndere Health Center	0712578368
19.	Pamela Adhiambo Owel	CHVs	Ndere Health Center	0728943101
20.	Peninah Auma Omondi	CHVs	Ndere Health Center	0707216583
21.	Pamela Aketch Opollo	CHVs	Ndere Health Center	0715139641
22.	Hellen Akinyi Ogolla	CHVs	Ndere Health Center	0719524252
23.	Hellen Adhiambo Onyango	CHVs	Ndere Health Center	0715220559
24.	Jane Atieno Kachero	CHVs	Ndere Health Center	0790490314
25.	Esther Achieng'	CHVs	Lihanda Health Center	0729591159
26.	Teresa Juma	CHVs	Lihanda Health Center	0718214686
27.	Pesila Odera	CHVs	Lihanda Health Center	0706 286294
28.	Anne Akinyi	CHVs	Lihanda Health Center	0799828604
29.	Caroline Atieno	CHVs	Lihanda Health Center	0790101599
30.	Elias Omamo	CHVs	Lihanda Health Center	0798812158
31.	Apollo Onyango Odera	CHVs	Lihanda Health Center	0791369719
32.	Anne Susan Otieno	CHVs	Lihanda Health Center	0705331843
33.	Judith Anyango Oloo	CHVs	Lihanda Health Center	0795453775
34.	Sylvia Auma Odunga	CHVs	Lihanda Health Center	0720241619
35.	Alice Angira	CHVs	Lihanda Health Center	0720468292
36.	Stephen Omollo	CHVs	Lihanda Health Center	0723896633
37.	Judith Atieno	CHVs	Bar Kawaga	0791902937
38.	Silver Aoko.	CHVs	Bar Kawaga	0718503156
39.	Jacklin Okinyo	CHVs	Bar Kawaga	0745219762
40.	Naomi Atieno	CHVs	Bar Kawaga	0718128118

S/N	Name	Designation	Organization	Telephone Contact
41.	Lilian Anyango	CHVs	Bar Kawaga	0729295904
42.	Consolata Aluoch	CHVs	Bar Kawaga	0711525404
43.	Evaline Mwajuma	CHVs	Bar Kawaga	
44.	Elizabeth Omondi	CHVs	Bar Kawaga	0792885060
45.	Jane Atieno	CHVs	Bar Kawaga	0740597979
46.	Maureen Atieno	CHVs	Bar Kawaga	0717261214

Mothers to Mothers Groups

S/N	Name	Organization	Telephone Contact
1.	Josinta Awino Opiyo	Nyasidhi M2M -Wagai Health Centre	0710354490
2.	Margaret A. Omondi Owiti	Nyasidhi M2M -Wagai Health Centre	0706131933
3.	Berlinda Ngesa	Nyasidhi M2M -Wagai Health Centre	0795189997
4.	Jane Achieng Otieno	Nyasidhi M2M -Wagai Health Centre	0729775018
5.	Hellen Adhiambo Odhiambo	Nyasidhi M2M -Wagai Health Centre	0700029873
6.	Everline Atieno	Nyasidhi M2M -Wagai Health Centre	0791754570
7.	Eunice Akoth Asindi	Nyasidhi M2M -Wagai Health Centre	0719389985
8.	Sharon Achieng' Ombuor	Nyasidhi M2M -Wagai Health Centre	0795380615
9.	Quinter Anyango	Nyasidhi M2M -Wagai Health Centre	0740365024
10.	Beatrice Atieno	Nyasidhi M2M -Wagai Health Centre	0729691959
11.	Brenda Achieng	Nyasidhi M2M -Wagai Health Centre	0705536968
12.	Rose Opiyo	Nyasidhi M2M -Wagai Health Centre	0701493119
13.	Mary Okello	Chamakwaro M2M Support Group	0721787407
14.	Caroline Nam	Chamakwaro M2M Support Group	0714528540
15.	Maurine Akoth	Chamakwaro M2M Support Group	0703819418
16.	Millicent Adhiambo Osuka	Chamakwaro M2M Support Group	0735720192
17.	Beatrice Awuor Odundo	Chamakwaro M2M Support Group	0707666019
18.	Irene Achieng	Chamakwaro M2M Support Group	0746160514
19.	Elizabeth Irene Akinyi	Chamakwaro M2M Support Group	0729989238
20.	Belinda Achieng Ouma	Chamakwaro M2M Support Group	0706118865
21.	Pamela Adhiambo Ochieng	Chamakwaro M2M Support Group	0708962019
22.	Diborah Atieno Oloo	Chamakwaro M2M Support Group	0702043811
23.	Pauline Akinyi	GOBEI M2M	0704995829
24.	Roseline Achieng	GOBEI M2M	0724298921
25.	Jane Akinyi	GOBEI M2M	0799651244
26.	Pauline Awino	GOBEI M2M	0796418065
27.	Mical Akoth	GOBEI M2M	0712075282
28.	Lucy Auma Akello	GOBEI M2M	0719253493
29.	Roseline Akoth Ochieng	GOBEI M2M	0700412460
30.	Alice Atieno Owiti	GOBEI M2M	0740094897
31.	Pamela Atieno Okongo	GOBEI M2M	0717108296

Civil Society Organizations (CSOs)

S/N	Name	Organization	Telephone Contact
1.	Susan Atieno Sadia	Siala Koduol Peer Educators CSO	0702361703
2.	Keziah Adhiambo Madala	Siala Koduol Peer Educators CSO	0715841593
3.	Jared Omondi	Siala Koduol Peer Educators CSO	0713288235
4.	Seline Awuor	Siala Koduol Peer Educators CSO	0716900259
5.	Victor Bernard Omondi Otuoma	Siala Koduol Peer Educators CSO	0719461904
6.	Zachary Inda Ogutu	Siala Koduol Peer Educators CSO	0721522932
7.	Janet Akinyi Otieno	CSO Rachar Youth Group	0701540548
8.	Alice awinja ochieng	CSO Rachar Youth Group	
9.	Grace achieng ochieng	CSO Rachar Youth Group	070486528
10.	Beatrice emilly akinyi	CSO Rachar Youth Group	070870428
11.	Benter akinyi oduor	CSO Rachar Youth Group	0792697334
12.	Lilian akinyi nyeyan	CSO Rachar Youth Group	0705453058
13.	Rose auma okadho	CSO Rachar Youth Group	0717877204
14.	Linet akinyi ouko	CSO Rachar Youth Group	0792749628
15.	Elizabeth magolo	CSO Rachar Youth Group	0707488471
16.	Winnie adhiambo omondi	CSO Rachar Youth Group	0785005384
17.	Yvone oketch oduda	CSO Rachar Youth Group	0704447374
18.	Selah awuor ochieng	CSO Rachar Youth Group	
19.	Millicent anyango omondi	CSO Rachar Youth Group	0706232720
20.	Lilian auma ouma	CSO Rachar Youth Group	0705065239
21.	Beatrice akinyi	CSO Rachar Youth Group	0717164098

Male Champions

S/N	Name	Organization	Telephone Contact
3.	Stephen Awange		
4.	Phabias Wanjala	Siala Kaduol	0702935638
5.	Mourice Odhiambo	Siala Kaduol	0757875080
6.	Jared Omondi Okal	Siala Kaduol	0713288235
7.	Zachary Inda Ogutu	Siala Kaduol	0721522932
8.	Anthony Ochieng'	Siala Kaduol	0706513918
9.	Victor Benard O. Otuoma	Siala Kaduol	0719461904
10.	Tom mboya-	RACHAR	0702514329
11.	Isaac odhiambo Manyala-	RACHAR	0708193213
12.	Wilfred Odhiambo	RACHAR	- 0717800184
13.	Joseph Odhiambo Okwiri-	RACHAR	0704160869
14.	Thomas Otieno Kanyanda-	RACHAR	0723391852
15.	Gabriel Omondi	Bar Kawaga	070728916092
16.	John Omondi	Bar Kawaga	0727236227
17.	Dickens Oyieko	Bar Kawaga	0719674420
18.	Vincent Ochieng	Bar Kawaga	0716461169
19.	Fredrick Oduor	Bar Kawaga	0792298957

S/N	Name	Organization	Telephone Contact
20.	Stanlaus Owiti	Bar Kawaga	07257777839
21.	Elly Okanga	Bar Kawaga	0729429264
22.	Albert Adur Omindo	Usoko Awuor Nyamira	0710133721
23.	Fredrick Odhiambo Omwodo	Usoko Awuor Nyamira	0716802195
24.	Enock Odhiambo Omolo	Usoko Awuor Nyamira	0725373956
25.	Dickens Odhiambo Otieno	Usoko Awuor Nyamira	0792581467
26.	Albert Aduor Migaya	Usoko Awuor Nyamira	0710131642
27.	Marcellus Matthews	Usoko Awuor Nyamira	0711475221
28.	Levis Fredrick Ochieng	Usoko Awuor Nyamira	0792480602
29.	Benard Odhiambo Bala	Usoko Awuor Nyamira	0746413962
30.	Maxwel Wasonga Openje	Usoko Awuor Nyamira	0743093945
31.	Bonfas Otieno	Usoko Awuor Nyamira	0712663451
32.	Antoney Obondo Odero	Usoko Awuor Nyamira	0724614056
33.	Francis Ayero Winga	Usoko Awuor Nyamira	0791706501
34.	Marrel Owiti	Usoko Awuor Nyamira	0757259587

Training Of Trainers (TOTS)

S/N	Name	Organization	Telephone Contact
1.	Nancy Awuor Okumu	Jerusalem Ogam	0715366718
2.	Alice Akumu Oloo	Jerusalem Ogam	0700650788
3.	Jocintan Adhiambo Aluoch	Jerusalem Ogam	0724127268
4.	Beatrice Atieno Ochinga	Jerusalem Ogam	0723728169
5.	Judith Odwaro	Jerusalem Ogam	0704340166
6.	Roseline Otimbo	Jerusalem Ogam	0700190025
7.	Ascar Odino	Ulusi SAA	0743374427
8.	Peter Ouyo	Ulusi SAA	0720666544
9.	Caroline Achieng	Ulusi SAA	0700735734
10.	Mary Adhiambo	Ulusi SAA	0716529538
11.	Trezah Atieno	Ulusi SAA	0792762073
12.	Kennedy Otieno	Ulusi SAA	0796681425
13.	Dancan Owino	Ulusi SAA	0703580112
14.	Judith Atieno Odimo	Ulusi SAA	0728613561
15.	Caroline Mitto	Ulusi SAA	0726049424