

Exploring the Acceptability and Feasibility of Integrating Vitamin A Rich Sweetpotato into Ante-Natal Care Services in Western Kenya: Results from Operations Research Conducted during the Implementation Phase of the Mama SASHA Project

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2018-1 Working Paper



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Comments are invited.

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ISSN: 0256-8748

DOI: 10.4160/02568748CIPWP20181

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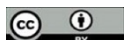
Citation:

Machira, Y.W. (2018). *Exploring the Acceptability and Feasibility of Integrating Vitamin A Rich Sweetpotato into Ante-Natal Care Services in Western Kenya: Results from Operations Research Conducted during the Implementation Phase of the Mama SASHA Project*. Social Sciences Working Paper 2018-1. Lima, Peru: International Potato Center.

Design and Layout:

Lilia Salinas

CIP also thanks all donors and organizations that globally support its work through their contributions to the CGIAR Trust Fund: www.cgiar.org/funders



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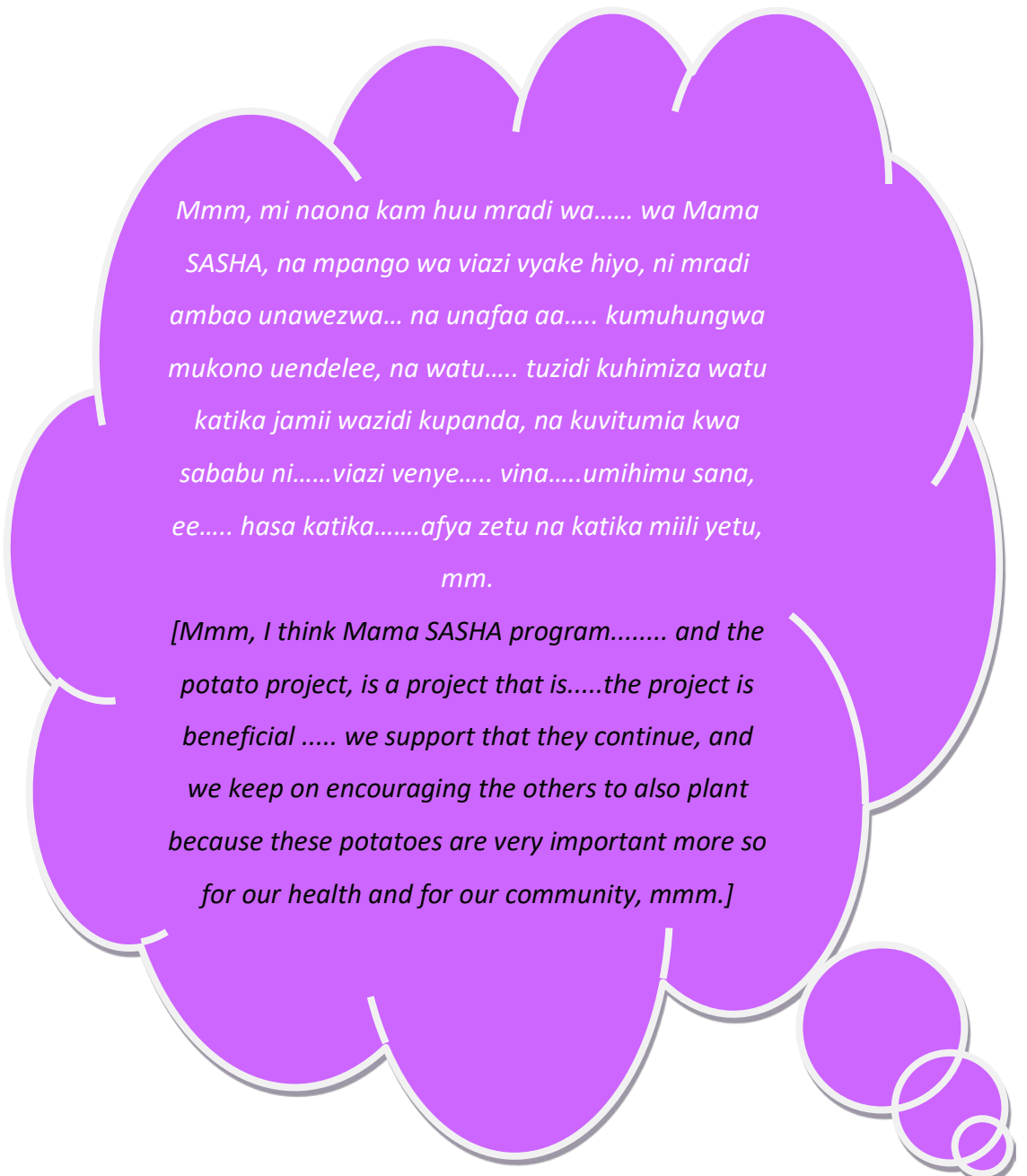
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ACRONYMS

AEO	Agriculture Extension Officer
ANC	Ante-natal Care
APHIA	AIDS, Population and Health Integrated Assistance Program
ARDAP	Appropriate Rural Development Agriculture Programme
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CHEW	Community Health Extension Worker
CHW	Community Health Worker
CIP	Centro Internacional de la Papa - International Potato Center
CREADIS	Community Research in Environment and Development Initiatives
DALY	Disability Adjusted Life Year
DHMT	District Health Management Team
DiD	Difference-in-Difference
EDD	Enhanced Diarrheal Disease
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussion
IEC	Information, Education and Communication
ICF	Informed and Consent Form
IYCN	Infant and Young Child Nutrition
KARI	Kenyan Agricultural Research Institute
KES	Kenya Shillings
MDG	Millennium Development Goal
MoA	Ministry of Agriculture
MoH	Ministry of Health
MoPHS	Ministry of Public Health and Sanitation
MoU	Memorandum of Understanding
MS Word	Microsoft Word
NC	Nutritional Counselling

NCST	National Council of Science and Technology
NGO	Non-governmental Organisation
OFSP	Orange-fleshed Sweetpotato
OR	Operations Research
PATH	Program for Appropriate Technology in Health
PIT	Project Implementation Team
PHO	Public Health Officer
PNC	Post-Natal Care
PoCP	Proof-of-Concept Project
PWC	Pregnant women’s club
RA	Research Assistant
RDA	Recommended Daily Allowance
RDC	Research Development Committee
SASHA	Sweetpotato Action for Security and Health in Africa (SASHA)
SP	Sweetpotato
SSI	Semi-structured Interview
ToR	Terms of Reference
UNICEF	United Nations Children’s Fund
VAD	Vitamin A Deficiency
VM	Vine Multiplier
WHO	World Health Organization



Mmm, mi naona kam huu mradi wa..... wa Mama SASHA, na mpango wa viazi vyake hiyo, ni mradi ambao unawezwa... na unafaa aa..... kumuhungwa mukono uendelee, na watu..... tuzidi kuhimiza watu katika jamii wazidi kupanda, na kuvitumia kwa sababu ni.....viazi venye..... vina.....umihimu sana, ee..... hasa katika.....afya zetu na katika miili yetu, mm.

[Mmm, I think Mama SASHA program..... and the potato project, is a project that is.....the project is beneficial we support that they continue, and we keep on encouraging the others to also plant because these potatoes are very important more so for our health and for our community, mmm.]

ABSTRACT

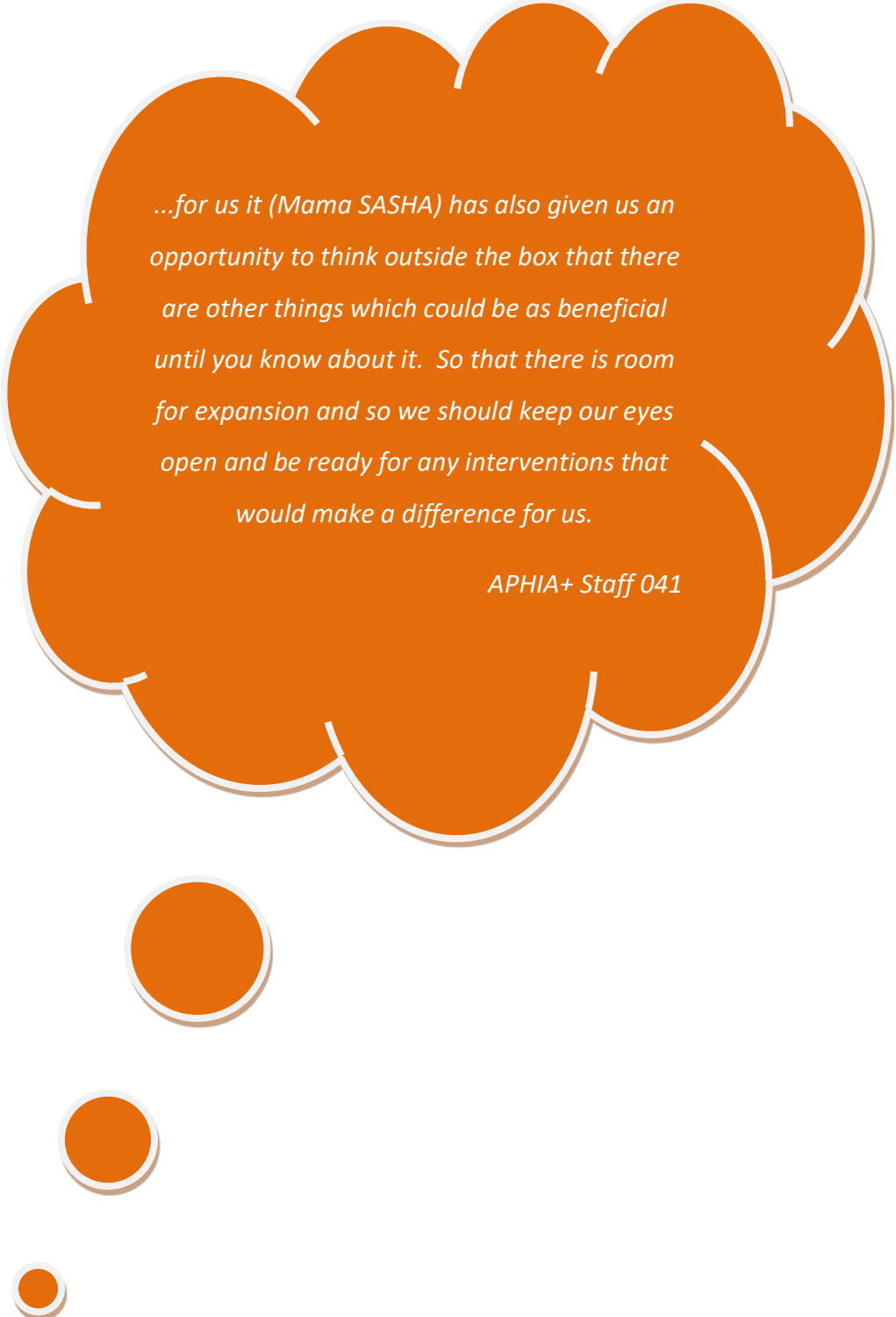
Background and Objectives: This study presents findings on the acceptability and feasibility of an integrated nutrition, agriculture and health intervention that delivers vitamin A rich, orange-fleshed sweetpotato (OFSP), through Antenatal Care (ANC) services with the goal of improving the health and nutrition of pregnant women and their infants in Western Kenya.

Methods: We explored the feasibility and acceptability of the intervention through 42 interviews with nurses, Community Health Extension Workers (CHEW), vine multipliers (VM), agriculture extension agents, both from the Ministry of Agriculture (MoA) and non-Governmental Organization (NGO) partners, and district-level health and agriculture officials as well as Chiefs; and 24 focus group discussions with Community Health Workers (CHW), pregnant and lactating women, and their husbands. Qualitative data was transcribed verbatim and analysed using NVivo 10.0. Content analysis was used to identify key topics, relational analysis to examine relationships between themes and respondents.

Results: Enhanced maternal and child health coupled with food security were the most recognized benefits by respondents. Mothers felt their children were less susceptible to disease and more energetic; they and their partners also valued OFSPs' shorter maturity and higher yields. Frontline health workers perceived higher ANC attendance and increased contact between mothers, their partners and children with the health system. All implementers were motivated by enhanced training, more effective nutrition messaging, tangible recommendations to improve dietary quality, community recognition, and ability to better serve their clients. CHWs emerged as key facilitators of implementation and outreach to mothers. Challenges to implementation and uptake included mothers' distance to ANC and VMs, misperceptions such as OFSP having contraceptive properties, the need for continuous community sensitisation, and increased workload without commiserate remuneration for CHWs and VMs.

Conclusions: Perceived benefits and motivating factors among key stakeholders outweighed challenges of integrating OFSP with ANC services. These findings contribute to other evaluation activities that assess effectiveness, feasibility and acceptability of this integrated agriculture and health intervention.





...for us it (Mama SASHA) has also given us an opportunity to think outside the box that there are other things which could be as beneficial until you know about it. So that there is room for expansion and so we should keep our eyes open and be ready for any interventions that would make a difference for us.

APHIA+ Staff 041

BACKGROUND

People living in rural households in developing countries face a myriad of challenges in achieving healthy and productive lives. Achieving household food security often comes at the expense of not addressing complementary health and nutrition needs for those who need them the most - pregnant women, newborns, and children less than five years of age.

Micronutrient deficiencies contribute to around 9 percent of global childhood disability-adjusted life years (DALYs), with vitamin A deficiency (VAD) responsible for 0.6 million deaths. Sub-saharan Africa is one of the regions with the highest estimated prevalence rates of sub-clinical VAD [1]. Children less than five years of age and pregnant and lactating women are at greatest risk of VAD. A recent World Bank nutrition assessment concluded that the best opportunity for addressing malnutrition is during the period prior to conception until two years of age [2]. This is based on findings from the research community that children younger than two years are more vulnerable and at risk of developing malnutrition, and that they tend to respond more to interventions than older children. Infants are naturally born with a two-week supply of vitamin A and in undernourished settings, serum retinol is likely to remain low during the first half of infancy as mothers may also be vitamin A deficient during breastfeeding [3]. Consequently, while children between the ages of 6 and 24 months experience maximum expected growth, they are also at the greatest risk of growth faltering due to inappropriate complementary feeding practices and high susceptibility to infectious diseases, especially diarrhea. The early months of life are considered critical for building up vitamin A stores to a level that will be sufficient for the prevention of VAD in the postweaning period [3]. By maintaining children's growth at a higher level throughout this 6- to 24-month period, it is expected that not only short-term, but also long-term benefits for growth will be achieved.



Undernutrition often starts *in utero* (intrauterine growth retardation) and results in low birth weight, which is associated with a high risk of dying in the neonatal period. Therefore, it is important to improve maternal well-being through ANC interventions, including dietary advice and improved access to diversified foods. In poor rural communities, VAD can have multiple causes: inadequate vitamin A intake because the sources of vitamin A are lacking in the diet, inadequate absorption of vitamin A due to the presence of parasites or diarrhea, or increased use of vitamin A to combat diseases such as measles and malaria. Supplementation and food fortification are among the direct biomedical nutrition interventions that are being promoted to address global malnutrition and the

Millennium Development Goals (MDGs) to reduce underweight prevalence by 50 percent by the year 2015. While direct nutrition interventions are important, improving and sustaining health and productivity require measures that include agriculture and local community action.

During the past decade, strong evidence has shown the potential impact of orange-fleshed sweetpotato (OFSP) on young child vitamin A status [4-8]. A South African study demonstrated that OFSP is bioavailable and efficacious in improving vitamin A status in children [9] and significant improvements in vitamin A intake and serum retinol concentrations (a proxy for vitamin A status) were obtained from an action-research study of an OFSP-based integrated agriculture-nutrition-market intervention in a very resource-poor setting in Central Mozambique [10]. A third study [11] using the isotopic tracer deuterated retinol to estimate total vitamin A stores in 14 Bangladeshi men determined a conversion factor of 13:1 for OFSP when it was cooked pureed with a small amount of oil.



OFSP as a staple food can supply significant amounts of vitamin A and energy simultaneously, thus helping to address both VAD and undernutrition. Since the poorest households typically obtain more than 60 percent of their energy needs from food staples, a strategy to increase both the production and consumption of OFSP is particularly suited to poor rural households that may not have access to fortified products sold in the market. OFSP cultivation complements vitamin A capsule distribution in sub-Saharan Africa. The store of vitamin A created by capsules is often depleted four months after ingestion, requiring something to fill the gap. Children above one year often do not attend clinics as regularly as those below one year; hence, they have poorer capsule access if the vitamin A capsules are being distributed through routine services.

The Sweetpotato Action for Security and Health in Africa (SASHA) is a five-year multi-partner project led by the International Potato Center (known by its Spanish acronym, CIP - Centro Internacional de la Papa) designed to improve the food security and livelihoods of poor families in sub-Saharan Africa by exploiting the untapped potential of sweetpotato. The agriculture-health linkages proof-of-concept Mama SASHA project in Western Province of Kenya (PoCP Western) is one of SASHA's research projects. Mama SASHA is implemented and evaluated in partnership with CIP, PATH, the Kenya Agriculture Research Institute (KARI), local agriculture and health government stakeholders in Western Province, and two local agricultural NGO partners, (i.e., the Community Research in Environment and Development Initiatives [CREADIS] and the Appropriate Rural Development Agriculture Programme [ARDAP]). CIP is responsible for the overall evaluation of the impact of the project, which will occur through a longitudinal cross sectional survey to meet objectives (1) and (3) below. PATH is supporting the project's evaluation activities through conducting operational

research on the feasibility, acceptability, and sustainability of the intervention among stakeholders and beneficiaries in the participating communities. The project model is illustrated in [Figure 1](#).

Figure 1: Mama SASHA PoCP Approach

Implementation Details	Intervention Sites	Control Sites
Provincial & District Support	Stakeholder workshops/consultation	
	Network of agricultural extension agents, vine multipliers and CHWs	
Health Facility Activities	Screening and adaptation of existing nutrition and agricultural training and IEC material	Standard training of health facility staff, as per government guidelines, that emphasises breastfeeding and the basic food groups
	Standard <i>and</i> enhanced training of health facility staff, the latter covers nutritional aspects of OFSP, vitamin A rich foods in general, nutrition for pregnant and lactating mothers	
	Distribution of vouchers to women attending ANC and PNC	
Community Based Activities	Standard <i>and</i> enhanced training as for health facility staff	Standard training as for health facility staff
	Set up of PMCs in communities and led by CHWs	CHWs run standard linkage activities in the community
	Training of vine multipliers and agriculture extension agents	
	Vines accessed with vouchers provided	
	Advice on OFSP management practices provided by vine multipliers and agriculture extension agents	
	Field days around OFSP	
Outcomes	Proportion of women continually using ANC services (up to 2 visits per pregnant woman) increases by at least 25%	Proportion of women continually using ANC services (up to 2 visits per pregnant woman) increases by at least 15%
	Proportion of mothers using PNC services up to 4 per newborn/infant increases by at least 25%	Proportion of mothers using PNC services up to 4 per newborn/infant increases by at least 15%
	Frequency of OFSP consumption by mother and children per week increased by 100%	Frequency of OFSP consumption by mother and children per week increased by 50%
	Proportion of pregnant women with adequate iron status increased by at least 15%	Proportion of pregnant women with adequate iron status increased by at least 5%
	Proportion of pregnant women with adequate weight gain increased by at least 25%	Proportion of pregnant women with adequate weight gain increased by at least 15%
	Prevalence of underweight weight-for-age (WAZ) reduced by at least 10% in children up to 2 years of age	No detectable change expected in underweight weight-for-age (WAZ) in children up to 2 years of age
	Prevalence of stunting height-for-age (HAZ) reduced by at least 5% in children up to 2 years of age	No detectable change expected in underweight height-for-age (HAZ) in children up to 2 years of age

The overall Mama SASHA project goal is to improve the health status of pregnant women and the nutritional status of children up to two years through an integrated OFSP and health service-delivery strategy through an existing health program (AIDS, Population and Health Integrated Assistance Program, formerly APHIA II (and now APHIA Plus) in Bungoma and Busia counties of Western Kenya. To meet these goals, the project has three main objectives:

To understand the costs and benefits of linking an integrated OFSP agricultural-nutritional intervention to a health service-delivery system serving pregnant women and the degree of intensity of the nutrition intervention required to achieve impact on the subsequent newborns as well as their mothers.

To strengthen aspects of existing information, education, and communication materials and methods to support sustainable OFSP production and consumption at both the health facility and community levels (improve the knowledge and practices of health workers, agricultural extension agents, and beneficiaries on OFSP and vitamin A rich foods).

To improve the evidence base of the health impacts and use of health services of promotion of a sustainable delivery system for high-yielding OFSP through community- and facility-based health services.

The integrated approach to date has introduced OFSP as a new source of vitamin A and energy; created demand for OFSP through improved nutrition knowledge; and expanded markets through linking farmers, and consumers. Evaluations of a range of OFSP production and consumption promotion approaches have been completed or initiated [12], yet two questions remain:

1. Will OFSP and associated vitamin A “passively” end up in infants and young children’s diets and have a significant impact on this group most at risk of VAD, without specific interventions to increase access to primary health care services and to change young child feeding and care practices?
2. Can linking an agricultural-nutrition intervention more explicitly to health services substantially increase impact on vitamin A intakes and VAD status than just health service access alone?



To begin to address these questions, in 2010, a first round of Operations Research (OR) [13] was conducted as part of the pilot implementation of the project. The OR included a mix of qualitative methods to inform the final intervention design and refinement before proceeding with full implementation in the second wave that began in the first quarter of 2011. It also included quantitative methods focussed on analysing secondary ANC data from the health facilities. The objective of this OR was to assess the acceptability and feasibility of integrating the introduction of OFSP into ANC services and communities to improve the health and nutrition of pregnant women and their newborns up to two years of age.

The study found that the pilot was definitely worthwhile, acceptable to actors and beneficiaries and was in principle, feasible. The evidence supported that all three project non-biological outcomes had been achieved; more women were taking up ANC/PNC services, many for the first time, and consumption of OFSP was high and gradually replacing the traditional sweetpotato (SP) varieties. It was recommended that for the project to be more successful, implementation of the second wave should strengthen male partner involvement and training mechanisms, service provision of vouchers and agronomic and nutrition support should be standardised with the support of an integrated data management system and IEC materials should be developed and provided to implementing agents and beneficiaries. [Table 1](#) provides further detail

on each of the pilot OR recommendations [13] and the summary of actions taken for each during the ongoing second wave.

Table 1: Summary of Actions Taken in the 2nd Wave Based on the Pilot OR Recommendations

<i>Pilot OR Recommendation</i>	<i>Details</i>	<i>Summary of Action Taken</i>
Enhanced Male Involvement	<ol style="list-style-type: none"> 1. Include male partner involvement mechanisms in project mobilisation and implementation. The patriarchal nature of beneficiary communities should be recognised and regular targeted meetings with and communication for men should be incorporated into the design of the project to encourage their participation in ANC visits as well as in supporting OFSP farming. 	<p>Training of men's group leaders on OFSP benefits, care for pregnant and lactating women, infant and young child feeding was carried out in mid-2011.</p>
Strengthened Training	<ol style="list-style-type: none"> 2. Conduct separate training of actors for Model 1 (M1) and Model 2 (M2) sites. Training tailored to both groups will facilitate better understanding of project requirements. This should include discouragement of referral of patients from M2 to M1 sites though geographical proximity of the health facilities should also play a part. 3. Strengthen the curriculum of the joint training of ANC, CHWs, AEOs, VMs and demo plot farmers to demonstrate the benefits of integrated training across agronomic practices for OFSP and nutrition and health counselling. 4. Implement a refresher follow-on training course for service providers after initial 3-day training to reinforce standard practices and strengthened agronomic and nutrition and health messaging. 5. Train more than one ANC Nurse per health facility to cover for absence and/or transfers. This should be preceded by management buy-in of the project to enhance its success. 6. Use a training of trainers approach for the ANC nurses in order to train other nurses at the health facility level to increase knowledge of the MAMA SASHA project. 	<p>This is no longer applicable as the Model 2 (less intensive) site strategy was dropped and replaced with control sites.</p> <p>This has been done.</p> <p>Refresher training was held in September 2011, and is an on-going activity.</p> <p>This was done, 2 to 3 nurses were trained per facility. Additionally, a few other health facility staff were oriented on project activities.</p> <p>This was done with the support of District Health Management Team (DHMT) members as trainers. They had previously undergone training to develop guides for the training. They then trained both the ANC nurses and CHWs.</p>

<i>Pilot OR Recommendation</i>	<i>Details</i>	<i>Summary of Action Taken</i>
<p>Standardised Service Provision of Vouchers and Agronomic and Nutrition support</p>	<p>7. Develop quality assurance tools, relevant regimen and indicators for service provision coupled with incentives to ensure standardised project delivery. Holding all actors (NGOs, AEOs, VMs, ANC Nurses and CHWs) accountable to specified guidelines will contribute to delivery of <i>more</i> standardised services; this should also include standardised reimbursement to VMs for vouchers across all sites. This should be done hand-in-hand with strengthened training and delivery of incentive measures. Similarly, with biological markers being an indicator in the second wave, the necessary equipment and support should be provided to health facilities.</p> <p>8. An integrated data management system should be implemented to support project delivery for enhanced performance monitoring. The system would link monitoring data from the HFs as well as that provided by the AEOs, VMs and CHWs to provide current information on project progress.</p> <p>9. In standardising project requirements and processes, sustainability measures should be implemented looking to maintain quality service delivery standards by all actors even in the absence of the project. For VMs, setting the foundation and initiating the support processes for marketing and sale of vines to the broader community should be considered.</p>	<p>Standardised vine redemption reimbursement rates for VMs have been effected across all sites.</p> <p>This is being implemented; the monitoring tools are such that they serve as checks-and-balances using the various instruments to verify information obtained from other complementary instruments.</p> <p>This is in the pipeline and is scheduled for the end of the second wave. NGO partners are putting in place measures to purchase roots from VMs for processing. Additionally, VMs have the option of selling excess vines to the community provided these do not contaminate control sites prior to the conclusion of the project.</p>
<p>Provision of IEC materials</p>	<p>10. Train on existing IEC material for implementing agents and beneficiaries and ensure they are distributed and used properly in the second phase of the demonstration project. Materials for mothers and partners should emphasise the need for timely ANC clinic attendance and EBF.</p> <p>11. Identify gaps where additional IEC material need to be developed, pre-tested and distributed, such as pamphlets for use at home to support production of OFSP by pregnant women and partners in M1 sites. New and existing IEC material should be considered as adjunct to and not a replacement of the counsel provided by the implementing actors.</p>	<p>This is on-going.</p> <p>This has been done, new materials were developed and distributed.</p>

<i>Pilot OR Recommendation</i>	<i>Details</i>	<i>Summary of Action Taken</i>
	12. Promote effective and expanded community demonstration of OFSP production through improved timing of demonstration plots so they occur earlier in the implementation phase for second wave. In the same light, consider having VMs establish a demo plot rather than having separate demonstration farmers.	An improvement has been made on the timing of field days, they are held much earlier than during the pilot. VMs in the second wave are also doubling as demonstration plot farmers.

Six months after the second wave, also known as the implementation phase, began, an OR was commissioned with similar objectives to determine acceptability and feasibility of the intervention in the target communities and with reference to the Pilot OR. In summary, the second wave of the Mama SASHA intervention is a proof of concept project that enhances antenatal health services coupled with an OFSP delivery and nutrition education strategy. The project supports (1) enhanced health services delivery and nutrition and infant and young child feeding education including the use of OFSP, (2) provides pregnant women with vouchers for OFSP vines during antenatal care (ANC) visits at health facilities, (3) establishes community-based monthly clubs for pregnant (and lactating) women, (4) selects and trains secondary vine multipliers to distribute OFSP vines to pregnant women with vouchers and support production, and (5) establishes demonstration plots for OFSP.


Currently Mama SASHA is being implemented in four intervention health facilities in Bungoma and four control health facilities in Busia counties in Western Kenya. Each facility serves approximately four sub-locations with an average of 10 villages each. Briefly, facilities from the two counties were selected according to size-related variables (number of service providers, ANC attendance numbers, and population served), coverage with CHWs linked to APHIA Plus and location criteria. The selected health facilities were then randomly assigned to intervention or control (Table 2). Communities have a 30 to 50 kilometer radius between them.



Table 2: Health facilities Involved in the SASHA PoCP, by District and Intensity Model

<i>Intervention Model</i>	<i>Health Facility</i>	<i>District/Location</i>
Intervention	Ndalu health centre	Bungoma North/Ndalu
	Naitiri sub-district hospital	Bungoma North/Mbakalo
	Sinoko dispensary	Bungoma East/Ndivisi
	Mihuu dispensary	Bungoma East/Chetambe
Control	Tongaren health centre	Bungoma North/Tongaren
	Makhonge health centre	Kimilili/Kamukuywa
	Budalangi health centre	Bunyala/Bunyala East
	Mukhobola health centre	Bunyala/Bunyala Central

This report describes the results of the OR that was conducted from April to August 2012 as part of the *implementation phase of the project*.



Many women now do attend, that is pregnant women do attend antenatal clinics and we do encourage them to, when their delivery time comes, deliveries be conducted by skilled personnel.

CHEW 022

OPERATIONS RESEARCH PLAN

In 2010, operational research was conducted in health facilities and communities in Bungoma and Busia counties, as part of the pilot phase of the project to inform the final design of the intervention. This second round of operational research was conducted to provide information on the feasibility and acceptability of a linked agriculture and health intervention. Given that control sites had already been identified for the impact evaluation, the operational research was conducted in both the intervention and control sites. In the control sites the questions will be focussed on potential factors affecting acceptability and feasibility and did not explicitly ask about the Mama SASHA project activities.

1. What factors affect the **acceptability** of integrating an OFSP intervention into a health service strategy?
 - a. What is the acceptability among CHWs?
 - b. What is the acceptability among health facility based workers, particularly ANC nurses and community health extension workers (CHEWs)?
 - c. Is it acceptable to distribute vouchers or vines to pregnant or lactating women and their partners?
 - d. What is the consumer perception of maternal and child health services provided at the health facility?
 - e. What factors affect participation in vine multiplication and managing demonstration plots at the community level?
 - f. What is the acceptability among agriculture extension officers and their superiors to support communities and CHWs?
2. What factors affect the **feasibility** of integrating an OFSP intervention into a health service strategy?
 - a. What is the impact on health care workers' including CHWs' time? What additional training is needed to implement this component?
 - g. What is the feasibility of distributing vouchers for vines and increasing nutrition education at the facility? What is the impact on health worker time and the length of ANC visit per woman? What are the training requirements? What incentives are needed for health workers to add on this activity? How well did the modalities of the voucher system work out?
 - h. What resources and capacity are needed to establish and maintain vine multiplication and demonstration plots at the community level?

- i. What are the factors that affect government agriculture extension officer participation and collaboration with local health authorities at the community level? What are the logistical challenges?
 - j. What is the perception of the facilitation, content, and teaching methods employed during the Mama SASHA training? How did the Mama SASHA training impact health service delivery? What improvements (and challenges) have been experienced? How can the training be enhanced?
 - k. Are the information, education, and communication (IEC) materials provided practical for use by service providers? How are they used? How do beneficiaries view them? Are they easy to understand and remember? What improvements should be made?
 - l. What are the factors affecting sustainability? What new activities have been made possible with the Mama SASHA project support that would not be possible by the health system alone? Are there current areas of health system strengthening that need to be supported for service delivery more generally? What activities introduced by Mama SASHA can continue after the project is over? How might this be accomplished in the future?
3. How **acceptable** is the OFSP intervention and related nutrition and health messages to *pregnant or lactating women* over the course of project to date?
- a. What is the consumer acceptance of OFSP among pregnant or lactating women and infants over 6 months up to 24 months of age? To what extent have women substituted OFSP for white and yellow varieties and/or increased use/consumption of OFSP in their households?
 - b. Do they retain nutrition and health messages, and what elements did they put into practice?
 - c. Do women value the OFSP vines obtained through the antenatal and postnatal services enough to increase their attendance for these services?
 - d. How acceptable is it to pick up OFSP vines from a Mama SASHA project vine multiplier located near or in their communities?
 - e. What are the gender considerations associated with the intervention, and how should the other community members' perceptions be addressed? For instance, what are the perceptions of parent-in-laws and partners, as well as issues related to women's control over resources?
4. How **feasible** is the OFSP intervention for pregnant or lactating women to obtain the vines and to plant and integrate them into their farm/household production system?
5. How do these factors of acceptability and feasibility affect uptake among low performing and high performing facilities and communities?

The OR used qualitative methods, focus group discussions (FGDs) and semi-structured interviews (SSIs) with key informants, to inform the acceptability and feasibility of an integrated agriculture and health intervention beyond the project period.

Objectives of the Acceptability and Feasibility Study

The objective of the OR was to assess the acceptability and feasibility of integrating the introduction of OFSP into antenatal health care services and communities to improve the health and nutrition of pregnant or lactating women and their newborns up to two years of age. The study will be an input into assessing the project's effectiveness, as well as assessing the sustainability and potential to scale up or replicate the intervention in other sites in Western Kenya and seek to identify factors that may be more generalizable to other communities. Specifically, the objectives were to:

1. Understand the factors that promote uptake and adoption of the integrated agriculture and health project, including an assessment of the training and IEC materials used to increase knowledge of providers and beneficiaries.
2. Understand the impact of the project on resources (personnel, agriculture inputs), workload in the health care system, and the agriculture system and households participating in the project.

Huu mradi wa mama SASHA ulipokuja ulikuwa mbinu ambayo ingepatia wamama motisha ya kukuja clinic kwa maana wengine hawakuwa wanakuja clinic, wengine wanakuja kama wamechelewa. So takawaencourage ya kwamba ukienda clinic utabenefit na kupata voucher ambazo zitawaelekeza muje mupate vines ambazo zitaweelekeza kupanda viazi na hii viazi sio viazi vya kawaida hii ina nutrients ya Vitamin A ambayo inasaidia mama mjazito alee mtoto wake ndani ya tumbo azae mtoto akiwa healthy.

[When this project came it was designed to motivate the mothers to come to the clinic because others were not coming to the clinic while others were coming during their last trimesters. So we encouraged them that if they come to the clinic they will get vouchers that will lead them to get the vines and plant these sweetpotatoes . And that these sweetpotatoes are not like the local ones as they have Vitamin A nutrients that help the mother to give birth to a healthy child.]

Mihuu CHW R7

STUDY AND SAMPLING DESIGN

Study Design

This OR was an exploratory study that looked at the conditions and factors related to the acceptance or nonacceptance and feasibility of the introduction of OFSP through community and health facility channels targeted to pregnant women and their newborns up to 2 years of age in four districts in Bungoma County. FGDs and SSIs were conducted with key actors engaged in implementing the intervention, as well as with beneficiaries and their partners.

The key actors for the operations research included CHWs (Group A), ANC nurses (Group B), pregnant or lactating women (Group C) and their partners (Group D), vine multipliers (Group E), agricultural extension officers (Group F), CHEWs (Group G), and ministries of health and agriculture district and division level officials and APHIA+ staff (Group H). For the control group, we only included Groups A, B, C, D, and G, since the vine multipliers and agricultural extension officers are not already present in the control sites. The control group served as a comparison for us to objectively compare and validate findings. As the control sites were randomly selected, it ensured that the intervention and control groups are similar with respect to potential confounders, both known and unknown.



Sampling Design

The OR was conducted with adult men and women between the ages of 18 and 50 years old. In the intervention sites, these were individuals who are providing support to the intervention or are direct beneficiaries of the intervention. Specifically, this included key program implementors (ANC nurses and CHWs) affiliated with all health facilities in the intervention and control sites. It also included actors from the broader health services that support the program (CHEWs) and from the agriculture side, responsible for establishing OFSP vine multiplication and community demonstration plots, as well as the beneficiaries themselves—pregnant or lactating women—and their partners. [Table 3](#) illustrates the sampling criteria.

Table 3: Sampling Criteria

Group	Participation per Site	Sample Design	Participants per Intervention Site	Participants per Control Site
Group A	10 Community Health Workers	Intervention: Purposive - quota sampling. 50:50 sex ratio Control: Purposive - random sampling. 50:50 sex ratio	<ul style="list-style-type: none"> • Two (2) who have conducted dialogue session and home visits but has missed a feedback meeting once or twice • One (1) who has been involved in dialogue session, home visits, feedback meeting but did not report • Seven (7) who have been involved in dialogue session, home visits, feedback meeting and reporting 	1. Ten (10) randomly selected from the pool of APHIA+ CHWs
Group B	1 ANC Nurse	Purposive – typical case sampling	<ol style="list-style-type: none"> 1. Primary ANC nurse at intervention health facility and/or 2. Must have been employed at the facility for more than 6 months 	<ol style="list-style-type: none"> 1. Primary ANC nurse at control health facility and/or 2. Must have been employed at the facility for more than 6 months
Group C	10 Pregnant/Lactating Women	Intervention: Purposive - quota sampling Control: Purposive - quota sampling	<ol style="list-style-type: none"> 1. Two (2) who did not attend either an ANC or pregnant mother club 2. One (1) who attended ANC but opted not to take vouchers 3. Two (2) who have been provided with vouchers but have never redeemed them 4. Three (3) who redeemed the voucher but have not planted or who planted but did not follow recommended practices planted in 5. One (1) who redeemed the voucher and planted vines only once following the recommended practice. 6. One (1) who redeemed the voucher and planted vines more than once following the recommended practice. 	<ol style="list-style-type: none"> 1. Two (2) who have never attended ANC 2. Eight (8) who attended ANC

Group	Participation per Site	Sample Design	Participants per Intervention Site	Participants per Control Site
Group D	10 Pregnant/Lactating Women's partners	Intervention: Purposive - quota sampling. Control: Purposive - quota sampling	Partners of women as above	Partners of women as above
Group E	2 Vine Multiplier Farmers	Purposive – typical case sampling	VMs supporting the project	N/A
Group F	Agriculture Extension Agents ¹	Purposive – typical case sampling	All Ag extension agents supporting the project	N/A
Group G	1 Community health extension worker	Purposive – typical case sampling	1. CHEW at intervention health facility and/or 2. Must have been employed at the facility for more than 6 months	N/A
Group H	District and division level officials and APHIA+ staff	Purposive – typical case	District and division heads from the health and agricultural sectors and selected APHIA+ staff	N/A

1. There is a total of 9 agriculture agents supporting the intervention and they work across all sites, so they are not site specific

We conducted FGDs among three target groups: **CHWs, pregnant (or lactating) women, and pregnant (or lactating) women's partners.** Therefore, we held a total of three FGDs per health facility—there are four intervention health facilities and four control health facilities. In the intervention sites, we purposively selected any individual over 18 years of age who had participated in the project. The CHWs are a part of the APHIA Plus project, and have established pregnant women's clubs (PWCs) in the communities. The APHIA Plus project coordinator and the CIP project coordinator contacted each health facility participating in the intervention sites to organize the three FGDs with the CHWs and the participating beneficiaries. In the control sites, we purposively selected pregnant (or lactating) women over 18 years old, as well as CHWs and ANC nurses serving these communities. The APHIA Plus project coordinator contacted APHIA Plus CHWs and health facilities in the control to organize the FGD sessions.

We conducted SSIs for five categories:


- **ANC workers** (1 per facility).
- **CHEWs** (1per facility).
- **Vine multipliers** (2 per facility).

- **Agriculture extension officers** (all extension officers participating in the project).
- **District level officials from the ministry of agriculture and ministry of health, Administrators and APHIA+ Staff** (up to 15 individuals).

For the intervention sites, we selected all individuals that have been trained as part of the project. For the control sites, we randomly selected ANC workers. [Table 4](#) summarises the numbers of participants for key stakeholder interviews and FGDs.

Table 4: Number of FGDs, SSIs and Participants in Both Intervention and Control Sites

Sample	SSIs		FGDs			
	Target No. of Pax	Actual No. of Pax	Target No. of Groups	Actual No. of Groups	Target No. of Pax	Actual No. of Pax
CHWs	0	0	8	8	80	78
Pregnant/Lactating Women	0	0	8	8	80	80
Partners	0	0	8	8	80	72
ANC Nurses	8	8	0	0	0	0
CHEWs	4	4	0	0	0	0
VMs	8	8	0	0	0	0
Agriculture Extension Officers	9	9	0	0	0	0
District and Division Level Officials	10	8	0	0	0	0
APHIA Plus Officials	5	5	0	0	0	0
Total	44	42	24	24	240	230



“And so in such we had high numbers of women attending ANC even in the community we could see them forming the groups the discussion... the antenatal mother groups whereby at least they could sit and share. And you know if somebody is not aware of a certain something they could share topics mainly concerning antenatal mothers. So if maybe someone is not aware of something during the discussions or during the sessions when they share at least someone would get information out of apart from getting the vines and planting them for their own use at least they were getting some information.”

DPHN 017

METHODS

Ethical Considerations

All participants read an oral consent form to document that verbal consent had been given by the researcher and received by the participant. In that oral consent, they were told that they have the right to refuse to participate at any time. The participants were given information about the research project and how the study team will ensure that the information is stored and analysed to ensure anonymity. Our study team protected the privacy and confidentiality of all participants.

No personal or sensitive questions were asked of any participants. The consent forms provided assurance that no judgments or penalties would be imposed and that respondents were free to participate or not, and to decline to answer questions that make them uncomfortable. See the oral consent script of the verbal consent that was read to participants in the operations research in [Appendix 1](#). Forms were also designed to indicate that the interviewer or focus group facilitator had requested and received verbal consent.



Project staff and implementing partners carried out mobilisation of study participants. This was taken place within two weeks before the date planned for data collection. During mobilisation, potential participants were informed of the study objective and their proposed role and expectations using information from the consent form. Each potential study participant was approached independently. They were free to accept or decline the request to be part of the study hence further details of the data collection were only provided to those who willingly accepted to be part of the activity. Nonetheless, during the discussions and interviews, we still followed the stipulated consent procedures to reconfirm their willingness to participate.

For the focus group discussions, no names or personal identifiers were collected on any forms, and recordings began only after introductions were made. The sound files were transferred for digital storage to a computer so that there was an electronic record. During fieldwork, only the research team had access to the field notes and complete interviews. All recordings and transcriptions were only identified by an ID number and stored only both on password-protected computers and in safe-copy disks to which only the project team has access.

For the semi-structured interviews, the first page of the data collection form included personal identifiers (i.e. name, position/title and organization) that were recorded confidentially and stored separately and the page kept separately from other data. The notes and/or electronic transcripts

were assigned a unique ID number; no identifier data was transcribed from the original data collection forms or stored electronically. No personal identifiers were used in any report of the research project.

To protect the anonymity of study participants for both FGDs and SSIs, data and personal information was delinked both for hard and electronic copies with only enough information to identify the different study groups as follows:

Prior to Data Collection:

1. We created a consent log with NAME and assigned ID number – generated at the time of the data collection event (separate log for FGDs and ID system; and SSIs and ID system)

Data Collection Stage:

2. For each FGD and SSI, we kept the registration page covering ‘General Information’ and ‘Demographics’ separately
3. The hand written transcripts/notes only had a place for the assigned ID number.

Data Processing and Storage:

Three separate hard copy files:

4. A consent log with NAME and assigned ID number – this page was stored completely separately from the 2 other files and kept in a secure location.
5. Personal information pages only
6. SSI raw transcripts/notes.

Three Electronic data files – transcripts/spreadsheets/database

7. Separate electronic data files were set up for personal information with no study ID number.
8. Electronic data from the SSIs has a unique ID only and NO personal identifying information other than designation (study group ‘type’ only).
9. The consent log served as the link information and was stored completely separately and completely delinked from the remaining two files with controlled access by the PI only. Research assistants did not have access to this information unless verification checks were needed.

Two Versions of the Final Report

10. For the internal project team audience, the report will have identifiers related to facility and the community in order to provide specific information to enhance the design of the project
11. For the general audience, facility and community identifiers will be masked, with the only distinction being whether the respondent was from an intervention or control site. No data that can potentially identify respondents or their location will be included.



IRB approvals were sought and received from PATH's Research Ethics committee and from Kenya's National Council for Science and Technology (NCST) in April 2012. Communities and stakeholders were informed and sensitized about the field research by the Mama SASHA project team before it started, and were informed of the preliminary results after data collection was finished, through a presentation at the annual stakeholder workshop in June 2012.

Topics Assessed

Table 5 describes the general topic areas explored for the acceptability and feasibility of integrating an OFSP intervention into a health facility strategy among key actors using a mix of methods for collecting information.

Data Collection Techniques

Fifteen qualitative study guides (**Appendix 1**) were used to collect data. Details on research assistant recruitment and training and pre-testing are contained in the Field Report (**Appendix 2**). There were separate tools for intervention and control sites for pregnant and lactating women, women's partners, CHWs and the ANC Nurse. Each FGD and SSI was recorded using a Dictaphone and handwritten notes taken by the RAs. At the request of the participants, photographs were also taken. To ensure that a of good quality was collected, supervision was continuous and involved periodically reviewing notes taken, recordings and reviewing field procedures often to determine whether they needed to be changed.



The team also wrote debriefing and field notes daily (**Appendices 3 and 4**) capturing the general observations as well as the mood and essence of each FGD and SSI. In addition, regular discussions, usually on the way back from the field, were held with the RAs at the end of the day to determine that which went well and that which could improve as well as deliberate on some of the themes arising.

Data Analysis

Data processing complimented data collection. Throughout the data collection process, standardised tables were used to summarise practical details about the time and place and the participants' demographics. These data was analysed along with the transcripts.

Table 5: Acceptability and feasibility topics to be explored during SASHA Operations Research

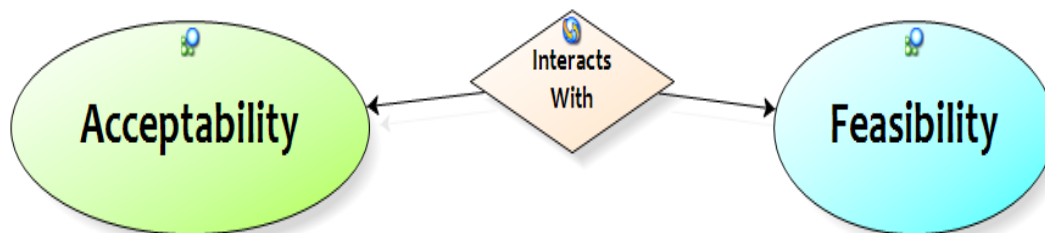
<i>Group</i>	<i>Sample</i>	<i>Acceptability</i>	<i>Feasibility</i>
A.	CHW	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> • Perceptions of the program (benefits and concerns among the community) • Factors affecting participation. 	<p><i>Feasibility of establishing and maintaining pregnant women's clubs</i></p> <ul style="list-style-type: none"> • Process, resources and inputs used to establish and maintain PW clubs for nutrition • Increase in CHW time spent with clubs • Training, Information, Education and Communication materials, supervision
B.	Health facility worker: ANC Nurse & CHEW	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> • Perceptions of the program (benefits and concerns among the community) • Factors affecting participation. 	<p><i>Feasibility of distributing vouchers for vines and increasing nutrition education at the health facility</i></p> <ul style="list-style-type: none"> • Processes, resources, inputs, and challenges to motivate and train health workers in use of voucher system • Health worker time and burden • Training, information, education and communication materials, supervision
C.	Pregnant (or lactating) women	<p><i>Acceptability of the OFSP intervention and related nutrition and health messages</i></p> <ul style="list-style-type: none"> • Perceptions of the program (benefits and concerns among the community) • Factors affecting participation. <p><i>Consumer acceptance of OFSP among pregnant (or lactating) women and infants over 6 months up to 24 months of age and consumption pattern changes</i></p> <ul style="list-style-type: none"> • Retention of nutrition and health messages and elements put into practice • Gender considerations in project implementation 	<p><i>Feasibility of for pregnant or lactating women to obtain the vines and to plant and integrate them into their farm/household production system</i></p> <ul style="list-style-type: none"> • Processes, resources, inputs and challenges to obtain vouchers and plant, maintain and harvest OFSP • Pregnant (or lactating) women's time and burden • Time taken for women to redeem vouchers at vine multipliers • Time taken for women to visit demonstration plot
D.	Partners of pregnant (or lactating) women	<ul style="list-style-type: none"> • Perceptions of the program (benefits and concerns among the community) • Factors affecting wife's decision to participate 	Not Applicable
E.	Vine multipliers	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> • Perceptions of the program (benefits and concerns among the community) 	<p><i>Feasibility of establishing and maintaining a system of secondary vine multiplication and community demonstration plots</i></p> <ul style="list-style-type: none"> • Process, resources and inputs to setup and maintain secondary vine multiplication and demonstration plots • Training, Information, Education and Communication materials, supervision

<i>Group</i>	<i>Sample</i>	<i>Acceptability</i>	<i>Feasibility</i>
F.	Government and NGO Agriculture Extension Agents	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> Perceptions of the program (benefits and concerns among the community) 	<p><i>Feasibility of agriculture extension agents providing support to OFSP production</i></p> <ul style="list-style-type: none"> Process, resources, and inputs to visit demonstration plots, vine multipliers, and households Supervision, service provision, and sustainability
G.	CHEWs	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> Perceptions of the program (benefits and concerns among the community) 	<p><i>Feasibility of agriculture extension agents providing support to OFSP production</i></p> <ul style="list-style-type: none"> Process, resources, and inputs to support health care workers and CHWs Supervision, service provision, and sustainability
H.	District & Division-level Health and Agriculture Officials and Chiefs	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> Perceptions of the program (benefits and concerns among the community) 	<p><i>Feasibility of agriculture extension agents providing support to OFSP production</i></p> <ul style="list-style-type: none"> Process, resources and inputs Supervision and sustainability
H. (C)	APHIA+ Staff	<p><i>Acceptability of integrating an OFSP intervention into a health facility strategy</i></p> <ul style="list-style-type: none"> Perceptions of the program (benefits and concerns for APHIA+ and among the community) Activities that could be done to increase participation of APHIA+ in the Mama SASHA project How Mama SASHA can be redesigned and implemented in a way that better meets APHIA+ goals and objectives Suggestions for strengthening integration of Mama SASHA with APHIA+ 	<p><i>Feasibility of integration of Mama SASHA project activities into existing activities and services offered by APHIA+</i></p> <ul style="list-style-type: none"> Value in conducting joint workplanning? How Mama SASHA project components can be better integrated with APHIA+ activities Perceptions on working more closely with the agricultural sector

The RAs are undertaken transcription, combining the recordings and the notes taken as sources. All transcripts are available in [Appendix 4](#). Translation, where applicable, was done in the same document in a different font colour to simplify analysis. The PI then reviewed the transcripts and listened to the recordings after which they were exported to the Computer Assisted Qualitative Data Analysis Software (CAQDAS) NVivo 10.0 and then used to store, code, create classification systems, enumeration, attach memos, find relationships, and produce graphics.

Content analysis was utilised and included both conceptual and relational analysis. Conceptual analysis was used to establish the existence and frequency of concepts based on the topics explored (see [Table 5](#)); it involved systematically working through each transcript and assigning codes to specific characteristics within the text to allow for word frequency counts. Relational analysis was used to further examine relationships among themes and respondents with the latter involving comparing and contrasting findings across respondents from both intervention and control sites; this involved establishing strength, sign, and direction of relationship between concepts. Thematic analysis was employed because it is highly inductive whereby themes emerge from the data without imposing them. The first step was classifying data based on the basic thematic model in [Figure 2](#).

Figure 2: Basic Thematic Model



Typologies for the two basic themes were then clearly identified and systematically classified as illustrated in [Figure 3](#) and [Figure 4](#). Deductive analysis was also employed (and stated) when relating the data to the field observation notes and issues emerging from discussions with the project team. Questions and comments made by respondents were classified as 'free nodes' given they did not strictly fall into any of the typologies.

Figure 3: 'Acceptability' Thematic Model

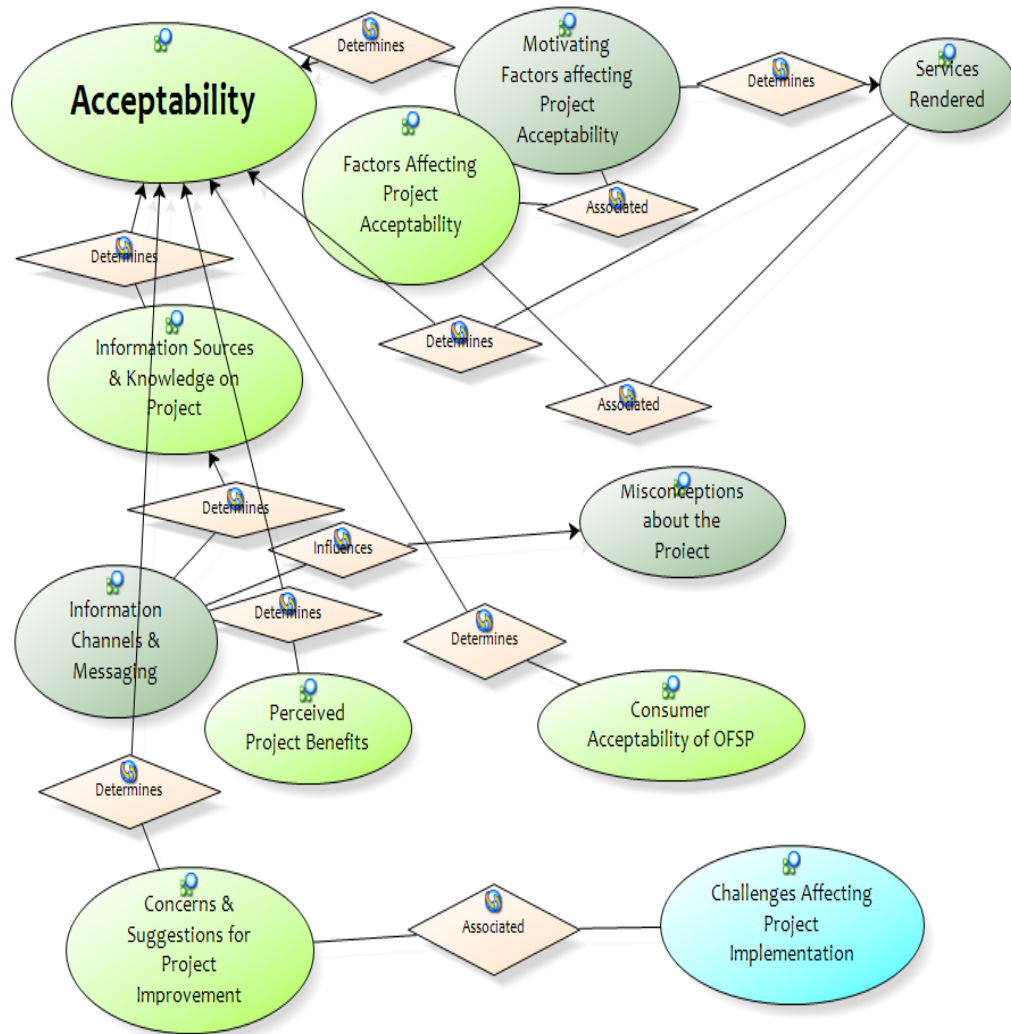
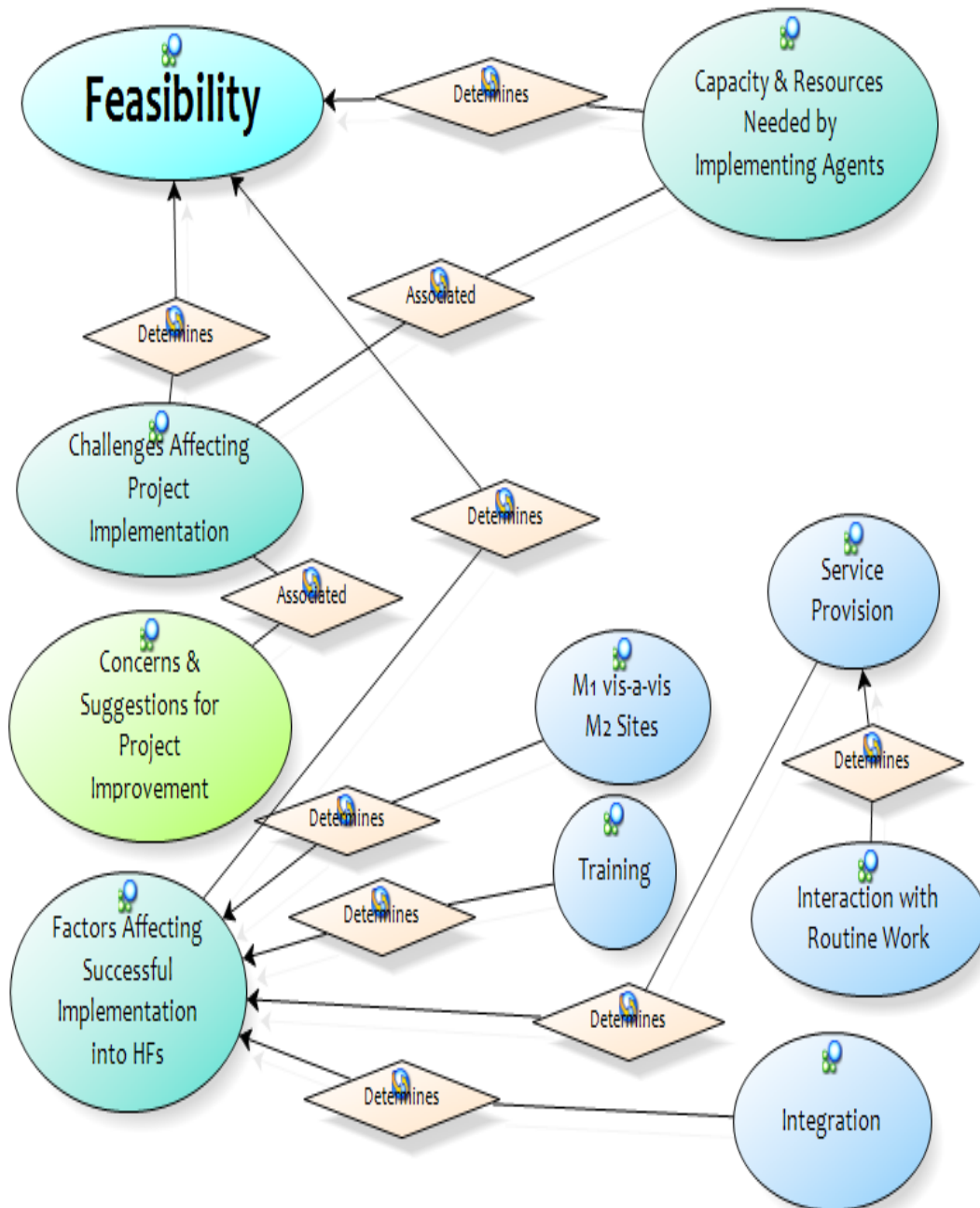


Figure 4: 'Feasibility' Thematic Model



For quantitative data (Appendix 5 and Appendix 6) related to ANC visits, analysis was done using STATA 10.0 to generate summary tables and employ appropriate regression assessing for an association between the intervention and (increased) ANC visits whilst comparing intervention and control sites.

Mimi ningependa kuchangia hivi kuwa kwa upande wa (I could like to contribute on) productivity. Uki compare consumption ikikuwa ikiendelea kulingana na local ones na hizi za Mama SASHA, walikuwa wakiangalia Mama SASHA vile productivity yake iko juu, wakina mama wengi wameamua kuacha mambo ya Bungoma wamerudi kwa Mama SASHA kwa sababu ukipanda mahali kidogo, yield inakuwa ya juu kuliko ya ile viasi za kawaida.

[When you compare consumption as it goes with the local ones with those of Mama SASHA, they used to look at Mama SASHA's productivity which is high, most mothers have abandoned these local ones because the Mama SASHA's yield per small area is high.]

Ndalu CHW R10

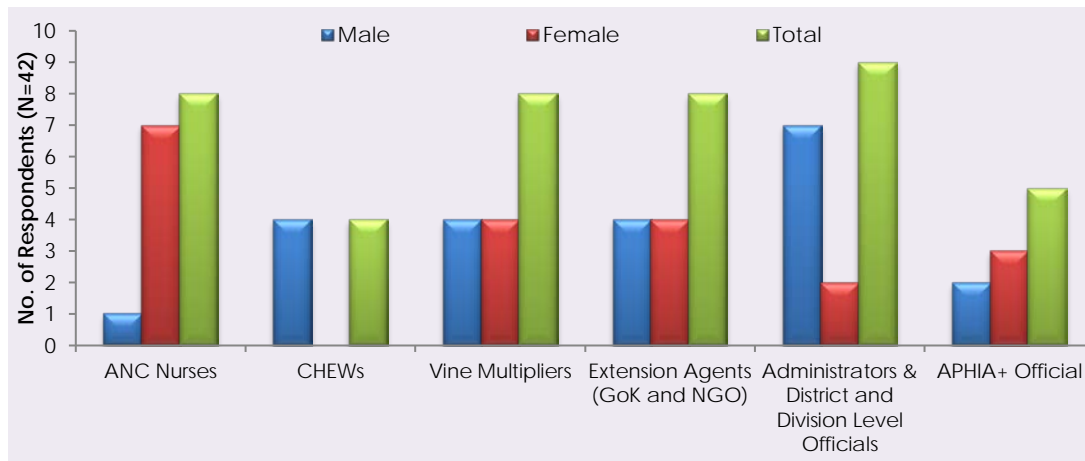
RESULTS

Respondent Profiles

SSI Participants

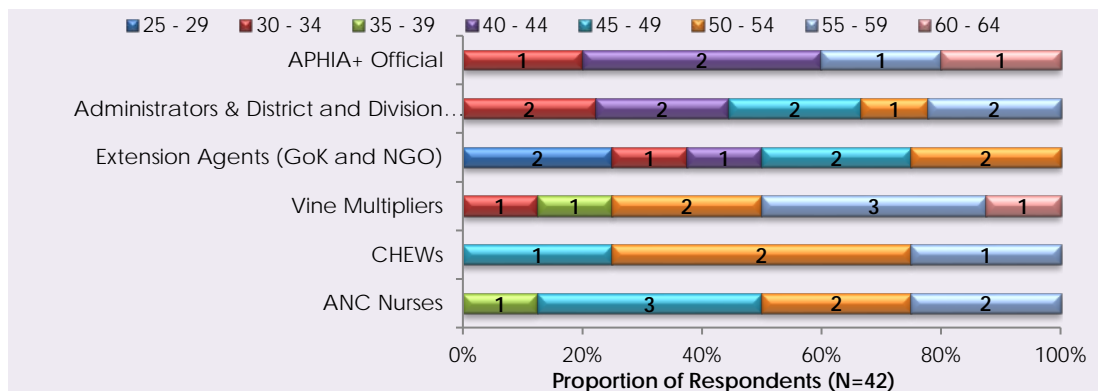
There were 42 SSI respondents, with an almost 50/50 sex split, 22 (52%) of were male and 20 (48%), female. All respondents, with the exception of nurses, were from intervention sites. Almost all nurses were female (7, 88%) and almost all administrators were male (7, 78%), the other categories were more or less nearly equally balanced.

Figure 5: SSI Respondents by Sex and Category



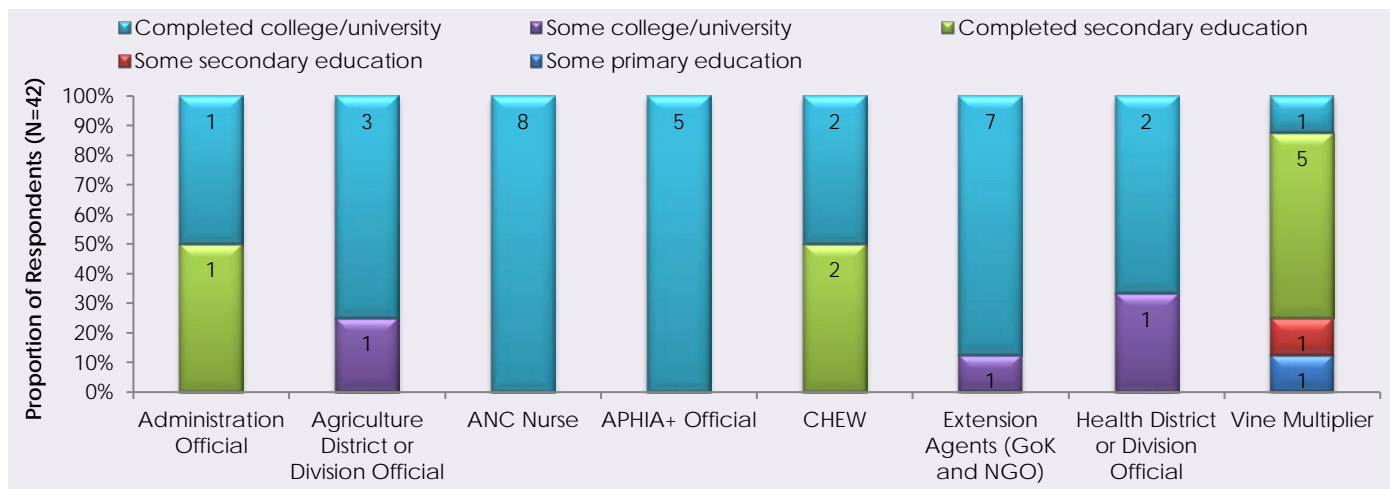
Most respondents (26, 62%) were between 45 and 59 years old. All CHEWs (4, 100%) and nearly all nurses (7, 88%) fell into this category. Administrators and other officials were spread in age as were extension agents and APHIA+ officials.

Figure 6: SSI Respondents by Age Group



Most SSI respondents (29, 69%) had completed college or university and about a fifth (8, 19%) had completed secondary education. A minority, all vine multipliers, had some primary or some primary education. There was no significant association between education level and category of respondent.

Figure 7: SSI Respondents Highest Education Levels



FGD Participants

There were 226 FGD participants drawn from CHWs (78, 35%) and beneficiaries who included Pregnant or Lactating Women (77, 34%) and their Partners (71, 31%). Similar respondents were selected for control sites. Most respondents were women (121, 54%) given that two of the three FGD categories had a higher proportion of women; more than half of CHWs were female (44, 56%).

The total number of FGD respondents in both intervention and control sites was equal. CHWs and partners were slightly more in intervention sites while the reverse applied to pregnant or lactating women. **Figure 8** illustrates the number of respondents by site and category.

Figure 8: FGD Respondents in Control Sites

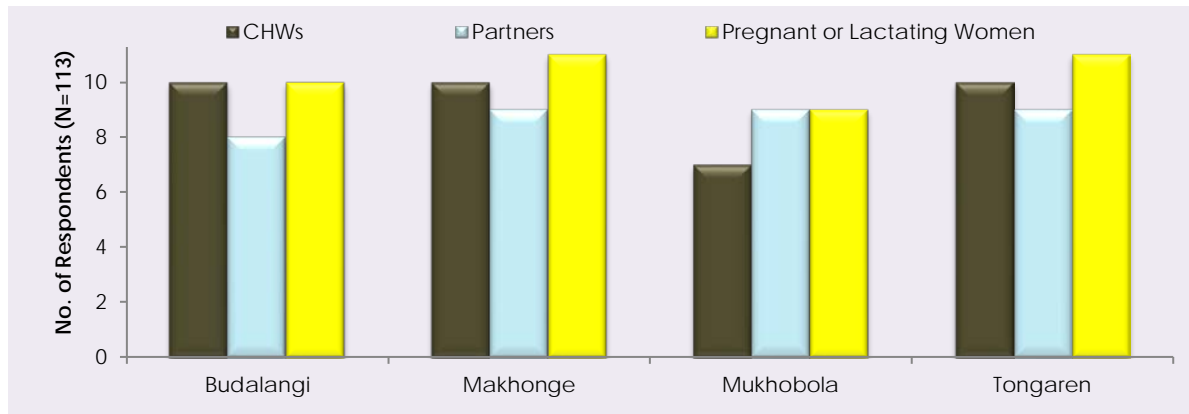
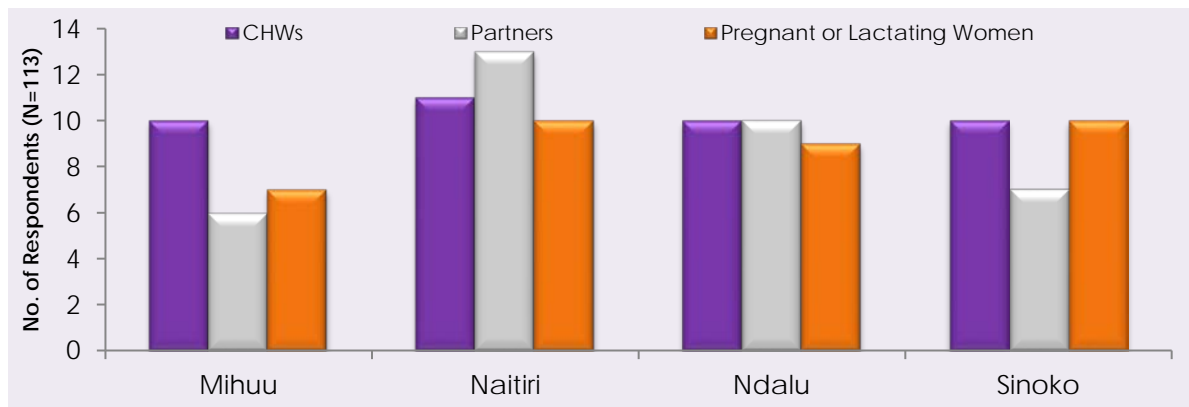
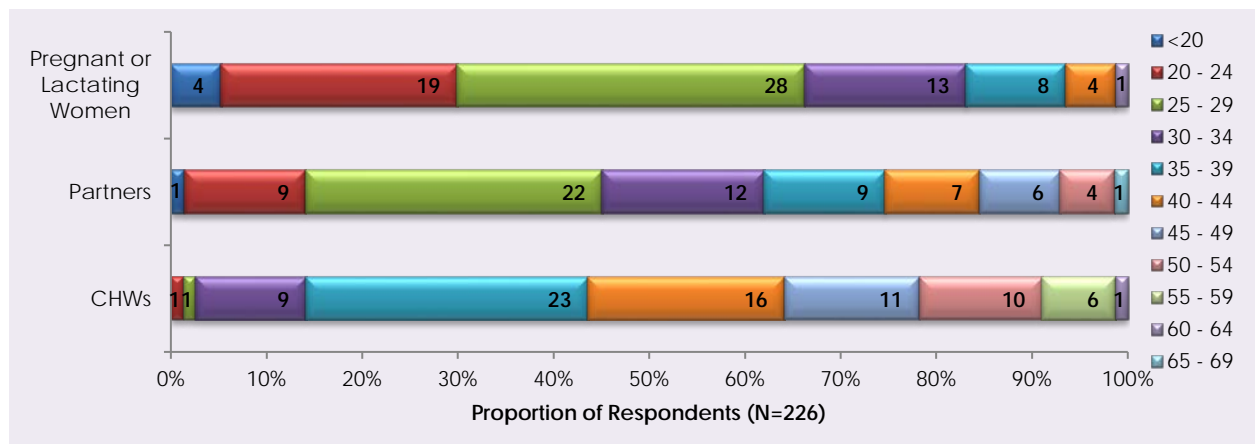


Figure 9: FGD Respondents in Intervention Sites



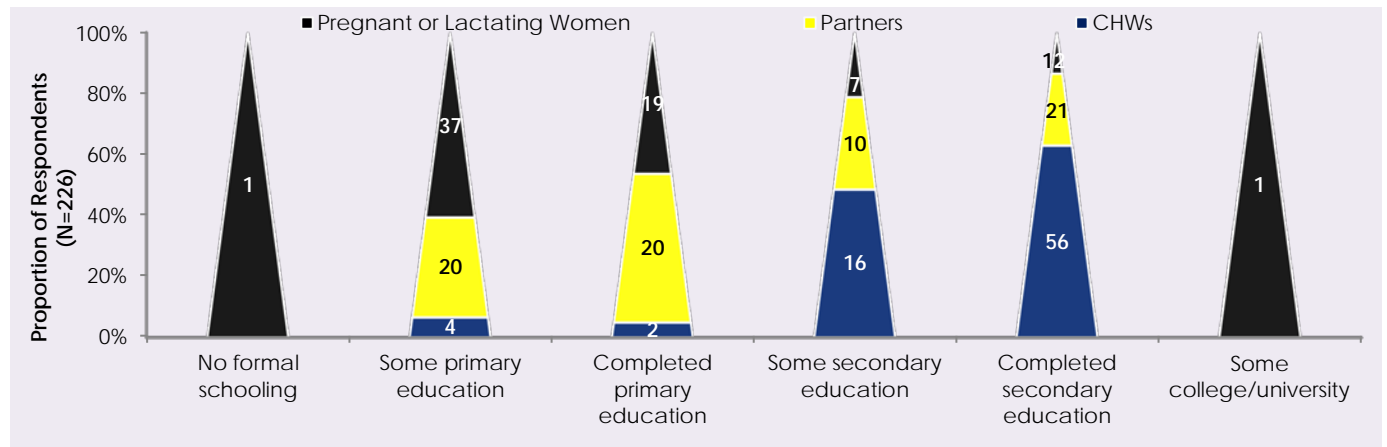
Most women and their partners were between 25 and 29 years of age while most CHWs were aged between 35 and 39 years. Comparatively, CHWs were older with the youngest being 24 years as opposed to women and their partners whose youngest were in their teens.

Figure 10: Age Groups of FGD Respondents



There was a significant association between category (CHW or Woman or Partner) and the highest level of education attained (Pearson $\chi^2(10^1)=83.650, p^2=0.000$). CHWs, male or female, were the most educated, partners followed suit, women were the least educated. Most CHWs had completed secondary education (56, 72%) or some secondary education (16, 21%). Women were generally less educated than their partners with most only having acquired primary-level education, close to half only having some primary education (37, 48%) and another quarter (19, 25%) having completed primary education. Most partners had primary level education and were equally distributed amongst those who had some primary education (20, 28%) and those who had completed primary education (20, 28%). Individuals that completed secondary school (21, 30%) were double those who had not (10, 14%). Additional details on FGD and SSI respondents are available in [Appendix 5](#).

¹ The number in brackets is the degrees of freedom
²All p-values are quoted at a significance level of $p<0.05$

Figure 11: Highest Education Levels of FGD Respondents

Acceptability

This section presents findings centred on acceptability of the Mama SASHA project. This is based on discussions with implementing agents such as health facility based workers, CHWs, extension officers, vine multipliers and APHIA+ officials to determine the factors that affect acceptability of integrating the OFSP intervention into a health service strategy. It is also based on discussions with pregnant or lactating women and their partners that explored how acceptable and beneficial the OFSP intervention and related nutrition and health messages, are to them as well as how they value the channels for relaying these messages.



Information Sources and Knowledge on the Project

Information Channels and Messaging

In all intervention sites, both implementing agents and beneficiaries were well aware of Mama SASHA objectives and activities. ANC nurses, CHWs, CHEWs, VMs and AEOs indicated that they had received extensive training at the beginning of the project.

Ndalu CHW R9

Kazi tunayofanya katika huu mradi huu wa Mama SASHA ni kuwatafuta wa mama wajawazito, kuwaelimisha kuhusu umuhima wa viasi vyenye rangi ya machungwa ndani yake na kuwapa himiso wafike kliniki mapema wanapo gundua wako na mimba kufikia kama miezi mitatu ili waende kliniki mapema waweze kupewa ushauri na wapewe voucher

za kuwawezesha kwenda kupata kamba hizi viazi vyenye rangi ya machungwa. [What we do in this Mama SASHA project is to look for pregnant women, educating them on the importance of the OFSPs, urging them to come to the clinic once they realise that they are up to three months pregnant so that they can be advised and get given vouchers for picking the vines.]

Most pregnant or lactating women had first heard of the project either from the ANC nurse during and ANC visit or more predominantly, from CHWs. Others heard it from their neighbours including other women who had picked the vouchers and planted the vines.

Sinoko Woman R7

Mimi huu mradi niliusikia, nilikucha kuisikia kulingana na haya mabwoni ya orange sweetpotato eti iko na mabwoni ya orange sweetpotato ambayo ni nzuri sana kwa watoto mama kwa familia yote kwa jumla na iko na nutrients ya vitamin A ambayo ni poa kwa kuzuia magonjwa kama ya macho hivi. Sasa ndio nikaamua ahaa, ni heri nijunge na huu mradi ili hii mabwoni iweze kuniwezesha kwa fammlia yangu, familia yangu wakuwe na nutrients za kutosha...Nilisikia kwa mtu wangu wa CHWs. [I heard of this project because of its vitamins A which is good in preventing eye infections and that the sweetpotatoes are good for the children and the whole family. So I thought it better to join the program so that the sweetpotatoes can enable me and my family have enough nutrients...I heard from my CHW.]

Partners on the other hand received project information from their wives and less commonly when they were present during a CHW home visit. Those who had accompanied their wives for an ANC visit also reported hearing of the project from the nurse and a few from their male relatives or friends whose wives had picked the vouchers.



Sinoko Partner R6

Na nilisikia wakati ambapo.....mke wangu, wale..... wale CHWs walikuwa wakitembelea katika vijiji. Wakiangalia, wakiangalia kina mama wenye mimba, mm. [I heard of it when..... my wife was visited by CHWs who were visiting pregnant women in the community.]

In control sites, all healthcare workers including CHWs had first heard of the project during the initial site selection process, others during initiation into the project and through linkages with APHIA+. Most women and their partners had not heard of the project, prior to their being

mobilised for the study, especially those who were from Budalangi and Mukhobola catchment areas.

A larger proportion of those who had either neighbored beneficiaries or had visited an intervention health facility.

Tongaren CHW R2

Hata walikujako wakati fulani wakajaribuko kumobilise wamama wenye walikua na watoto wa mizi sita kurudi chini na wakapatako mafunzo hapo na walipoenda mpaka saa hii hawajarudi. [They had come and mobilised and educated mothers with children aged 6 months and below; however since then they have not come back.]

Makhonge Partner R8

Nilisikia huu mradi nilipata tu habari ya kwamba watu wamekuja halafu hatuingia ndani walichukua tu wazee wa mtaa ndio walikuwa wakitembea nao wakionyeshwa mashamba. [When I heard about this project I just got information that the Mama SASHA people were here but people didn't enter inside because they just picked the village elders who were taking them around showing them the land.]

Acceptability of Nutrition and Health Messaging

It was notable that for community members, information sources were almost always verbal and not written, hence initial knowledge of the project solely via IEC materials was not indicated as a channel by any of the respondents. Nonetheless, implementers were generally confident of acceptability of messages on nutrition and health that they delivered.

Ndalu CHW R9

Ilichukua mda mfupi, yaani within a week tulikuwa tumehamasisha wa mama na kwa mda huo within a week hata wa mama walikuwa wameelewa umuhimu wa Mama SASHA na umuhimu wa viasi vya rangi ya machungwa vyenye viko na vitamins A na walikuiwa washaanza kuchukuwa vouchers na kupanda immediately. [It took a short time, just within a week and within that time they had understood the benefits of Mama SASHA and the OFSPs which have vitamin A and they started taking the vouchers and planted immediately.]

This seemed to prove essential for partners with a mindset who would normally receive second hand information from their wives but then alter their view once they received more information from 'credible' sources.

Ndalu Woman R9

Sasa wakati nikuja mara ya kwanza, yenyewe mzee wangu alikataa...akasema hii viazi hiwezi pandwa hapa. Yaani mzee aliwaza hivyo, kama hajaenda kwa klab...sasa wakati.....nilimuingiza kwa klabu akasomea, sasa ndiyo akahitaji kwa mara ya pili vocha, wakati tuliletewa. [My husband refused the first time I came to the health facility. He said the potatoes cannot be planted here, that was my husband's thought before he joined the club, but when he joined the club, he understood. So the second time he agreed and we were given the voucher.]

Evidence of elements of nutrition education put into practice was testified in Budalangi, a control site.



Budalangi Woman R6

Ese nga njichanga mu kliniki bamboreranga wari niwimbula mwana mpaka amale miosi kinga kisasaba huwahachaka omubakho sindu siosi siosi. Haro ano siosi ndatimisia nga oluabambola. Khuluokhubera abana bange be enyuma bano abendebulenge bano ndabachakisienge ebiakhuria ata nde ni bari nde ewiki omwana layula bwayula ni nanu bidong'a mbwe hole si muberesie ebiakhuria arie. Lakini haroano khu uno naye nduchi mbwe ari tofauti, ndamarire miosi kisasaba ndalalokhakho mbwe alwalwa ama ndalalolakho mbwe asndia mbwe njichire ano mu sibitali. [When I go to the clinic they normally tell me that when you give birth to a child she should finish six months before weaning her. Now I also adhered to that to

what they told me. Because my other children that I gave birth earlier I used to give them food even when they are a week old the child cries but I had to give them food. But now on this one I have seen that she is different, I have finished six months I have not seen her sick or that I have to come to the hospital.]

Knowledge of the Project by APHIA+ Staff

It was evident that some APHIA+ staff were not knowledgeable on the Mama SASHA conceptual framework and in effect its activities in spite of receiving constant reports and briefing on the same. It was observed that a more detailed orientation to staff was necessary to enhance knowledge and understanding.

APHIA+ Staff

It was verbal. The only document she gave me are...counselling cards which I have in my office enough yah, how they report, the data collection documents yah I have copies to read.

Perceived Project Benefits

The results in this section describe what the women and their partners and implementing agents perceive as the project benefits.

For Women and their Partners

Overall, good health among children was indicated as the biggest benefit of OFSP among women. For them, the benefit of enhanced health and reduced incidence of illness was generally indicated as the biggest advantage of OFSP.

Naitiri Woman R6

Huu mradi kulingana na hii Kenya yetu, most watoto yaani walikuwa healthwise walikua chini sana. Huu mradi ilikuja itusaidie at least watoto wakizaliwa wanakuwa health kwa kukula hiyo viasi wapate vitamin A, sasa mtoto akitoka kwa tumbo, unamwona kweli ako healthy hata wewe mama mjamzito unafanya kasi bila wasiwasi wowote. [This project according to this Kenya, most children healthwise used to be down. This project came at least kids being born to be healthy by eating these sweetpotatoes so that they get vitamin

A. So when the kid is born, you see she/he is healthy, even you the mother you work without any fears.]

Ndalu Woman R5

Balanced diet. Labda...kwa upande wangu wakati nilikuwa na introduce mtoto kwa uji laba nilikuwa nampea tu matiti na uji lakini kuna vyakula ambavyo nimefunzwa vya kumsaidia jinsi ya kumlea. [When I was introducing my child to porridge I would only give breastmilk or porridge but there are foods that i have been taught they will help in growth.]

Women also appreciated the overall increase of nutritious foods for all household members.

Sinoko Woman R6

Eeeheh, nikajua jinzi ya kutengenezamo, kutengenezamo chapatti, kutengenezamo vitu kama crisps, nikajulia hapa, sasa watoto wangu wawili wamekula hizo viasi mpaka saa hii wako na afya mzuri. [Yes, I knew from there on how to make chapati, crisps. My two children have consumed these potatoes and they have good health.]

Similarly, others attributed their strength and that of their babies to OFSP.

Sinoko Woman R8

Hata mimi mwenyewe pia naona vizuri. Niko na nguvu vile nimejifungua mtoto wangu huyu alikuwa na nguvu sana. [Even me I see well. I am energetic and this child when I gave birth was energetic also.]

Women were appreciative of the Mama SASHA project's support in enhancing knowledge on child care through the nutritional counselling provided through ANC services.



Ndalu Woman R5

Mimi kwa uapnde wangu, naona huduma hizi zimeweza kunisaidia, hasa kwa mfano ile huduma yenye tunasema kwamba jinsi ya kumlea mtoto. [The services has helped me in how to care for my baby.]

With Vitamin A typically known to be in 'vaccine'³ form, OFSP were a welcome relief as a staple option.

Mihuu Woman R2

Mimi naona kwangu naona sana sana vitamin A hua wanapewa sana hospitalini kila mara nikaona kama wameleta msingi ambayo unawezakula na wewe mwenyewe upate vitamins A ambayo ile haununui nikaona ni heri tuchukue huu mradi na tuufanyie kazi tuiweke maanani na tuweze pia tukisaidia hata kijiji maana mtu akikuja ata kwako akikula ni mzuri tena unamhimu utakua umemsaidia lakini yeye hajajua. [For me I saw that vitamin A is given

³ Even though the Vitamin A provided in health centres is a supplement, mothers still refer to it as 'chanjo', a Swahili word meaning vaccine.

in hospitals everytime and i saw if they have brought a way in which you can eat and you get vitamin A that you are not buying then i saw it is better we take this project and work with it and also help the village because if someone comes to your place and eats it is good you would have helped her but she won't know.]

Beneficiaries acknowledged the dietary value of OFSP in being nutritious as well as the relative ease in agronomy given the time taken to mature was about half that of the common SPs.

Mihuu Woman R6

Mimi ningependa tu kusema ya kwamba.....isipokuwa leo ni mara yangu ya kwanza lakini naamini ya kwamba akipewa hii vocha apewe hii mbegu.... kitu cha kwanza ni chakula ambacho kinachukua muda mchache muda mfupi na inakuwa tayari inaweza kusaidia hapo kwa huu muda mchache upate chakula. Jambo lingine ni kwamba unaweza kupata vitamin A ambayo ilikuwa ni vigumu maybe viazi ya kawaida hii haiwezi kuu.....hawangeweza kupata hiyo vitamin A sasa ndio tuweze kubenefit kwa hiyo. [I would like to say that..... even though this is my first time but I believe that if she is given this voucher and given the seeds..... first thing it's food that takes a short time to mature it can heal within a short period you get food. Another thing is that you can get vitamin A that was hard maybe the normal potatoes could not...they couldn't get that vitamin A so that we can benefit from that.]

For Partners

Generally, partners were initially hesitant to accept the project but did so with time. Their perceived benefits, unlike those of their wives, were drawn towards their own health – strength to work and/or virility – being proxy indicators for the same.



Ndalu Partners R4

Sijui pengine itarekodi..... kwangu kabisa kwa upande wa kiume sijui kwangu ni kibinafsi au niaje, hii kitu nimeikula for almost three months vile zilikuwa ready sasa vile nimeendelea kuzikula zimeniongezea nguvu zangu za kiume sana. [I don't know maybe it will record..... personally as a man I don't know whether it is only me or what, this thing I have eaten it for almost three months when they got ready, now as I continued eating them my vitality has been increased a lot.]

Mihuu Partners R2

Lakini mpaka saa hizi naamini vile huwa wantumia, wanapata hiyo vitamin A, ten avile mimi mwenyewe, wakati nilianza kutumia viazi, nikiendashambani naona kama nafanya kazi muda mrefu bila kuchoka, mm [But even up to now I do believe in the way they use it, they get the vitamin A, and again when I personally started to use the potatoes. When I went to the farm I would see myself working for a longer duration, mm.]

They were also appreciative of OFSPs' value in enhancing food security in the home. They also reported that OFSP improved diet diversity in the household more so when food security was of concern.

Naitiri Partners R3

Maoni tofauti ni kwamba huu mradi ukiendelea nafikiria ya kwamba... utaleta afya ya watu kuwa mzuri tena utapunguza njaa kwasababu ni vitu ambavyo vinakuwa kwa muda, in a short period! [People talking at the background] (A different view is that, if this project continues then I think.....it will improve people's health and again it will reduce hunger since they take a short period to mature.)

Sinoko Partners R6

Halafu tuachukuwa.. mm..... unga kidogo tunachanganya (na OFSP) halafu watoto wanakula hiyo, halafu sasa inakuwa chakula kingi kwa nyumba. Kwa hivyo watoto wanapata mikate, kwa hiyo mi.... viazi. [We mixed it (OFSP) with a little flour and the children fed on that. We had plenty of food. Children can now get a meal of those sweetpotatoes.]

Like the women, men appreciated the shorter maturity time needed for OFSP cultivation. That OFSP contained Vitamin A was also an added advantage, more so for the unborn baby.

Naitiri Partners R9

Sasa unaona huyo mama akitumia hizo viazi, huwa mtoto kwa tumbo pia ana develop vitamin A. [So you see when the pregnant woman eats those potatoes, the baby on the womb also 'develops'/gets the vitamins.]

Nonetheless, the view that OFSP had Vitamin A was a result of awareness on the same and it was evident that they were not quite familiar with other foods that were rich in Vitamin A or other micronutrients.

Sinoko Partners R2

Eee.... Mimi, kwa jambo linguine ambalo Mama SASHA imenisaidia sana, {birds still singing} eee hasa upande we, we, niwe.... Elimu, [Eee... something else I have also benefited from Mama SASHA is ... on education.]

It was evident that awareness on maternal and child health had gone a long way amongst partners, specifically, that related to minimum number and importance of ANC visits.

Sinoko Partners R2

Tulikuwa hatujui hata mambao ya afya ni nini, ee ati mama anaenda mara ngapi kwa, kwa kliniki, [We didn't know anything on health issues, like how many times an expectant mother should go to the clinic.]

For ANC Nurses and CHEWs



Unanimously, the greatest benefit from the Mama SASHA project indicated by ANC Nurses and CHEWs was increased ANC attendance. Food security was also indicated as an added benefit. Both nurses and CHEWs highlighted that other sweetpotatoes would take too long to mature, OFSP was advantageous because of the shorter maturity time.

ITVN Nurse 009

Since the introduction of mama sasha, our ANC they were down and even capturing the first trimester though they don't come, at least we are having them now come because they cannot be given the voucher let's say the mothers clubs or in the community. It is just here. So our numbers have increased and also the additive value on the potato and at least it has empowered the mother on food in the home the way they told me. It is faster, in getting ready than these normal potatoes that we plant because it goes up to six months but this one is three months. So at least they have food at the table...So the Mama SASHA project and that incentive they are given; the CHWs we are getting more mothers coming so the numbers are up as before, compared to before.

ITVN Nurse 021

....there is an increase in ANC clients.

Not only was the project praised for increased numbers of ANC clients but also increased ANC visits per capita.

ITVN CHEW 002

The services here have improved. The hospital delivery has gone up. You find that mothers are coming for four or six clinics per month, per trimester has improved. Mothers used to come at the end at least once just before delivery to get the book and...so that they can be accepted when they go to the facility to deliver they will be accepted. Actually this time they are getting to know.

Mama SASHA was credited for enhancing awareness on the importance of ANC In the community, among both men and women, by having a knock-on effect on those that did visit the health facility for ANC.

ITVN CHEW 010

The benefits we have seen that men accept their women who are pregnant to attend the clinics too; there are those ones that have accompanied their women who are pregnant to come in the ANC clinic and then be tested for HIV to know their health status and when the ANC nurse is teaching the mothers also those men benefit and when they go back they encourage others that we need to eat these orange-fleshed sweetpotatoes.

On boosting Vitamin A levels, and in effect reducing the incidence of VAD-related morbidity, nurses and CHEWs were not able to quantify Mama SASHA's effect given that this was not part of their routine data collection. One nurse however, attributed 'reduced' birth deformities to the project.

ITVN Nurse 021

...there are no infections, or minimal infections, and then I have not seen a mother who is really whom we started from this project may be the Vita-Kabode, who has had an abnormal child, or their children they don't have high infections, or poor development.

The project was also praised for boosting knowledge levels and enhancing coordination between the health facility and the DHMT as well as integration with the agriculture sector.

For CHWs

Enhanced knowledge on ANC and nutrition amongst beneficiaries was indicated as the major benefit by CHWs. In effect, this encouraged mothers to attend ANC.

Ndalu CHW R8

Mbali na hapo, huu mradi umetusaidia katika kule mashinani ama vijijini hata wamama wamefurahia huu mradi kwa kupitia kwa mafunzo tunayowapa, imetuleta karibu sana na community. Sasa tuna share ideas na tumeona kumbe sisi ni watu wa maana sana kule vijijini tunapewa heshima zilizo za juu. [Besides that, this project has helped us in the villages even the women are happy through the teachings they get, it has brought us near the community. We share ideas and we have come to realize that we are important people in the village and we are treated with respect.]



Ndalu CHW R9

Hao wadogo ndio wako chonjo sana. Halafu lingine labda koungezea, Mama SASHA pia imetusaidia sana. Imefanya wale mama wazee, wale ambao wamepata mimba katika umri wao wa juu. Walikuwa wanahofia kuja kuonekana mbele ya hospitali kupimwa. Wanasema ni aibu kuja kliniki na watoto wangu pia wako pale na mimba. Saa hii kina mama wako chonjo zaidi. Hata hawana aibu. Anasema kumbe ni hali ya kawaida nao pia wanachanganyika, yaani wanajumuika na wengine kaatika kliniki. [The young ones are the ones who are keen. Also Mama SASHA has helped us alot on the side of those mothers who get pregnant at advanced stages, who used to fear being seen at the hospital for testing. They could say that it looked shameful for them to come to clinic with their children also being there pregnant. Nowadays they don't have a problem; they mix with others as they see it as being normal.]

ANC was appreciated as a proxy health check more so where HIV status was concerned.

Ndalu CHW R9: Na pa kuongezea, licha ya viasi vya mama sasha peke yake. Eeh, yale mafunzo tumepeana ya hizi viasi pia imesaidia kina mama kuja kujijulia hali zao. Kwa sababu vile tumewahimiza kuja ANC na umuhimu wa kujijulia hali. Pia wa mama na wazee wao wamekuwa na moyo wa kuja kujijulia hali yao wakati mama anakuja first ANC. [Besides the Mama SASHA potatoes, the trainings which we have received has enabled these mothers in knowing their statuses by coming to the ANC. Also their husbands have had the will to come and know their status when the mother comes for the first ANC visit.]

For Vine Multipliers

All vine multipliers praised the project for giving them knowledge that enabled them to train beneficiaries on OFSP agronomy. They felt that the OFSP were assisting the community.



DVM 003

Kinachonipendeza mimi naona kama watu wangu wa community wanabeneft na kuna sehemu zingine hii mradi hakuna mimi naona sisi tuko na bahati tulipata hii mradi tumefunza watu wetu na wamepata hiyo viazi ya aina yenye iko rich in vitamin A nimefurahishwa nayo. [I am happy my community has benefitted and we taught them about the sweetpotatoes rich in vitamin A.]

The fact that a mother had to go for ANC (or PNC) before receiving a voucher was also indicated as a benefit as it encouraged expectant mothers to visit the health facility.

DVM 004

Yaa inawasaidia.jamii...nzima unaona mwingine anakuambia anakuja kwako viazi at least she has identified it ameona hiyo viazi ni nzuri. Anakuja namuambia you see you are not eligible ukitaka wewe enda tu kwa hospitali. [It helps them...the whole community you just find someone is coming for the vines, at least she has identified it and has seen that these potatoes are good. Somebody goes and I tell him/her you are not eligible if you want just go to the hospital first.]

DVM 011

And also encouraging them at least to come to attend to ANC service because the condition of getting a voucher must be through ANC...also deliveries, home deliveries have decreased.

For Agriculture Extension Officers (AEOs)

The major benefit highlighted by both government and NGO extension officers was the linkage between agriculture and health and coordination with other partners or stakeholders. Enhanced food security and increased SP acreage were others.

NGO Extension Officer 006

The benefits. The pregnant mothers during the PMCs what I have realized is that healthy children are being born.

Govt. Extension Officer 014

What I have experienced is that with the planting of these orange sweetpotatoes one thing is that this crop matures very early and the mamas are able to harvest and eat other than the other varieties which go for over even six months. So they are able to get the crop early. Another one you know with sweetpotatoes it doesn't involve a lot of things to use in planting or establishing, it is just a question of getting vines to plant and then you will get the crop that is it is not very much involving the farmers can easily raise the crop. Another thing is me as staff because I have shared in workshops in trainings I have gained knowledge apart from what I knew I have also gained knowledge

Govt. Extension Officer 015

Actually the benefit is, when it comes to food security..you find that..... especially during a...ime of hunger...most people do not have enough food. And when this crop is ready, it really boosts them...and that is why in the first place I said if this vines can be doubled, then that means the food security would be doubled.

Like other implementing agents, they also appreciated it as an additional source of Vitamin A that was 'free' and required minimal inputs such as fertiliser.

For District and Division-level Officials and Administrators

Like their health facility counterparts, division and district level officials credited the project for enhancing ANC attendance and Vitamin A uptake.

Health Official 017

I have observed that the number of ANC mothers has increased since the introduction of Mama SASHA.

It was apparent that administrators were eager to be informed of the impact of the project as the benefits were not clear to them.

Chief 013

In the village it has not been felt but we hope to see after one or two years, we hope to see the vitamin A deficiency will now be shown to us after two years or so. Because a few other times I have seen very young kids suffering from eye problems looking for spectacles and what have you. And we are yet to see. I believe the effect will be there.



Chief 025

Like in terms of benefits on the side of health I don't think I will be able to comment on that because like you are saying when you are measuring vitamin A I think that should be measured by a medical doctor.

In one instance, a district-level agriculture official seemed to overstate OFSP benefits by highlighting reduction in blindness in children as a benefit of the project. This pointed to the need for improving sensitisation amongst implementers in the agriculture sector on the benefits of OFSP.

Agriculture Official 019

We have not observed children being blind such things like that.

For APHIA Plus Staff

For APHIA+ staff, there were mixed reactions to Mama SASHA's benefits. In as much as they understood, to some extent, Mama SASHA's operations and lauded the initiative, they were not aware of the expected project outcome.



APHIA+ Staff 040

We have not able to come up with that clear distinction to say that because of the efforts of Mama SASHA we have been able to have more ANC attendance in these facilities compared to these others we have not heard that clear distinction but it can be done.

APHIA+ Staff 041

Yes the other time I think I received a report I think from Ndal, we went for review meeting and one of the things that made me happy was they were able to say that the ANC attendance has gone up and those that were attending at least four times were also up and they were basically those who were in the mother clubs. And then too that facility delivery had moved from 26% to forty something percent.

Others indicated that ANC attendance had gone up but admitted they did not have comprehensive data to back that claim.

APHIA+Staff 042

APHIA+: No, health facility deliveries are still low because like when you look at our reports that we get every month out of twelve mothers delivering in a month only six or seven will deliver at the facility and this from a small population that we are taking care of in a given area. So I can't say that (Mama SASHA) really translates to high deliveries. And then the other thing also is that we were not focusing much on deliveries but it was just our initiative to see how many mothers in our pregnant mothers clubs are actually delivering at the health facility because then that will then ensure that the child from this mother given birth to is also taken care of.

Motivation for Participation in the Mama SASHA Project

The study sought to understand what encourages beneficiaries and implementing agents to participate in the project, their personal motivation and interest in being an active participant for the Mama SASHA work.

Among Pregnant and Lactating Women

Pregnant and lactating women who had benefitted from the project were motivated by the fact that OFSPs were nutritious for their families, more so for their young children. Beneficiaries who had already delivered indicated that as a result of OFSP, when they compare children who fed on OFSP and those who were born earlier, they find that the former are more active. They were also encouraged by the short(er) maturity time and the various ways in which OFSP could be prepared. In Makhonge, a control site, women anticipated the same benefit were the project to be implemented in their locality.

Naitiri Woman R11

Mimi nilitaka kujua ni nini chenye wanaenda kutuambia na nini chenye tutapata hapo. Sasa vile tulienda huko tukajiunga, vile tulienda tukapewa hizi voucher. Kwangu mimi huwa zinanisaidia kwa upande wa chakula, wengi wetu hatuna chakula kwa boma, sasa hiyo niniii..., hiyo mabwoni inatusaidia sana kwa wototo kukula na ni chakula tena kando na vitamin A. [For me I wanted to know what they were going to tell us and what we could get. So we went, joined and we were given the voucher. They help me (potatoes) for food since most of us don't have food. It is food for the children besides having vitamin A.]

Sinoko Woman R7

Mimi huu mradi niliusikia, nilikucha kuisikia kulingana na haya mabwoni ya orange sweetpotato eti iko na mabwoni ya orange sweetpotato ambayo ni nzuri sana kwa watoto mama kwa familia yote kwa jumla na iko na nutrients ya vitamin A ambayo ni poa kwa kuzuia magonjwa kama ya macho hivi. Sasa ndio nikaamua ahaa, ni heri nijiunge na huu mradi ili hii mabwoni iweze kuniwezesha kwa familia yangu, familia yangu wakuwe na nutrients za kutosha. [I heard of this project because of its vitamin A which is good in preventing eye infections and that the potatoes are good for the children and the whole family. So I thought it better to join the program so that the sweetpotatoes can enable me and my family have enough nutrients.]

Makhonge Woman R6

Kwa sababu hizo viazi vya rangi ya machungwa vikona madini ya vitamin A ambayo itanisaidia mimi na, tuseme na mtoto wangu, ama na watoto wangu. [Because those orange fleshed sweetpotatoes have vitamin A which will be helpful to me and to my child/children.]

The OFSP were also considered a cheap source of Vitamin A. Even though other sources were acknowledged, OFSPs were appreciated for providing relatively cheap. Nurses on the other hand thought that with the entry point for the project being health facilities, this served to validate the project (and its benefits) which encouraged women's participation.



ANC Nurse 001

One of the factors was because of the entry point was ANC clinic the hospital you know they believe that anything that is brought by people from the health sector it must be good and through proper counselling they came to understand the importance of those sweetpotatoes that was the main factor.

ANC Nurse 009

But actually after going through that (nutritional counselling) session, they feel the goodness of at least planting and getting that vitamins A because we have already told them what it is for. So they willingly take it because of what they are going to benefit from that.

One of the CHEWs felt that the added value of participating in PWCs, being able to share with other mothers and benefit from the CHWs also encouraged them.

CHEW 002

Like when we have these meetings, they have liked them because they come to share the experiences. Apart from just getting the vines, they get the experiences, they come and share the experiences and they advise each other why they should go to the facility, why they should give birth at the facility and why they should eat the orange fleshed sweetpotatoes. It is actually they talk to about their experiences. They encourage others to join that is why we have many people joining the club-mamas.

Other partners lauded the efforts of CHWs who were thought to be the key influencers and the initial points of contact for the project. They felt that were it not for the CHWs' intervention, mothers would not fully be motivated to participate in the project.

NGO Extension Officer 006

They accept the vouchers because of the CHWs work. The CHWs tell them the benefits of getting the vines. So once they have understood what benefits they will get from these vines, they accept to take the vouchers.

Govt. Extension Officer 015

Actually one factor is that...the people who encourage these pregnant mothers to go for the... the...the antenatal clinics, then redeem the vouchers, are the people from the same community that is community health workers. They are the people who are known in the, in the same community.

This was also acknowledged by CHWs who reported their intervention was heavily influential as a result of the information they gave mothers.

Ndalu CHW R4

Masomo Eeh, maanake hata siku zingine hawakua wanaelewa eti ukila chakula fulani kama melenge hawaelewi itawapa nini kwa mwili, lakini kuona kwamba ni vitamins, ndio wakadhamani sana kuwa na hizi viasi. [Yes the trainings, because even on other days they did not understand what you will get by eating some foods but when they see that it is vitamins, they got interested.]

Among Partners

Motivation for most partners seemed to have taken sometime to come about. They were not immediately sold to the idea of OFSPs and were reluctant to allocate land for their cultivation, this was indicated by both women and CHWs.

Ndalu CHW R7

At sometime wakati huu mradi ulipoingia kusaidia hawa wamama na jamii kwa jumla especially wazee, wanaume hawakuwa wanapendelea hii chakula ya viasi. Lakini vile tulipata mafunzo na tukaona ni kitu gani unaweza tumia kando tu na kukula na maji, imesaidia sana kumbe wakaona ni chakula kingine bora sana kwa community ama kwa familia. [At some time when the projected was incepted to help these women and the community especially the old, men didn't like these potatoes as food. But as we got training and we saw what else could be eaten with the potatoes apart from water. It has helped them to know that it is food for the family and the community.]

The men's families served as an inspiration for some partners and encouraged their participation in the project.

Sinoko Partner R3

Halafu (watoto) wansema daddy, hii yellow ni mzuri. Kama jana wakati walikuwa wakula, wasema daddy hii yellow ni mzuri. Na kwetu vile nimepanda, niambia mama nilipea akapanda...yake. [Then they (the children) say daddy the yellow⁴ one is nice. Like yesterday when they were eating, they were saying daddy the yellow one is nice. And the way I like my place I told my wife to plant... hers.]

For others, the fact that the vouchers were free, motivated them to get them for the family as they were a 'free' source of food as well as a source of nutrients. Partners from control sites similarly indicated this as their motivation.



⁴ Even though OFSP are orange in colour, some respondents referred to them as being yellow. This was clarified with them to confirm that they were actually referring to OFSP.

Ndalu Partner R3

Sasa wakati mimi nilisikia imekuja na inapeanwa tu free na vouchers bora tu mama aende hospitali nilifurahia na nikachukua jukumu la kutafuta mahali ziko na ikanifanya hata mimi mwenyewe nilikua naziendea kusudi nipate hiyo mbe... [Now when I heard they have come and they are being given free of charge with vouchers given that mama goes to the hospital I was very happy and I took the responsibility of looking for where they are and it even made me go for them myself so that I can get those see...]

Makhonge Partner R8

Mimi kwangu vile nimejua hii sweetpotatoes ni kitu ya kuleta kupatia watoto madini, madini fulani sasa itanibidi kama imepandwa mahali mpaka ata nikaribie huko nichukuweko [On my side the way I have known that these potatoes will bring some nutrients to children so I will be forced even if it is planted somewhere to pass there and pick some.]

Sinoko Partner R3

Sasa vile nimejisikia vile nimepanda, [Am feeling good now that I have planted them.]

When the project began, community members were informed that extension workers and other Mama SASHA representatives would go round the households assessing whether kitchen gardens had been established for OFSP and vegetable cultivation. For some men, this motivated them to allocate their partners land for the kitchen gardens.

Chief 025

It is like I have tried to move around I have seen those small gardens they are there they are not like what I said when the men knew what the women were doing and like they were told these officers will be walking around to see what they were doing you see they really felt like maybe when the officers come around they see when the wife is there they come around and they don't see that garden it is the man's dignity that will go down

In Sinoko, it was evident that messaging may have been wrong or exaggerated to get the partners on board as they were convinced that OFSPs enhance virility.

Sinoko Partner R2

Nivile hawa ma CHWs wame, wame, wametufundisha ya kwamba, hii ni viazi, {cough} inasaidia na hata upande ya mwanamume, ya ngufu ya kiume. Unapokula hizo viazi, nguvu inakuwa mingi.[It's also through the CHWs who have taught us on the importance of the sweetpotatoes on virility. When you feed on the sweetpotatoes it increases stamina.]

Among Nurses, CHEWs and CHWs

Healthcare workers were motivated by a number of things. CHWs were motivated by the value of the OFSP and their versatility in preparation combined with the nutrient value.

Tongraren CHW R1

Mimi kwa hiyo program ile kitu ilinifurahisha kwa hiyo program ni vile hiyo viazi inapandwa hiyo matawi ni mboga sawa. Wakati unapanda hiyo viazi hiyo viazi inachukua muda mchache viazi halafu hiyo muda mchache viazi unakula matawi unatoa mboga sasa huwezi lala njaa pale. [What excited me in that programme is knowing how to plant those potatoes and that its leaves are edible as vegetables. The potatoes take short time to mature and so one cannot go without food.]



Ndalu CHW R7

At sometime wakati huu mradi ulipoingia kusaidia hawa wamama na jamii kwa jumla especially wazee, wanaume hawakuwa wanapendelea hii chakula ya viasi. Lakini vile tulipata mafunzo na tukaona ni kitu gani unaweza tumia kando tu na kukula na maji, imesaidia sana kumbe wakaona ni chakula kingine bora sana kwa community ama kwa familia. [At some time when the project was started to help these women and the community especially the old, men didn't like these potatoes as food. But as we got training and we saw what else could be eaten with the potatoes apart from water. It has helped them to know that it is food for the family and the community.]

Sinoko CHW R1

Mimi ile ilinifanya, saa zile walisema mradi wa Mama SASHA na umekuja na viazi ambaye ikona...vitamin A ndani yake. [What made me is, when they said that this is the Mama SASHA Project and it has come with a potato that has vitamin A in it.]

The initial training received at project inception and their being identified as Mama SASHA representatives also motivated CHWs.

Naitiri CHW R9

Mi mradi wa Mama SASHA kama CHWs imekuwa vizuri kuwa identified kwa kwa sababu ya mafunzo, unajua mafunzo unapotembea unataka ku recruit wamama hata kazi yako kwa kijiji kama village elders wanakujua kwamba kumbe unafanya kazi ya kijiji. [For me as CHW through the mama SASHA project it has been good to be identified because of the teachings, you know the teachings when you walk to recruit mothers even the village elders know your work that you work for the village.]

For nurses, meeting mothers who were receptive, motivated them in the anticipation that their message would trickle down to the rest of the community.



ANC Nurse 001

Because I meet the ANC mothers I talk to them about nutrition and they are positive about it they pass information the information goes to the whole community so I find myself working with the whole community.

One CHEW echoed the same, motivated by the knowledge received during training and then being able to pass on this knowledge to mothers.

CHEW 010

Yes it is good because the knowledge and the books that we have been given with that knowledge you meet the mothers you give them the information that is required so the mothers are also encouraged when you tell them that we are meeting on such a day they also try to come and attend even those ones that are not pregnant they are also encouraged to come and listen to the lectures.

Similarly, the knowledge transfer to mothers during PMC meetings, on issues such as exclusive breastfeeding, and their witnessing mothers practicing what was taught also motivated CHWs.

Naitiri CHW R9

Na nifurahia kwa sababu ukiona Mama SASHA wamama ilikuwa kitambo mtoto akizaliwa tu wanakimbia na maji kumpa mtoto lakini saa hii tumewaambia mtoto anyone tu mpaka miezi sita, ndiposa apewe kitu chochote. [I am happy because when you see Mama SASHA in the past immediately a child was delivered, the mother rushes with water to give the child but now we have told them the child should just breastfeed until six months that is when the child can be given anything else.]

PMC meetings further served to motivate CHEWs who highlighted that the reception from mothers was very positive. The beneficiaries appreciated that they could have close access to a health care worker who could address their concerns out of a health facility.

CHEW 002

What motivates me is the reactions I get from mothers...Positive reactions, negative reactions and it has actually made me improve the services because I actually know what they need, why they were not coming to clinics but now they tell you I don't go to the clinic because of distance, you know I am very poor...It actually motivates me to advise them because most of them are not poor. They have at least something. They have got avocados, they have kukus (chickens) they can sell and come to the facility.

CHEW 034

Just because... in fact when I go to a club and find that there are so many mothers I am just motivated I just find myself talking to them.

Additionally PMC meetings served as a foundation of solving other health problems that the CHEWs could investigate whilst in the mother's home.

CHEW 034

You see when I go to the village to meet these club meetings I will be meeting these pregnant mothers I will meet these mal.... these poorly nutritioned children I will look at the homes see their health status I will proceed even to advise, constructing of toilets you see because these mothers don't meet at a specific place they rotate and they rotate in their homes.

Witnessing 'healthier' children being born was another motivating factor. CHWs felt that as a result of the Mama SASHA intervention, less children suffered illness.

Sinoko CHW R6

Watoto wenye wamezaliwa na hii viazi, they are very healthy. [The children who were born during the time of this potato are very healthy.]

Proactive activities such as the PMCs also encouraged the CHWs as these served as forums where they could address any concerns that the beneficiaries had.

Mihuu CHW R1

Alafu ingine ni kwamba muda mrefu tumekuwa na vikundi lakini vikundi hivi kabla vikuje vya wamama wajawazito mara nyingi tulikuwa tumewasahau. Tulikuwa tunakuwa na vikundi tu, lakini ni vikundi ambavyo vimetengwa kwa wamama wajawazito na waleambao wana watoto chini ya umri wa miaka miwili. [Another one is that for along time we have been having groups but most of the time the pregnant mothers group had been forgotten. We used to just have general groups but this is specifically designed for the pregnant mothers and those that have children under the age of two years.]



Coupled with this was also an expression of interest in knowing the 'quantitative' effects of their efforts, how Vitamin A uptake levels were actually changing, as was voiced by one CHW from Sinoko.

Sinoko CHW R2

Mimi ningependa nirudishwe kule, nijue kama huyu mama alikula viazi vya vitamin A (OFSP) na.... saa hizi amezikula na ningependelea nijue ni kiwango gani kwa mwili imee.....zi, kama amekula hiyo viazi, haijamsaidia, na ningependa tu nijue, vile wanaeza, unaweza pima mama ujue amekula hizo viazi ama mtoto, na imemusaidia ama haijamsaidia. [I would like to go back there and know if this woman ate the vitamin A potatoes (OFSP)...I would have

loved to know what level she has in the body after eating. Has the eating helped her and if so, then I would just want to know how to measure. Just to know that she has eaten or even the baby has eaten, and it has helped her or not.]

Among Vine Multipliers

Vine Multipliers were motivated by the recognition they got from the community, this boosted their morale. Community members coming in to ask them questions about OFSP, their agronomy, training beneficiaries on how to tend to OFSP, all these factors were very influential in motivating VMs. As more and more women picked vines, this also motivated them to continue to serve the project. They were also motivated that the project served as a source of livelihood.

DVM 003

Kinachonipendeza mimi naona kama watu wangu wa community wanabenefit na kuna sehemu zingine hii mradi hakuna mimi naona sisi tuko na bahati tulipata hii mradi tumefunza watu wetu na wamepata hiyo viazi ya aina yenye iko rich in vitamin A nimefurahishwa nayo.[I am happy my community has benefitted and and we taught them about the sweetpotatoes rich in vitamin A.]

Among Extension Workers

Government extension workers were motivated by the fact that the Mama SASHA project was enabling them to reach their goals with regard to number of farmers to whom they were providing extension support as well as increased acreage of sweetpotatoes. Unlike their health counterparts – nurses, CHWs and CHEWs - who were motivated by the nutrition or health outcomes from consumption of OFSP, extension agents valued food security more. Understandably, this is explained by the fact that one of the performance indicators for extension workers is on the basis of crop acreage while that for healthcare workers is primarily on the basis of positive health outcomes such as improving nutrition status in certain cohorts of the population.

Govt. Extension Officer 007

...when the acreage of sweetpotatoes increase we are also fighting against food insecurity the farmers are now becoming food secure.

They were also motivated by the coordination and genuine concern for VMs' and beneficiaries' welfare which encouraged them to make visits.

Govt. Extension Officer 037

Mama SASHA it is just fun...you know now like the pregnant mothers...I feel happy when people are well then they are now my friends you know the pregnant mothers will look for you. Then I try to make some concerns with them, we make songs so that when are together it is fun, they learn but then at least they are moving.

Training supported by the project was also encouraging as it also served as an opportunity for meeting other project participants and sharing information on the project as well as exchanging ideas.

**Govt. Extension Officer 007**

Another one is when we go in for trainings we go to...sometimes they call for one week training three days four days so when we go there we share knowledge from a status from either KARI or whichever place that they will have invited them from and then we also have some out of pocket that is just once in a while.

One NGO extension worker was motivated by the technology behind OFSP and its nutritional value and another by the fact that he was living his profession.

NGO Extension Officer 005

Okay I came to love it because...I studied biotechnology in agriculture and we used to learn about the beta carotene how you can incorporate it in maybe rice to improve the nutritional value of rice so I came to love it because of that beta carotene that is in the sweetpotato. But then what made me even more impressed is that this is just bred conventionally unlike the biotechnology part of it where you can get a gene from another crop and insert it into these OFSP to boost its nutritional value. By the way this was just bred conventionally so I always appreciate those breeders who participated in this because coming up with a variety conventionally it usually takes a very long period of time.

NGO Extension Officer 006

I like because it is giving me bread; myself and my family. And you see in this profession that I trained in, if I don't practice then I will not be happy.

That the Mama SASHA project is data driven was also motivating as it meant one could see the results of their effort.

NGO Extension Officer 031

What motivates me in fact achievement whatever I can say I am proud of this project is that it has a lot of data which makes my head alert always. That by the way initially I was working on some projects I just say we went to the field and it was good and the farmers was

responding but this one asks shows me how many? Quantity, quality and quantity so data I am very proud...

Services Rendered and their Effect on Project Acceptability

Beneficiaries were asked to describe the acceptability of CHW home visits, CHW coordinated Pregnant Women's Clubs (PWCs), health facility, vine multiplier and extension services with the aim of determining how these services affected or influenced project acceptability.

ANC and Other Healthcare Services



ANC services are either the first or second point of contact with the Mama SASHA project depending on whether CHWs have made a sensitisation home visit. Both women and their partners were asked to provide their views on ANC and related healthcare services such as PNC. It was evident that for non-first time mothers, the project, through CHWs, played a big role in their decision to attend ANC services. Most of those who had children prior to the project's inception indicated that they had not attended any ANC sessions with their previous children. Once a woman made a decision to attend ANC, reception from the ANC nurse usually determined whether she would make a subsequent visit or not.

Women perceived ANC benefits included knowledge on how far the pregnancy had progressed, the health of the child and their HIV status. They also valued the counsel received on taking care of a pregnancy, dietary information for instance and weaning.

Ndalu Woman R5

Na advice siwa jinsi ya kupea mtoto avocado, amefika hii stage, kuna kitu fullani yenye saa..... inatakikana ni..... Tuseme introduction of food labda.[The advice on how to give a baby avocado, this is the stage. For example introduction of solid food to the baby.]

Naitiri Woman R6

Kilichonifanya niamue kutembelea clinic nii..unajua wewe wakati unapokuwa mjamzito, kinga ya yule mtoto aliye tumboni na wewe bado mjamzito ni kidogo sana. Sasa ukitembelea clinic utapata matibabu [unclear segment-kid crying while mother is speaking] [What made me visit the clinic is...you know when you are pregnant your immunity and the unborn baby is still low. So when you visit the health centre, you will get medication.]

Ndalu Woman R7

Na nikaona hiyo ina manufaa sana ndani ya mwili wangu [I saw its importance for my health.]

Partners had mixed feelings about ANC, besides the advantage of OFSP vouchers, many were not clear on other ANC benefits. Those who accompanied their wives were the minority, in Makhonge

for instance, partners indicated that they were belittled by the nurses when they accompanied their wives. Besides ANC clients, health care workers play a big role in motivating male involvement and relying on client initiative alone was evidently not sufficient. Men also wanted to feel needed and accepted before they could make the first step.

Makhonge Partner R8

Mama aliwaelezea (aliposhika mimba) alafu wakaniuliza mimi.. “ na wewe mzee vile mama alishika mimba pia wewe ulishika”? [My wife explained (when she conceived) then they (the nurses) also asked me “and you when your wife got pregnant you also got pregnant?”]

Naitiri Partner R6

Kwa sababu akiwatu huko nyumbani, hawa wamama wakongwe hawatajua. Na.... akipatakana na hizi magonjwa, basin a....madaktari wanajua namna ya kumshauri. [Because if she saty at home, the old women will not know. But when she is diagnosed with these health conditions then the doctors know how to advise.]



Mukhobola Partner R1

Kilichofanya mke wangu kwenda kwa kliniki maana pale utaelezewa jinsi vile unastahili uwe katika ile hali ya uja uzito, utaambia kuhusu vyakula ambao unafaa ule ili uwe na afya mwili usiwe mdhaifu na pia sehemu zingine kilinda mototo vile anastahili kupewa matibabu kulinda mototo akiwa katika mimba yaani awe katika hali ya usalama. [What made my wife to go to the clinic, is because you can be told the way you are supposed to be in that state of pregnancy, you will be told about food that you are supposed to eat so that you are healthy and also some parts to take care of the baby the way it is supposed to be treated, taking care of the baby when in the womb so that it is safe.]

Nonetheless, both men and women admitted that traditional birth attendants (TBAs) were the first resort once a woman discovered she was expectant. For most women, all ANC visits, save for the last before delivery are with the TBA. The last ANC visit then serves to confirm that all is well with the pregnancy as well as for the woman to get an ANC card which then allows her to deliver in the particular health facility. With the onset of the Mama SASHA project, women admitted to seeing both the ANC nurse and TBAs, with most eventually delivering with the TBA and not in the health facility. Without the incentive for ANC attendance, this finding offers strong indication that women may not attend ANC as much as they do now.

Naitiri CHW R7

Kwangu nafikiri haikuwa rahisi kwa sababu kwanza tuidentify pregnant woman huko kwa reserve wamama wengi huwa wanataka wakuje for ANC kama miezi imesonga kidogo.[On

my side I think easy because first to identify pregnant woman there is the reserve; most mothers want to come for ANC after the months have moved.]

When asked why they did not attend ANC at all or fewer than four times in their pregnancy, the most common response was distance, and in effect transport and lack of money for the user fees. Most health facilities indicated that they do not have a formal system for waiving fees, an even in situations where they did, women indicated that they would receive a scolding from the nurse.

Naitiri Woman R6

Wengine pesa. Sasa anaona afadhali aende kwa mkunga maana atambembeleza. Si unaona. Anaona ni afadhali aende kwa mkunga atambembeleza kuliko aje kwa sister amugombanisha. [Others don't because of money. So she feels that it is better to go to the traditional birth attendant other than coming to sister (nurse) to be criticized.]

Other reasons included long waiting times for both consultation and laboratory tests.

Ndalu Woman R6

Hosiptali unalipa ishirini transport ndiyo mingi. [We pay twenty shillings at the hospital, it is the transport that is expensive.]



Ndalu Woman R5

Yaa, halafu kitu kenye hakini fuharishi labda ni.....labda saa zingine nakuja kuna mlolongo, tu.... Ma nurses labda wafanya polepole nachoka, yaa! [What does not make me happy is that at times I go to the clinic and there is a long queue. Nurses are sometimes slow so I get tired.]

Tongaren Woman R4

Hizi huduma especially mama wawazito kuna wale up to now hawahudhurii ANC clinics na mostly ni that distance from nyumbani mpaka clinic. Sasa wamama wengine wanapuuza hawakuji kile clinic sababu huwa wanafikiria ile safari kutoka kwake mpaka clinic. Sasa kama wengetusaidia hizi ANC clinics kunakuwa na mobile clinics pengine. Waseme wazilete kwenye vijiji pengine kwa kila mwezi na tunajua wakikuja kwenye vijiji, CHWs watatusaidia kutoa hawa kina mama kwa manyumba zao na waende kwenye clinic. Kwa sababu ukimtoa mama pale halafu umwambie aende clinic kama pale Siraka kwenye ninatoka umwambie aende Naitiri, atakuuliza na transport nitaenda namna gani? Siwezi enda sababu wewe hautamuweka kwa mgongo umulete. Sasa kama wangetusaidia atleast ikuwe nearer pengine hao mama tungewatoa kwa manyumba wahudhurie clinic. [There are these pregnant women who up to now don't attend ANC clinic because of the distance from their places to the clinic. When they think of that distance from home to clinic they end up not coming. So if they could have helped us with mobile clinics, for instance they bring them to the villages every month. If you happen to get a woman from like where I come from Siraka and tell her to come to Naitiri, she will ask you whether you have transport for her. You can't

carry her on your back and bring her. So if they could have assisted us by bringing them near so that they can attend.]

CHW Home Visits and Pregnant Women's Clubs

In all intervention sites, CHWs were lauded by both beneficiaries and other implementing agents for their efforts in making home visits to sensitise expectant women on the project and teach them on the need for ANC and childcare and making follow ups with beneficiaries and coordinating PWC meetings.

Naitiri CHW R2

Kibinafsi mimi kama CHW role yangu ni kwa upande wa mradi wa Mama SASHA ni kwamba ninaelimisha wamama kule nyumbani wajue umuhimu wa kukuja kiliniki mapema. Halafu pia (simu inalia) (phone ringing) hapa kiliniki wachukue vouchers wanaandikiwa hapa wanaenda kutafuta zile vines wanaenda kupanda . Na halafu pia nafuata nijue ameenda kuchukua amepanda na halafu pia zinaendelea namna gani na anakula na kama anakula anaona namna gani na pia nafuata hadi dakika ya mwisho nijue amejifungua, na amejufungua mtoto wa aina gani na amejifungulia wapi? [Individually as a CHW, my role on the side of mama SASHA project is to educate mothers at their home to know the importance of attending clinic early. And here at the clinic they pick vouchers they are written here and they go to look for the vines to go and plant. Then I make a follow up to know if she has gone to pick them and if she has planted and to see how they are fairing on and if she is eating how she perceives them. Then I follow up to the end to know which type of child she delivered and where she delivered from.]

Feedback from women on these activities was all-round positive and encouraging.

Ndalu Woman R9

Kuna wenzenu ambao hata ukiwaeleza saa zingine hawawezi elewa,lakini ukipitia kwenu nyinyi wenyewe kuwaeleza ama ukipitia katika.....klinik, unaweza wapa mafunzo na waelimishe mahali plae na wazidi kuchua hizi vocha mm [There are some of us whom do not understand even after explanation but when visited by an individual...clinic they can get the information and start taking voucher.]

Naitiri Woman R9

Sasa nia yake ilikuwa ajue ninaendelea namna gani ama mtoto, yaani vile ninaenda clinic ninajisikia namna gani. Sasa akawa anaendelea kunitembelea na kunipatia moyo ka kuniendelea kuniambia usiaje hii viasi endelea kabisa, wengine hata watafaidika. Sasa tukakaa na yeye mpaka sasa anakujanga kuona vile tumepalilia namna gani. [Her intention was to know on how I was doing with the kid, that how I am feeling since I attend clinic. She continued visting me encouraging me to continue with the potoes even others might benefit. I stayed with her till now she comes to see how we have weeded.]

Ndalu Woman R5

Mimi mara ya kwanza alipoknitembelea, alini, nilikuwa sijawahi kuja klinik nilikuwa mja mzito, {baby crying} akanieleza nikuje klinik, wakati nilikuja klinik siku nilikuja klinik, tulikuja naye, na akanisaidia kupata zile vocha za vines mm. [The first time she visited me, i had

never been to the clinic, I was expectant and she asked me to go to the clinic. When I went to the clinic, she helped me get the voucher for vines.]



Sinoko Woman R1

Hapana. Mimi CHW huwa ananitembelea nyumbani kila mara na nimeona umuhimu wake wa kunitembelea juu hata anatumfuza kwa ajili ya kulisha watoto juu vile mtoto anazaliwa anayonyonyo mpaka miezi sita bila kupeako kitu chochote, halafu akifikisha miezi sita wa saba unaanza kumpea uji vijiko mbili kwa siku mara mbili. [No. For me the CHW visits me at home always and I have seen the benefits of these visits because he even teaches me on how to feed the child especially breastfeeding her exclusively for six months without giving her any food then after that you start giving her porridge two spoons twice per day.]

Mihuu Woman R3

Ehh alikuja mara nne akawa akija kuassess hiyo mradi vile nimepanda hiyo mbegu kuona ya kwamba hiyo viazi nilipanda au sija panda. Na kweli akaona jinsi nilikua nemepanda hata vile nilianza kula akawa akija kuangalia kweli mmeanza mmeakula? Mimi nilikula kama niko na mimba ya huyu mtoto. [Ehh he came four times and he was coming to assess that project the way I have planted whether I have planted or not. And he surely saw the way I had planted and even when I started eating how came to find out if we are eating I was pregnant with this child.]

Ndalu Woman R8

Okay mwanzo wakati alipokuja kwangu, akaja akanielezea kuhusu mradi wa viazi na kazi ambaye inafanya. Kisha akanielezea ya kwamba, ni vyema nihudhurie klinik kila wakati. Hii tarehe ambaye umeandikiwa unahakikisha umeenda kwa sababu kuna sindano ambazo zinatakikana upewe, na zinakusaidia wewe mwenyewe pamoja na huyo mtoto {noise from babies} [The first time the CHW came to my place. The CHW came and explained to me about the potato project and its importance. The CHW further explained the importance of going to the clinic at all times when I am expected to go to the clinic as there are some injections one is supposed to be injected to help the expectant mother and the unborn baby.]

A more difficult task for CHWs was identifying new pregnancies. Both they and beneficiaries spoken to admitted that women considered it superstitious to admit a new pregnancy too early, more so in the first trimester; in this sense it was difficult to know which women to target.

Naitiri Woman R11

Mimi kwanza wakati nilipopata mimba nilikuwa ni kama najificha. Nilikuwa too lazy. Sasa yeye ndiye alikuwa akinipea moyo na bidii kwamba nije clinic. Halafu sasa baada ya kuja clinic na akaniambia niende nichukue hizi kamba na wakati nilikuja ilikuwa mwezi wa kumi na moja wakati ambao hakukuwa na mvua. Nadhani wakati huo ndio ningechukua na kupanda lakini kufuatana na vile tunakaa kwa vikundi tukifundishwa, nimeshakula hizi viasi, nimeshakula kwa kutumia chapatti, cake nimeshakula. Kwa hivyo nikafurahia sana. [For me I was like hiding whe i got the first pregnancy.

I was lazy. She was the one who used to urge me to come to clinic and pick the vines and the time I came was on November when there was no rain. I think that is the time I could have taken to plant but according to how we are taught in clubs, I have already consumed these potatoes with chapatti and cakes. So I was really happy.]



Additionally, CHWs indicated that some women delayed picking up vines after picking up the vouchers, a task which they would then offer to do on behalf of the beneficiaries. Some CHWs felt that if they did not do this, some women would never plant the vines.

Ndalu Women R9

Mi nilichukua vocha, CHW akaenda akiniletea vines lakini mzee akakataa sikupanda, zikaharibika. [I got the voucher and my CHW went and brought me the seeds but my husband did not like them so I did not plant them and they got spoiled.]

The PWCs served both to attract and retain women. CHWs indicated that they had been approached by women who wanted to be members of the clubs – but had not qualified to or picked vouchers – while for other women, it was a big motivator.

Naitiri CHW R3

Imeenza kuwa rahisi wakati huu, kwa sababu mama wenyewe hata wanakutafuta tu. Unaona tu mama anakuja nyumbani anakuuliza nimesikia una club ya kufunza wamama alafu wapate mbegi. [It has started to be easy this time because these mothers themselves sometimes follow you. You can just see a mother coming home and asks you that I have heard you have a club to educate mothers then they get seeds.]

Club meetings are held at members' houses on a rotational basis and in some cases at a CHW's house. Club membership is optional hence not all beneficiaries are club members.

Mihuu CHW R5

Sisi baada ya kuwatambua vijijini tunawauliza je mungependa kuungana na wenzenu ambao huwa tunakaa na wao tukielimishana? Akikubali ataingia asipokubali atachukua

mbegu apande afaidike kutokana na mbegu but masomo pengine hataingia. [After identifying them in the villages we ask them if they would like to join others that we educate. If she agrees she will join, if she doesn't agree she will just pick the seeds, plant and then benefit but she might not join others in education.]

Women who were PWC members indicated that they were satisfied with the information they received at these meetings as well as the format of club coordination. Some partners indicated having attended a club meeting, though these were few and far between, they were however generally aware of the ongoings at these meetings with some reporting that they were the ones encouraging their wives to attend.

Naitiri Partner R7

They discuss about wamama wajawazito sijui how to care themselves something like that, yes. [They discuss about pregnant women and how they can care for themselves, something like that, yes.]



Vine Multiplier Services

VMs are tasked with educating beneficiaries on OFSP agronomy as well as being available to address concerns that they beneficiaries may have at the planting stage. Women who had picked vines explained that they had received information on how to plant and maintain the vines.

Ndalu Woman R9

Eeh aliniezeza aliniambia unaweka tatu tatu kwa kila mita. [Yes, she explained I put 3 seeds at a distance of a meter.]

DVM 003

Tunawaelimisha jinsi ya kupanda. Kwa sababu wengine tunawaonyesha... wakikuja sasa tunawaonyesha demo plot kuna njia tatu ya kupanda tuko na mount, tuko na ridges, tuko na flat halafu tunawambia mtu anaweza kupanda kulingana na size ya shamba yake.[I instruct and demonstrate to them on how to plant we have three methods of planting that is the mound, ridges and flat, we show them the demo plot and tell them one can plant according to the size of their farm.]

There was a challenge however, many women sent someone else, their partners or *boda boda* riders or their children, to pick the vines for them in which case knowledge transfer was not assured.

DVM 036

Utaratibu sasa kama ni mtoto, simwezezi kitu. Mi mwenyewe hiyo siku ya kwenda kwake, mi mwenyewe nitapanga niende mpaka huko.Kwasababu mtoto hata ukimweleza hata hajui. [If it is the child, I don't explain anything to her. I will plan and go there by myself because the child can't know anything even if you explain to her.]

Additionally, VMs reported that in spite of providing specific days/times during which mothers should collect vines, they still came for them on any day of the week forcing the VMs to serve them nonetheless lest they did not return.

Extension Services

Extension services are offered by extension workers from the government and the two NGOs supporting the project, CREADIS in Ndalú and Naitiri (Bungoma North) and ARDAP in Mihuu and Sinoko (Bungoma East). These services are provided to vine multipliers and beneficiaries.

Ndalú Woman R6

Waliweza kunielimisha, jinsa ya kuzungusha hizo kamba na nisiwe mchoyo kupatiana kwa wenz..kama kwa community, watu waendeleo kuzipanda kwa wingi. Na.....kutueleimisha mahali pengine penye hatukuwa tunashika tukiwa kwa field, kwa practical eeh. [I was taught on how to twist the vines and not to be mean in giving out to others so that many people plant the vines and teaching us on the areas we did not understand while in the field for practical.]

DVM 003

Anatupea mafunzo anangalia mimea kama iko na magonjwa anatuadvise kuhusu dawa ya kuweka na wakati wa kuprepere. [He trains us observes the plants for any diseases and advises us on the pesticides to use and when to prepare.]

Naitiri Woman R6

Mimi nilitembelewa na agricultural officer. Alikuwa na huyu CHW, community health worker. Walikuja tu kuangalia jinsi nilivyopanda najinsi zilivyokuwa zinaendelea. [I was visited by the agricultural officer who came with the community health worker to see how I had planted and how they were fairing.]

Mihuu Woman R3

Kuna wakati tulikua tu hapa kwa mafunzo na ilikua yah ii ya Mama SASHA na afisa wa kilimo huyu Catherine akatufunza tu juu yah ii viazi jinsi ilivyo na muhimu tuzidi kupanda tusikatae kupanda... akatuhimiza sana akambia wazee wapee wamama space wapande. [There was a time we were here for some teachings and they were for Mama SASHA and an agriculture officer Catherine taught us about these potatoes and their importance that we should plant them we should not refuse (to plant)... she advised us a lot and told the men to give us space.]

All vine multipliers indicated that they had been visited by an extension worker either from the government or one of the two NGOs; however, most of the women indicated that they had not been visited by either. Each VM indicated that they had been visited at least once. When queried about this, extension workers indicated that the beneficiaries were more than they could support.

**DVM 004**

Ee maafisa wa kilimo baadaye ndio walikuwa wakiingizwa ndani huwa wanatembelea na wanaongezea ujuzi kuhusiana na upanzi wa viazi au tukienda warsha au wanatuita kule tunapata mafunzo zaidi. Sasa unapata tunahusiana nao sana kwa nyancha ya kilimo kwa sababu lazima huwa wanatembea kila mwezi wanapitia kwa mashamba yetu kuona viazi inaendeleaje, mbegu zinaendeleaje. [Officers from the ministry of agriculture normally visit us and train us on potato planting or we go for training to get more information. We normally work together with them in the agriculture field. They normally visit our shambas every month to monitor the potatoes vines growth.]

Gender Considerations

Gender considerations that are associated with the intervention were explored, including how the other community members' perceptions should be addressed, such as those of the parents-in-laws and partners as well as issues related to women's control over resources.

The Mama SASHA project faced gender challenges from the start. Potatoes, sweet or otherwise, are typically considered a 'women's' food and are such are not a high profile crop in the community when compared to maize and sugar cane for instance. Given the project was primarily targeting pregnant women, this further validated the belief that sweetpotatoes are only for women.

Naitiri Partner R11

Watu wameichukulia kwamba hiyo viazi ni ya wamama wajawazito watu wengine hawawezi ku, {laughs} kula. So most men are scared, {laughs again} or some women hawajaambia wazee kwamba hata hao pia wanaweza kutumia. [People have taken that the sweetpotato is only meant for the pregnant women and the others are not supposed to eat. So most men are scared, or some women have not told their husbands that they can also eat.]

It was evident that the need to continuously sensitise men cannot be underestimated. Being the heads of the household, some women reported being assigned other duties on the day they had planned to pick vines as their husbands did not value the importance of OFSP.

Ndalu CHW R7

At sometime wakati huu mradi ulipoingia kusaidia hawa wamama na jamii kwa jumla especially wazee, wanaume hawakuwa wanapendelea hii chakula ya viasi. Lakini vile tulipata mafunzo na tukaona ni kitu gani unaweza tumia kando tu na kukula na maji, imesaidia sana kumbe wakaona ni chakula kingine bora sana kwa community ama kwa familia. [At some time when the projected was incepted to help these women and the community especially the old, men didn't like these potatoes as food. But as we got training and we saw what else could be eaten with the potatoes apart from water. It has helped them to know that it is food for the family and the community.]

**Naitiri Woman R4**

Mimi nilisikia wakati nilipokuja clinic nilikuwa na mimba ya mwiezi nne na nikaeleza juu ya mama sasha, juu ya ile mbegu. Nikaambiwa unapotumia yaani zile viasi iko na madini mbali mbali ambayo itazaidia mama mjamzito pamoja na mtoto. Na kweli nilifurahia na nika sign voucher ingawaje sikuenda nayo. Na nilipofika nyumbani nilijaribu kumuuliza mzee kuhusu zile viasi lakini yeye haku, ni kama hakupenda. [For me I heard when I came to clinic with a four months pregnancy where I was told about Mama SASHA, about those vines. I was told that when you use the potatoes, they have different nutrients which will help the infant and the mother. For sure I was happy, signed the voucher though I didn't go with it. When I reached home, I tried to ask my husband about those potatoes but it was as if he didn't like it.]

In the Bungoma community, men are the custodians of land. They determine land use and in effect crop allocation. Women continuously complained of their husbands not giving them land allocation for the OFSPs, especially at the start of the project, which points back to the need for intensive male sensitisation.

Ndalu Woman R3

Mzee alikuwa amesema mpaka tupande mahindi kwanza. [My husband said we first of all plant maize.]

Ndalu Woman R9

Mi nilichukua vocha, CHW akaenda akiniletea vines lakini mzee akakataa sikupanda, zikaharibika. [I got the voucher and my CHW went and brought me the seeds but my husband did not like them so I did not plant them and they got spoiled.]

Another gender issue that the project faced was that women would not openly reveal that they are expectant, not only to CHWs or other community members, but also their partners. Hence the PWCs brought in the dynamic of some partners finding out through the clubs that their wives were expectant.

Naitiri CHW R5

Aikuwa rahisi, kwa mwanume kugundua kwamba mama ako mjamzito na unajua kama ako zaidi ya miezi sita, lakini kwa sababu tunapitia kama CHWS tunawafunza, sasa inakuwa rahisi kukugundua ya kwamba mama ni mja mzito akiwa na miezi mitatu na muadvice anaingia kwa kikundi. [It was not easy for a man to know if a mother is expectant and you could know if she is more than six months but now as CHWs when we teach them it is now easy to realise that a mother is expectant at three months and I advise her to join the club.]

It was also apparent that PWCs, in their attempts to include men, had not succeeded in doing so. Even though the project strategy was for PWCs to be a women-only affair, in areas such as Ndalul, CHWs were seeking male involvement for project buy-in, supporting their women to attend ANC and encouraging OFSP cultivation. This was a strategic move also considering that men were the custodians of land and the ultimate decision makers on crop (type) cultivation.

Ndalul Woman R9

Sasa unnaona wakati tunaenda, mtu anakwambia aah! Mi siwezienda kwa kile kikundi, nyii endeni kama kina mama mujifunze maneno yenye munajifunza. [When we go to the group they say we just go as women and get to be taught women issues.]

The project name, Mama SASHA, also left the men feeling excluded with suggestions being floated to rename the project that would pull the men.

Consumer Acceptability of OFSP

Acceptability of OFSP by beneficiaries had all the indications of being high. In Ndalul for instance, CHWs claimed that beneficiaries had completely replaced the Bungoma variety of SPs with OFSP which they had observed had relatively higher yields.

Ndalul Woman R5

May be (za kawaida) zinachukua six and above months, na hizi zinachukua muda mfupi. Kwa hivyo zina...Kwa upande wangu zimenisaidia zina encourage nipande hizi viazi sana. [The ones we normally plant may take six months and above to be ready but these ones take a shorter period. So they have encouraged me to plant them.]

Mihuu Woman R4

Kushinda Bungoma kwa sababu tunakula vizuri tena ni ya muda mfupi. [They are better (than Bungoma) because we eat well and they take a short time.]

Mihuu Woman R5

Inakua tayari (haraka) na Bungoma ni ya muda mrefu. [And it is ready (quickly) while Bungoma takes a long time.]

CHWs were instrumental in demonstrating to beneficiaries the various ways in which OFSP could be prepared during PWC meetings.

Ndalu CHW R5

Changamoto ambayo imenipata, nilikuwa na lesson last month ya OFSP cooking demonstration. Ilikuwa changamoto kwa wana kijiji wote kwa jumla, mpaka wazee walijumuika tulifanyia kwangu wote walikuwa very cooperative wakiwa eager kuona, kujua wana prepare aje hii viasi. Nawambia tutapika chapati kila mtu kweli anauliza hii chapatti iko namna gani na in taste namna gani. Na waka taste hata mboga majani tulipika na wakapenda hata wengine wakauliza mbona hamkutupa ruhusa sisi wengine mnapatia kina wajawazito. [The challenge that I got is when I had an OFSP cooking demonstration last month. It was a challenge in general to the community members with even men coming eager to see and know on how these potatoes are prepared. We cooked chapatis even vegetable from the OFSP leaves and they liked it even asked on why it is limited to pregnant mothers only.]

Naitiri CHW R4

Generally, wale wamechukua mbegu na wakapanda na wamekula wanasema hakika hii viazi ni nzuri. [Generally, those who have picked these vines and planted and ate them say they are surely nice potatoes.]

Acceptability was largely driven by the health and agronomy benefits of OFSP. The biggest driver with regard to health was the added vitamin and morbidity prevention (mostly eye related) value and where agronomy was concerned, maturity time and (higher) yields.



Naitiri Woman R4

Kitu kilichonifurahisha ni kuhusu zile viasi niliambiwa ziko na Vitamin A, saa nikafurahia. [What I liked was about the potatoes which I was told have vitamin A.]

Ndalu Woman R8

Na pia imenisaidia kwa sababu nina kijana mabaye alikuwa na eye problem, macho zake zilikuwa zinamsumbua kabisa lakini vile nimekuwa nipika hivi viazi akivila, sasa ni muda, sioni akilalamika na sijaona

tena macho yake ikibadilika. [It has also helped me because I have a son who had eye problems, but I have been cooking the potatoes so I have not not heard complaining, his eyes have not given him a problem again.]

Naitiri Woman R3

Nimesikia yaani eti ina protect mtoto kutoka kwa nini...yaani vile unakula mtoto ana nini..ina protect mtoto kutoka kwa disease. [I hear that it protects the child from...diseases.]

Sinoko CHW R1

Kukomaa, akilinganisha na ile ingine, akichukuwa three months, na anaona akienda hapo, atapata at least viazi iko. Lakini aki, ile ingine hao hiyo ya zamani, akienda hapo hiyo after three months, {someone says "hakuna"} ataona hakuna kitu. [Early to mature compared to the other one. She thinks that if she takes three months and when she goes there she will find at least the potatoes ready. But the other one, the previous one, after three months when you go to check there will be nothing.]

Partners generally echoed their wives sentiments.

Ndalu Partner R2

Na ile vitamin tunapata kutoka kwa hizo viazi ndio inatupea appetite kukula tena tunakua na haja nayo kabisa. [It is the vitamin that we get from the potatoes that gives us the appetite to eat and also we need them.]

Sinoko Partner R4

Na...itu yenye ilinifurahisha, kuna gaseti fulani alipewa, nikawa ninapita nikaona hizo viazi kuna vitamin A. [And what made me so happy was a news letter she was given had some information that the sweetpotatoes we had planted had vitamin A.]

Substitution in favour of OFSP was also driven by gastrointestinal related effects. Both CHWs and beneficiaries reported that the older Bungoma variety of SPs was notorious for being perceived to be the cause of stomach upsets and diarrhoea.

Sinoko CHW R10

Hii mradi wamama wameifurahia kwa sababu hii viazi watoto wakikula, hawaendeshi, wanakula tu, tumbo haiwasumbui. [The women are happy with this project because when the children eat this potato they don't diarrhea, they just eat and they do not experience stomach upsets.]

Misconceptions about the Project

Misconceptions were defined as views or opinions on the Mama SASHA project that are incorrect because they are based on faulty thinking or understanding. There were two primary misconceptions regarding the Mama SASHA project, OFSP were either for family planning, hence the reason the project was targeting (expectant) women or were for those who were HIV positive. Communities were of the opinion that pregnant women were being targeted so that they would not deliver another child. The baseline survey appeared not have helped matters as some community members were suspicious of the project given blood samples were being taken to assess Vitamin A levels.

Ndalu Woman R9

Sasa wakati nikuja mara ya kwanza, yenyewe mzee wangu alikataa. Akasema hii viazi hiwezi pandwa hapa. Iwapo utapanda hii viazi, wee utakuwa... uko na... uko victim. [My husband refused the first time I came, he said the potatoes cannot be planted here, (he said) if you plant the potatoes you will be a victim.]

Sinoko CHW R4

Ilichukuako muda, kwa sababu vile huu mradi ulikuja. Wengi walikuwa wanasema ati aah! Kwa hiyo viazi wanapenako watu wenye wako positive. {Laughter} Siunaona, sasa wanaume walikuwa wasema hakuna shamba hapa ya kupanda viazi. Lakini nayo walifika mahali wakaona eeh! Hii viazi kumbe...iko ni ya kila mtu, tena ikona vitamins A ya juu. [It took time because when this project came. Most people were saying aah! That potato which is given to HIV positive people. You see, now the men were saying, "there is no plot here to plant vines." But they reached a point and said eeh! So everyone has this potatoes and they even have vitamin A!]



These misconceptions were heavier when the project began but waned off with sensitisation, but not completely, with time. The need for continuous community sensitisation was observed. That initial awareness on the project primarily targeted women was (genuine) cause for concern as the intensity of awareness for other groups in the community was significantly low.

Feasibility

An intervention could be acceptable, viewed positively by potential beneficiaries, but not feasible, practical to implement. Findings presented in this section are concerned with the factors that affect feasibility of integrating the Mama SASHA OFSP intervention into a health service strategy, specifically looking at perception of the initial training and its impact on service delivery, the impact on implementing agents' time and in effect the capacity and resources they require, the modalities of the voucher distribution system and sustainability. It also addresses feasibility of integration of OFSP into the farm/household production system of beneficiaries.

Factors Affecting Successful Implementation of the Project

There were ten key factors which have determined success of the Mama SASHA project, the training provided at project inception, services provided and their interaction with routine work, support systems for implementers, availability and perception of IEC materials, modalities of the voucher system, coordination between implementing agents and stakeholders, integration of health and agriculture sectors as well as between Mama SASHA and APHIA Plus.

Training

Prior to the Mama SASHA training, all implementing agents had received in-service training but none specific to OFSPs or nutrition for pregnant women. Nurses and CHEWs reported having been trained in nutrition during their professional training and also engaged in scheduled Continuous Medical Education (CME) at the health facility. CHWs had been trained in basic primary healthcare as well as training in specific intervention areas supported by other partners.

Ndalu CHW R1

Tulitrainiwa na AMPATH... last December... Mambo na afya tu ndiyo tulitrainiwa, eeh. [We were trained by AMPATH...last December...we were only trained on health issues.]

CTRL ANC Nurse 020

Yah, we go to Aphiaplus trainings...I have gone for a training on post-abortal care, community strategy, PMTCT review. And what else...for me those three.



Ndalu CHW R5

Ilikuwa tu topiki ya...afya, vile uawezakwenda uulize...community wakuwe wasafi, wakuwe na choo, wakuwe na hiyo, mm.[It was just on health, how you can go find out how clean the community is, they have latrines, they have that, mm.]

In the intervention area, nurses, CHWs, CHEWs, VMs and extension officers participated in a joint 2-day training aimed at strengthening knowledge across health and agricultures sectors. It was anticipated that this would strengthen linkages so that those from the health sector understood agronomic issues and those from the agricultural sector also got a better understanding of needs of pregnant women and their infants.

Government Extension Officer 015

I really enjoyed because it really covered a vast of subjects. Because they talked about crop production, they also talked about nutrition. And then they also talked about collaboration within the...amongst the stakeholders. So it was...on overall, it was so good. Yaa.

Most implementing agents did not acknowledge the cross-sectoral learning as a benefit even though they commended the cross-sectoral collaboration in implementation of the project. This is an area that requires improvement as it was evident that both categories of actors focussed more on their own areas of expertise and not of their partners. All the same, implementing agents were generally satisfied with the training provided at the beginning of the Mama SASHA project in the sense that they received new knowledge that they could then apply to their project work.

NGO Extension Officer 006

Well I have been able to understand the nutrition part of the project. I am now able to explain to (a) pregnant woman.

For administrators such as, it was primarily new information for them which supported their mobilisation of communities.

Chief 013

... we had the one in Kakamega where we mixed with the agriculture sector, the CHEWS and administrators. Coming together for one purpose so we learnt something with the health educators or something..public health... so for the first time it put as a team working together for a common goal.

For vine multipliers, the training was a big advantage as most had not received any formal training in agronomy.

DVM 003

R: Hii mradi kitu yenye ilinivutia nilifurahia kwa sababu nilienda huko kwa seminar.... kwa sababu mimi nilikua mkulima na nilifurahi sana nikajua kumbe kuna hii viazi tunaweza kuimprove nikipata iko improved hivyo na pia wakati ninafanya hio ninasoma pia ninapata more knowledge ya kupanda hata mimi naweza kupandako yangu hata hii ya local. Njia ya kupanga na agriculture pia wanakufunza na kujua kuwa kumbe pia hiyo inawekwa mbolea. Sisi tulikua tunapanda tu yetu lakini ukitop dress unaweka mbolea unapata viazi kubwa. Na nimefurahia kwa sababu sasa hii mradi ya irrigation hio hata program sasa ikipull out nimebaki na faida itanisaidia. [Through the seminar I attended I came to know of the improved variety of potatoes and better knowledge of growing potatoes, how to apply fertilizer and top dressing potato plants and carrying out irrigation. And I am also happy with the irrigation program because even if the project pulls out I will have benefited.]

Participants from both intervention and control sites felt that the training content was sufficient at the time but were of the opinion that the duration was not as the schedule was very tight.

Makhonge CHW R7

Mimi niliona kulingana na muda wenye walikua wameallocate ilikua ati tuchukue period kama mwezi moja lakini ikafupishwa kwa siku chache hizo kumaanisha haikuwa effective ikacover kila sehemu. [Initially the training was to take a month but it was shortened hence it did not effectively cover all sections.]

ITVN ANC Nurse 009

The facilitators were, in fact they gave us quality, in fact we had from the province, some came from the province and we really had it good. And we also had



the CREADIS and ADIS and the PATH. Yah we had a lot of information though we felt that it could have been pushed to at least one week... we were happy with the content..

Naitiri CHW R10

Ilisaidia kujua mambo ya afya...na pia nikajifunza mambo ya facilitation skills na hata ikaniboost kwa ajili ya personality. [Helped me to know issues to do with health...and I also learned about facilitation skills and it also boosted my personality.]

Naitiri CHW R2

Ilifunza umuhimu wa unyonyeshaji mtoto hadi miezi sita ndio apewe vyakula vingine. [It taught me about exclusive breastfeeding for six months before the child is given any other food.]

This study also sought to find out how the Mama SASHA training has impacted health service delivery and the improvements (and challenges) that have been experienced. The response was generally positive among most agents with the exception of CHWs who generally felt that additional training was required.

Tongaren CHW R3

Sasa challenges zingine ziko very technical in the sense ya kwamba labda mimi sikupitia mambo ya human science na sasa labda swali ambalo ameuliza inahusisha mambo na human body... human science so that is a challenge to me. [Some challenges are very technical because at times I am asked issues relating to human science and I was not trained on that.]

GAEO 007

They were okay because in these areas mostly things like sweetpotatoes were not so much dealt with maybe the farm owners felt that they will waste their farms on sweetpotatoes but then when we go there we are motivated we are taught we are reminded of the agronomy the activities we had forgotten maybe so when we come back and start teaching these farmers they see at least there is something good and you see that nowadays mothers are...there are some people who have started allocating mothers plots to plant these potatoes but formally they used to say that potatoes are not very important now they are seeing the importance of sweetpotatoes.



CHEW 010

You know on sweetpotatoes generally, men from since were saying that if you eat sweetpotatoes it lowers the powers on the sexual urge but after the training when we came back to meet with the communities we told them that that was just a mere say.

NAEO 006

I have never had any challenge because let me say the knowledge I got from the trainings is the one that is making me confident and be able to answer all questions that arise.

In some cases, CHWs felt they did not have the capacity to answer all questions raised by beneficiaries during PWC meetings. Following every PWC meeting, CHWs filled in a feedback form that highlights areas they had difficulties with, they reported that even on listing these areas, they did not receive any support to address them. Where they attempted to raise them during feedback meetings, there was not enough time to address them if at all. It was envisaged that PWCs were a platform to enhance learning and have women raise issues that CHWs would attempt to address following which they would escalate those that they could not to the Mama SASHA team who would in turn capacitate the CHWs as well as develop new learning materials for them. This has not worked as planned.

Naitiri CHW R3

Wakati nilitoka huko niliona imetosha lakini wakati nimeenda field unapofunza wamama unaona wanakuuliza maswali haswa sana kuna last month nilikuwa nafunza wamama na nikaona wamama wananiifunza..wananiuliza maswali kuhusu danger signs sana in pregnancy sana nikajipata siwezi kujibu. Eeh, kitu yenye iliniokoa nilikuwa na CHEW, CHEW akanisaidia kujibu, na nikajuliza na kama kwa sababu CHEW huwa hanifikii every month, anaweza hii aruke hadi ile nyingine ndio akuje the next club meeting. Wakati najikuta niko pekee yangu inaoneka mbaya sana, wakati wewe ndiye mwalimu umesimama mbele unaona you are a TOT (laughter) lakini unaulizwa swali yenye hujui vile utajibu kabisa. Sasa mpaka nafifikiria tungepelekwako kwa refresher training tena ili tuelezewe vitu yenye inatusumbua sana. Kwa sababu kwa summary form huwa tunajaza unanswered questions na inaenda tu na hatuambiwi chocho...chochote. [After coming back I thought it was enough but when I went to the field when you teach these mothers you find that they are asking questions. Especially like last month when I was teaching the mothers I saw as if they were teaching me they asked especially about danger signs in pregnancy and I was unable to answer. What saved me I was with the CHEW so the CHEW helped me to answer and so I asked myself because the CHEW doesn't reach me every month she can come this month and next month may not come until the other one that is when she can come for the next club meeting. So when I am alone it is embarrassing when you are the teacher you are in front as a TOT but you are asked questions that you can not answer. So I was thinking we should be taken for a refresher training to be taught on where we are getting problems because we always fill in the summary form the unanswered questions but we don't get any feedback on it.]

Service Provision

Implementing agents were asked to describe the services they are providing to make the project successful, these are detailed in [Table 6](#):

Table 6: Services Provided by Implementing Agents

<i>Group</i>	<i>General Responsibilities</i>	<i>Services Provided for the Mama SASHA Project</i>
ANC Nurses	<ul style="list-style-type: none"> Provision of MCH services 	<ul style="list-style-type: none"> MCH consultation services Nutritional counselling –group based except for PMTCT clients Distribution of vouchers to qualified mothers
CHEWs	<ul style="list-style-type: none"> Supportive supervision of CHWs Training of CHWs Community health extension services 	<ul style="list-style-type: none"> Attending and supporting PWC meetings
CHWs	<ul style="list-style-type: none"> Eyes of the health system on the ground, link between the community and the health care system 	<ul style="list-style-type: none"> Home visits for health and nutrition talks and follow up of beneficiaries (planting and harvesting) and mothers who have delivered either at home or in the facility Referral of the critically ill Health and nutrition talks at HFs Coordination of monthly PWC meetings Vine pick up on behalf of mothers
Government AEOs	<ul style="list-style-type: none"> Agronomic support to farmers, primarily VMs 	<ul style="list-style-type: none"> Support VMs during land preparation and planting Support (but to a lesser scale) OFSP beneficiaries
NGO AEOs	<ul style="list-style-type: none"> Agronomic support to both VMs and beneficiaries 	<ul style="list-style-type: none"> Support VMs during land preparation and planting Support (but to a lesser scale) OFSP beneficiaries
VMs	<ul style="list-style-type: none"> Vine multiplication 	<ul style="list-style-type: none"> Distribution of vines to mothers On-site agronomic counsel to mothers

A notable issue is that even though the project design intended that vine multipliers reinforce health and nutrition messages, they did not acknowledge this as a service they provided; their focus seemed to be purely on agronomic matters.

Interaction of Mama SASHA Responsibilities with Routine Work

As Mama SASHA's implementing agents have other responsibilities, the study explored how their routine work interacts with project obligations. There were mixed responses, generally most nurses and CHEWs were comfortable with Mama SASHA responsibilities and felt they had done well to integrate this into their routine work.

ITVN ANC Nurse 001

It has not really affected because we have just integrated mama SASHA into the services already being offered in the system...you work extra hard to manage it.

ITVN ANC Nurse 021

It has not really affected but I think it is complementing our work...it is really assisting us get mothers to the ANC. And then ee... at least it gives us time to talk about their nutrition, family planning, breastfeeding, all those. And even for us it is easy to detect some who have medical problems we treat early as we prevent complications.

CHEWs felt that Mama SASHA work was bringing them closer to the community and complimented their routine extension work.

CHEW 002

It has not really affected, it has improved because it has now brought me closer to the community through the community health worker because it is not only when we go to the field, it is not only Mama SASHA, there are many other things that we look into like the environmental sanitation, whatever, the nutrition of the people, the jiggers, there are so many things we are involved. So the CHWs and the Mama SASHA you know we link those things together.

The response from administrators and officials at district level was similarly positive.

CHF 025

No I don't think they (Mama SASHA) have really affected negatively because like when I plan my schedule I also have room for those other events that come in abruptly so I don't think I am affected negatively.

DPHN 017

Let us say positively at least the health workers were able to get to as many mothers as possible antenatally and even during that time there were health messages they were passing to them during that time when they come to the health facility.

Even though fulfilling, vine multipliers reported that Mama SASHA work was labour intensive, and time consuming.

DVM 011

Hiyo miradi (this project) especially ikija kwa (when it comes to) establishment ya nursery I tell you it's very much involving, labour intensive.



In other quarters, some nurses reported that given the project had resulted in higher ANC numbers, their workload had similarly increased.

ITVN ANC Nurse 009

As an ANC, the workload increased even more as compared to the shortage really we have on the ground because there is a lot of writing though with counselling we are not doing it as per the cards of Mama SASHA. We are doing it generally, now that there is PMTCT also

added with Mama SASHA, we get at least the workload has increased with a lot of paper work...there are burn-outs if we had more nurses, ANC nurses, that could have been eased but at the moment there is an acute shortage of which we have one nurse.

CHWs were generally disgruntled across the board, indicating that home visits took up a lot of their time and personal resources such as commuting costs.

Naitiri CHW R1

Kwa upande wangu kwa kazi ya kawaida, unakujukua muda kutembelea hawa mama kwa sababu unatakikana utembelea, ujue wenye wako na mimba, uwatume hapa kwa hospitali, wapimwe, waelezewe kila kitu sasa yangu itakuwa imesimama kwa sababu yangu nimeiwacha kwa muda. Saa baada ya kuwatembelea hawa mama, ninawatuma huku ndio nirudi nyumbani niendele na kazi yangu ya nyumbani ya kawaida. [On my side for my individual work, it takes a lot of time to visit these mothers because you are supposed to visit them and know those who are pregnant, send them here at the hospital they be tested and informed about everything and now my work will have stopped because I have left it for awhile. So after visiting these mothers, I send them here so that I go back home to continue with my normal work.]

Mihuu CHW R10

Imeadhiri kwa sababu huwa nikichukua muda wangu mwingi kuenda kuelimisha hawa wamama na kazi zangu za kinyumbani zinagwama. Sasa kwa njia moja ama nyingine financially income yangu huwa ikirudi chini kwa sababu ya kushughulika na huu mradi wa Mama SASHA. [It has affected me because I take a lot of my time to go and sensitise these mothers and then my activities at home remain at a standstill. So in one way or another income usually goes down because of the activities of Mama SASHA project.]

Naitiri CHW R5

Yaani nimefika hapa nimechukua pikipiki nimeenda nimemutafuta nimlete. Sasa katika unaona hali kama hiyo tena ina affect, najitolea nione kwamba katika kijiji changu niseme kama sublocation nione kwamba na fanya kazi yangu...[I had to come here, pick a motorcycle, go, search, and bring the person. So in that case, it affects me in that I have to sacrifice like in my village to see that I am working...]

Naitiri CHW R10

Na on the other side, unapata kwamba you use a lot of energy and time coz inabidi usimamisha kazi nyingine za kawaida ambazo ni muhimu sana kwa ajili kazi hii. Like for instance today imebidi kwamba nisimamisha kazi zangu nyingine so that nije nifanye hii. So utakuta kwamba itaffect hiyo kwa sababu inatakikana ripoti ama inatakikana nikamilishe hata kazi yangu ya nyumbani. So unafecta na inachelewesha kazi nyingine. [And on the other side you find that you use a lot of energy and time because you are forced to stop your normal work which is so important for the sake of this work. Like for instance today I was forced to stop my other work so that I come to do this one. So you find that it will affect the other one because a report is needed or I am supposed to finish my work at home, so it affects and it delays other works.]

Support Systems

Support systems were defined as the network of provincial or district level stakeholders supporting the intervention sites and agents including external supervisor support. Agents' views were that they were feeling supported by relevant institutions, individuals and organisations in their work including that related to the Mama SASHA project. Agents were also asked to express their views on how supportive their supervisors were, whether they provided regular support and feedback. Generally, respondents indicated that external supervisors provide staff with constructive feedback during supervisory visits though this feedback was not always timely.

ITVN ANC Nurse 021

Because they (supervisors) also encourage this health education about breastfeeding, especially exclusive breastfeeding and the value of a child who has exclusively breastfed.

CHEW 002

We are supported sometimes by APHIA II, they are the ones who are supported by what we call, we have the HHSF which supports the MCH. You find that when we go to the field or the mobile clinics, they are given transport and lunch even plus the community health workers. They are supported by the ministry.

Availability of IEC Materials

Beneficiaries, both women and their partners, reported having read IEC materials either at the health facility or those with CHWs.

Govt. Extension Officer 037

Like the beneficiaries they feel happy you know when you talk something someone does not see, you know like the pregnant mothers most of them you have to teach them first there are some who will go and start to pick the vines because of those charts I told you.

CHWs extensively used IEC materials during PWC meetings.

Mihuu CHW R3

Wakati unapanga kama siku ya discussion wakati unapanga siku kama ya leo utakuwa na kikundi wewe kama CHW unajitayarisha naile topic yako ya siku hiyo. Na kupitia kwa hiyo chart utakuwa umetayarisha kama ni topic ya breastfeeding utaangalia na unaweka mbele ya meza sasa kama vile mumekeaa hivi na inaangalia sasa hiyo chart hiyo picha inaangalia sasa akina mama. Na unanza kuwaelezea mumeona nini katika hiyo chart kama kuna picha ya mumama mjamazito anaenda clinic watakuambia wenyewe kupitia kwa hiyo picha sasa discussion inanzia hapo? [When you are preparing for the discussion day you decide like today you will have a club meeting as a CHW you start to prepare for the topic of that day. And through the chart you would have prepared the topic if it is breastfeeding you will check it and put it on the table and the picture facing the mothers. Then you start by asking them what they have seen in the picture if there is a picture of pregnant mother they will tell you themselves then the discussion will start from there.]

Women confirmed the use of IEC materials at PWC meetings, but indicated that they were not given any materials to take home.

Sinoko Woman R1

Ndio CHW anatatupea gazeti which are easy to understand. Ziko na picha kwa wale hawatajua kusoma na wanatuelezea vile zinafaa kutumika. [Yes, CHW gives a newspaper which is easy to understand. They have pictures for those who don't know on how to read and they explain to us on how they are supposed to be used.]

ANC nurses also routinely used IEC materials during nutrition counselling at the health facility. Some women indicated they had been given brochures by the ANC nurse which they then took home.

ITVN ANC Nurse 001

We just use them (IEC materials) by showing the client demonstration by showing the client here we have the mother takes sweetpotatoes from the farm and how she prepares them, how she can even make them chapatis, mandazis (donutes) she can use with other foods like avocado you see and also here you show to the mother that all the family members can benefit from the sweetpotatoes.

Sinoko Partner R4

Na...itu yenye ilinifurahisha, kuna gaseti fulani alipewa, nikawa ninapita nikaona hizo viazi kuna vitamin A. [And what made me so happy was a news letter she was given had some information that the sweetpotatoes we had planted had vitamin A.]

Nurses highlighted that they rarely have sufficient IEC materials hence they used those that were available for illustrative purposes only. They however had brochures at the beginning of the project that they would hand out to all voucher beneficiaries. Half of the vine multipliers spoken to indicated using IEC materials to explain OFSP agronomy once a mother went to pick vines, they also indicated that they initially had materials for the mothers to take home but did not any more.

DVM 004

Kuna some karatasi ambayo tumepewa ambayo tunapitiako kuonyesha (kina mama) mafunzo.[There is a paper that we have been given that we go through (with the mothers) for them to learn.]

DVM 023

Ile sasa tukienda pale kwa shamba hua nachukua ile flip chart. [When we go to farm I take the flip chart.]

The perception by beneficiaries of IEC materials illustrated was positive. Mothers indicated that they were easy to understand.

Ndalu Woman R5

Zile charts, wakati munaelezwa na pia zina picha, ziko pale. Sasa zinakuwa rahisi kueleweka.[When you are being shown the charts that are there, they are now easy to understand.]

ITVN ANC Nurse 009

You see like when they get that picture, its coloured because we proposed it to be coloured instead of it being black or white. So it induces them and they are every keen. You know the posters are good in such a way that it faces the crowd then all whatever you want to talk about is on your side, so you are very comfortable. Yah..the posters are ok.

Many of them admitted to not knowing, previously, which foods belonged to which food groups and/or contained which nutrients.

Ndalu Woman R9

Yaani wakupangia madini halafu wamekuchorea na kila, child nini, cha nini, madini na chakula yake, chakula yake. Sasa hapo ilinipa moyo, sikuwa najua chakula Fulani inanipa madini fulani. [They drew all the types of nutrients for the child, minerals and the foods that has the nutrient. So I got encouraged as I did not know which food contains what nutrients.]

It was apparent that images, coloured at that, drew the beneficiaries to the materials.

Sinoko Partner R6

Na inapeana in details kwa sababu niliona yangu inawekwa hata na picha nzuri amabo mtu anaweza kuanagalia...Nilitosheka anzo hata na rangi yake. [It gives details because I saw mine with pictures that someone can look at, I was satisfied with them and also with their colour.]

Naitiri Woman R9

Zinaeleweka tukisoma hii maneno tuelewe na tunaona picha, tunaolewa tu. [They are understood when we read and see the pictures.]

Suggestions for improvement included having the materials also produced in Swahili as most of them were in English and having the materials readily available at the health facility and with CHWs and vine multipliers.

Naitiri Woman R2

Si rahisi juu wengi hatujui kizungu (lots of laughter) yaani kuelewa kwetu tunaangalia tu ama watusomeshe, ama tukipewa we unaangalia tu hivi. Sasa mkiandika kwa Kiswahili pia ni vizuri. [They are not easy for most because we don't know English. I mean for our understanding it needs they read for us or we have a look at them, so if you write in Kiswahili it will be okay.]

Modalities of the Voucher System

This study sought to understand how the voucher system is working, whether vines are picked on time, who picks and transports them and whether land is (usually) immediately available to plant. Women who picked the vines later picked them themselves or sent their husband, relative or *boda boda* operator to pick the vines on their behalf. Vine multipliers reported that vine pick up was severely delayed during dry periods such as the period towards the end of 2011. CHWs and women also reported that delays were also a result of land allocation by either their partners or mothers-in-

law more so during the maize planting season. Some women had to go as far as leasing land from friends or relatives to plant the OFSP as their partners would not allocate space. It was evident that maize (and sugarcane) took precedence over all other crops. For newly married women, who would traditionally live with their mother-in-law for some time, it was even more difficult having just recently moved to a new home. Some beneficiaries also intimated that the validity period of the vouchers was too short when faced with challenges such as lack of land or the dry season. Other women intimated that the vine multipliers were too far which had a cost implication; more so if they had to hire a *boda boda*.

Ndalu Woman R9

Mi nilichukua vocha, CHW akaenda akiniletea vines lakini mzee akakataa sikupanda, zikaharibika. [I got the voucher and my CHW went and brought me the seeds but my husband did not like them so i did not plant them and they got spoiled.]

Ndalu CHW R9

Sasa kwa wale wana delay, kuna wengine huwa wanachukua vouchers na hawaja prepare shamba. Sasa huwa wanakuja mwenyewe ana prepare shamba wanaenda wanachukua kupanda sababu tumewafunza jinsi ya kupanda na wanapanda lakini wengine wenye wana delay ndio wale tunawafanyia follow-up kama wale sita nimekuelezea. [For those who delay, there are those who take the vouchers when they have not prepared the shamba. They just come by themselves prepare the shamba and pick the vines for planting because we have trained them on how to plant. Those who delay are the ones we make follow-up on like the six I told you.]

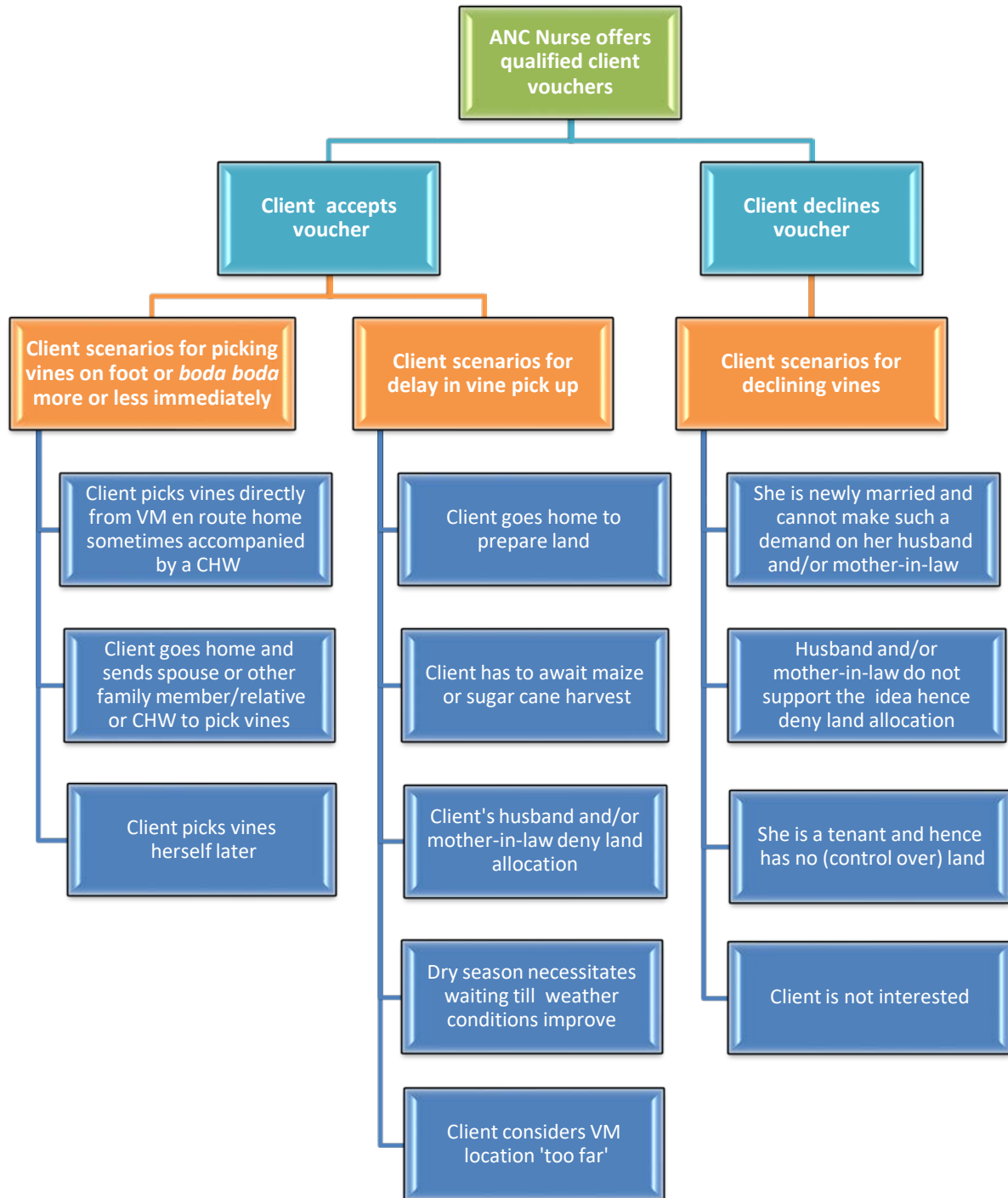
Some CHWs thought that they would be more suited to issue vouchers as this was happening anyway in facilities such as Sinoko where self-appointed CHWs supported the ANC nurses.

Sinoko CHW R1

Kulingana na mimi maoni ambayo niko nayo, ningependekez ni.....tungekuwa na one of the CHW, one or three CHWs wawe wanakuwa hapa wakisaidia hawa nurses, kuandika, issuing of those vochas. Tuwe na CHW uko yule ambaye anelewa jinsi ya kuandika, hizo vochas. So ikifika huko yee anafanya nini, anaandikia huko zile za outreach anapena wale wamama wanaenda. [According to me, what I would propose is that we should have one or two CHWs in charge of issuing those vouchers. We have a CHW there who understands how to write these vouchers. So when we go she writes the vouchers there and issues to the women.]

Figure 12 provides an illustration of scenarios for women to accept vouchers and subsequent actions as well as for those who declined vouchers, possible scenarios for the same. In cases where women declined to pick vouchers, nurses in Ndalu and Naitiri reported that women who were renting their premises would decline to take the vouchers as they had no land. In other instances women reported not being interested or knowing their partners would not be interested in the venture.

Figure 12: Client Scenarios for Accepting or Declining Vouchers



For women who accepted the vouchers, they had the vines picked on foot on a CHWs' or relative's bicycle or on a boda boda (bicycle taxi). CHWs reported that women either picked the vines on their way home from the health facility or later on. Some CHWs present at the health facility would sometimes accompany the women to the vine multiplier and would sometimes assist them to carry the vines all the way home. Depending on where a woman lived, relative to the health facility and to the vine multiplier's farm, and depending on how she chose to transport her vines, the costs and time varied significantly across beneficiaries. Some women indicated they paid between KES50 (US\$0.60⁵) and KES200 (US\$2.40) to transport vines, while the majority indicated they did not incur any out of pocket expenses.

Ndalu Woman R8

Nikamuwachia (CHW) vocha yee mwenyewe akaenda akaniletea hizo vines. [I left her (CHW) the voucher and she went and picked for the vines.]

Ndalu Woman R8

Mi nili.... Wakati nilichukua tu hiyo vocha na CHW wangu akaenda akaniletea tu, the same same day. [The day I got the voucher my CHW went and brought for me that same day.]

Ndalu CHW R7

Kuna wale ambao wakichukua tu hivi kwa sababu vine multiplier ako njiani kuelekea nyumbani, kuna wenye wataweza pitia hapo wachukue ndio waelekee nyumbani. Lakini akiona pengine hana namna kwa sababu ni mja mzito ama ako na mtoto, itambidi aende nyumbani ajiipange halafu akuje sasa kwa vine multiplier. [There are those immediately they take the voucher they just go and pick since the multiplier is located along their way home. If she finds that she cannot, maybe she is pregnant or she has a baby, she will get home first then plan to come to the multiplier.]

Naitiri Woman R6

Wakati nilipewa voucher nilienda na CHW ndio akatuonyesha lakini sasa nikarudi tu huko baadaye nikatuma mtu wa pikipiki kwenda kunichukulia. [When i was given the voucher, I went with the CHW but later I sent some motorcycle rider to pick for me.]

⁵ Prevailing exchange rate as of 05-Apr-13 used, US\$1 = KES86.43

Women who picked the vines later picked them themselves or sent their husband, relative or *boda boda* operator to pick the vines on their behalf. Vine multipliers reported that vine pick up was severely delayed during dry periods such as the period towards the end of 2011. CHWs and women also reported that delays were also a result of land allocation by either their partners or mothers-in-law more so during the maize planting season. Some women had to go as far as leasing land from friends or relatives to plant the OFSP as their partners would not allocate space. It was evident that maize (and



sugarcane) took precedence over all other crops. For newly married women, who would traditionally live with their mother-in-law for some time, it was even more difficult having just recently moved to a new home. Some beneficiaries also intimated that the validity period of the vouchers was too short when faced with challenges such as lack of land or the dry season. Other women intimated that the vine multipliers were too far which had a cost implication; more so if they had to hire a *boda boda*.

Ndalu Woman R9

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Some CHWs thought that they would be more suited to issue vouchers as this was happening anyway in facilities such as Sinoko where self-appointed CHWs supported the ANC nurses.

Sinoko CHW R1

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Coordination

Coordination between implementing agents and stakeholders was observed as a factor determining success of the project. Monthly feedback meetings were observed as a success driver that the agents appreciated as they allowed discussion of progress and highlighting of key challenges that were being encountered during project implementation.

CHEW 022

Every month we do have a monthly feedback meeting. That is where maybe we assess our achievements and set our targets at every month end.

DPHN 028

I feel that (there) is teamwork and we are sharing our challenges.

Integration of Health and Agriculture Sectors

The Mama SASHA project model heavily relies on integration of health (Nurses and CHWs) and agricultural (AEOs, DMP Farmers, VMs) sectors, an aspect that implementing agents highlighted was unique to the project. Both sides were pleased with the integration and indicated that the feedback meetings were instrumental in cementing relations.

Mihuu CHW R8

Alafu kuongezea Mama SASHA tumefurahia kwa sababu wametuhusisha karibu na idara ya kilimo serikalini unakuta kwamba kama kuna field issues mahali maafisa wa serikali wa kilimo wakiwa mahali wametutambua mahali wako an mkutano wanatutambua wakati tunaingia wanatupa nafasi pia tuna address alafu tunachulikana kila mahali kwa hivyo wametuletea uhusiano mzuri. [In addition to that we are happy because Mama SASHA has linked us with the ministry of agriculture in the government, you find that during field days where we have the ministry of agriculture officials they recognize us when we are present and give us a chance to address the people. Then we get recognized everywhere, so it has brought good relations.]

APHIA+ Staff 041

...we have realised you know you cannot intervene in health alone with health interventions; you need other determinants. Determining line ministries (need) to contribute.

Mama SASHA – APHIA Plus Integration

APHIA+ interviewees were asked to express their views on whether Mama SASHA activities are well integrated into APHIA+ and if not, what the best case scenario would be. Some staff lauded the linkage with the OVC programme of APHIA+ where caregivers are given vines by VMs from the project.

APHIA+ Staff 040

Um kind of to some extent I can rate it (integration) to as 70-80%...The best case scenario is how they (currently) integrate with the SDH team especially for them to give the OVC caregivers the vines. For them to be planting and for the kitchen gardens and still they are integrating very well with them.

APHIA+ Staff 041

I feel very strongly that it is integrated because, one we can even in our work-plan we can identify those activities which are addressing Mama Sasha and we have now clearly stipulated the source of funding because it is basically nutrition a source of funding for that. But other than integration for the funding and integration even for the other component strategies are being, have also integrated some of the Mama SASHA activities. For example, our social determinants components they are doing a lot with the food production and the food security and diversification of food types and Mama SASHA has actually offered in areas where we know the project is not covering well.

Others felt that integration could work better. APHIA+ and Mama SASHA workplans were not integrated. Areas such as formation of community units and training of CHWs by APHIA+ were explicitly highlighted as lacking integration and consideration for Mama SASHA activities. Development of workplans was done separately and with no linkages. In spite of joint weekly meetings, integration was still lacking in key areas where there appeared to be duplication of efforts.

Linking of the APHIA+ and the Mama SASHA M&E systems was listed as another gap, databases for the two systems were not synergised in any way. This was indicated as something that would be especially useful for the Mama SASHA control sites where very comprehensive data are collected by APHIA+; in the current situation, both projects collect data independently.

Capacity and Resources Needed by Implementing Agents

Although there was variability in implementing agents' time depending on the participating community and health facility, [Table 7](#) presents an average number of days and time spent on activities related to Mama SASHA activities for key implementing agents.

Table 7: Capacity and Resources Needed as Expressed by Implementing Agents

Group	Capacity and Resources Required	
	Quantity	Details
CHWs	10	<ul style="list-style-type: none"> Working days per month for home visits to mobilise and provide support to (potential) beneficiaries with at least 2 beneficiaries visited per day
	1	<ul style="list-style-type: none"> Working day per month for filling in monitoring forms
	1	<ul style="list-style-type: none"> Working day per month for feedback meetings
	x/- (US\$x)	<ul style="list-style-type: none"> Lunch and transport allowance per month; CHWs suggested the amount should be increased beyond the 1,000/- (US\$11.57) they currently receive
	-	<ul style="list-style-type: none"> IEC materials
	-	<ul style="list-style-type: none"> Sufficient copies of monitoring forms
	-	<ul style="list-style-type: none"> Regular stationery supply – notebooks and pens
ANC Nurses	At least 45 min	<ul style="list-style-type: none"> Time range required for providing ANC , including nutrition counselling, fo the first visit
	15min	<ul style="list-style-type: none"> Time range required for providing ANC , including nutrition counselling, per woman during subsequent visits
	20 to 25min	<ul style="list-style-type: none"> Time range required for group nutritional counselling, daily
	3 to 4 days	<ul style="list-style-type: none"> Time range required for all Mama SASHA activities per month
	2	<ul style="list-style-type: none"> Minimum number of trained ANC nurses per health facility
	1	<ul style="list-style-type: none"> Working day per month for feedback meetings
Government AEOs	5	<ul style="list-style-type: none"> Working days per month to provide extension services to vine multipliers
	30min to 1hr	<ul style="list-style-type: none"> Time range required for providing extension counsel per vine multiplier
	x ⁶	<ul style="list-style-type: none"> Working days per month to provide extension services to beneficiaries
	45min to 1hr	<ul style="list-style-type: none"> Time range required for providing extension counsel per beneficiary
	1	<ul style="list-style-type: none"> Working day per month for feedback meetings
	x ⁷	<ul style="list-style-type: none"> Working days per month for (refresher) training
	3,000/- (US\$35.00)	<ul style="list-style-type: none"> Lunch and transport allowance per month
N/A	<ul style="list-style-type: none"> IEC Materials 	
VMs	15min	<ul style="list-style-type: none"> Time range required to provide agronomy counsel per mother
	N/A	<ul style="list-style-type: none"> Farming and inputs: Water pump, jembes (hoes), gumboots, barbed wire for fencing off cattle, vines, fertilizer and a water can at the beginning of the project
	15	<ul style="list-style-type: none"> Working days per month for vine cultivation/tending
	2	<ul style="list-style-type: none"> Working days per week for vine distribution
	24	<ul style="list-style-type: none"> Working days for land preparation assuming 1 labourer for 15 beds
	250/- (US\$2.90)	<ul style="list-style-type: none"> Labour fees allocation during land preparation per person per day assuming no ox is used
	20	<ul style="list-style-type: none"> Working days for planting assuming 1 labourer for 15 beds
	250/- (US\$2.90)	<ul style="list-style-type: none"> Labour fees allocation during planting per person per day assuming no ox is used
CHEWs	1	<ul style="list-style-type: none"> Working day per month to support each PWC meeting
	5	<ul style="list-style-type: none"> Working days to provide support to CHWs
	x/- ⁸ (US\$x)	<ul style="list-style-type: none"> Lunch and transport allowance per month
	N/A	<ul style="list-style-type: none"> IEC Materials

⁶ The quantity will depend on the number of beneficiaries allocated to each extension officer

⁷ The quantity will depend on the number of training days allocated per year

⁸ This would depend on the number of PWCs being supervised by the CHEW.

Even though CHWs were strictly speaking volunteers, such that the KES1,000 allowance paid out to them was for participating in feedback meetings, they considered it their ‘monthly allowance’ and expressed the need for it to be increased in view of the number of days they spent in a month supporting the project.

Naitiri CHW R7

Anacheka kwanza) (she laughs first) Vile mwenzangu amesema tunafanya na yeye pamoja kwa voucher issuing. Sasa kitu naoanalea mungetusaidia upande wa ...pengine muongee na facility iwe iki provide lunch na pengine transport, sababu wakati kama huu mvua inanyesha sana na tunatoka mbali sio karibu. Unanyeshewa mpaka nyumbani hata atleast mkitusaidia pale kazi kitakuwa nzuri zaidi kuliko vile iko. Kwa sababu kujitolea tu kila siku from Monday to Friday mimi kama mumama afadhali yeye kama mubaba (anacheka) (laughs). Umeacha kila kitu kinakuangalia nyumbani unakuja, si unajua unafikiria mzee anafikiria tu pengine vile mama ametoka atleast atakujako na mboga na unafika tu hivo. [The way my colleague has said whom I work together in voucher issuing I will propose that you help us on the side may be you talk to the health facility to be provide lunch and may be transport. Because now it is raining and we come from far not here. So you are rained on up to home so if you help us there may be the work will be more better because just sacrificing from Monday to Friday I as a mother may be better him as a father. You come back everything is looking at you may be my husband will think since I have gone out I will come home with vegetables but you just arrive like that.]

Most mothers had not been visited by a government extension officer. Speaking to extension officers, they indicated that the number of days allocated, five per month, were not sufficient to visit both vine multipliers and beneficiaries.

Govt. Extension Officer 014

Yeah we.... because there is some allowance some small allowance we can go private or we can buy our fuel and then go to.... because the nini they don't have their own means we use our own.



Even though vine multipliers had allocated two days a week for women to pick vines, the reality was that women picked them at their convenience and inevitably every day was a distribution day.

DVM 004

Lakini ni experience ingine yenye naona,wale wamama walikuwa wamepatiwa siku mbili Tuesday na Thursday lakini hao wamechukua siku zote. Na ninaona heri kuwapa sababu nisipo wapa sitapata hela. [But im having a different experience, those women had been

given Tuesday and Thursday but they take all days so i would rather give them the vines because if I don't I will not get money.]

Concerns and Challenges Affecting Project Implementation

The following concerns and challenges were highlighted by beneficiaries and implementing agents.

Table 8: Beneficiary and Implementing Agents' Concerns, Challenges and Suggestions for Project Improvement

Category	Concerns and Challenges	Suggestions for Project Improvement
Pregnant or Lactating Mothers	<ul style="list-style-type: none"> Poor weather during some months of the year restricts planting Delays in planting due to lack of partner support to provide land allocation on time Carrying and planting vines when heavily pregnant (Lack of) Land allocation by spouses or mothers-in-law 	<ul style="list-style-type: none"> IEC materials to supplement nutritional information provided at HFs and by CHWs Increase the number of VMs Male partner sensitisation to enhance involvement Home visits by extension workers
Partners of Pregnant or Lactating Mothers	<ul style="list-style-type: none"> Lack of (sufficient) awareness on the project 	<ul style="list-style-type: none"> Male partner involvement throughout the project Expand the target group for vine provision to include other members of the community
CHWs	<ul style="list-style-type: none"> Lack of (Mama SASHA) identity e.g. t-shirts Lack of remuneration (incentive) that sufficiently covers their time and expenses such as transport Lack of IEC materials to give mothers Low capacity in some areas of maternal health Low capacity in OFSP agronomy Point of medical reference for communities especially where HFs are far Some beneficiaries' partners are anxious when land is measured (for project records) during follow-ups Community perception that monitoring information collected is for remuneration 	<ul style="list-style-type: none"> IEC material to support health education Badges and t-shirts for all CHWs Some form of remuneration as incentive Regular and refresher trainings Facilitate fully functioning maternity wings in health facilities Male partner involvement throughout the project Some CHWs want to benefit from the vines to demonstrate to potential beneficiaries
ANC Nurses	<ul style="list-style-type: none"> Poor voucher uptake during the dry season Responsibility does not match HF human resource capacity Number of trained nurses is low given attrition levels Increased ANC attendance but not increased health facility based deliveries Mothers from outside the catchment areas attending ANC sites want to benefit from vouchers Mothers who pick vouchers but do not or delay picking vines Mothers who pick vines once and do not turn up again Lack of remuneration (incentive) 	<ul style="list-style-type: none"> The project should provide incentive for mothers to deliver in the health facility Some form of remuneration as incentive for nurses, CHEWs and CHWs Train more nurses
CHEWs	<ul style="list-style-type: none"> Mothers outside the catchment area of the project accessing vouchers/vines 	<ul style="list-style-type: none"> Expand scope of project to other facilities

Category	Concerns and Challenges	Suggestions for Project Improvement
Government AEOs	<ul style="list-style-type: none"> • Transport and lunch allowances provided by NGOs are insufficient • Difficulty making appointments with beneficiaries • Lack of transport means responsibility (for follow up of beneficiaries) does not match capacity (overworked) • Timely information from VMs on beneficiaries • Farmers prioritise maize and sugarcane husbandry over OFSP 	<ul style="list-style-type: none"> • Provide and/or increase transport and lunch allowances • Male partner involvement throughout the project • Increase AEOs supporting the SASHA project • Encourage broadening of vine provision to other members of the community • Objective criteria in selection of VMs
NGO AEOs	<ul style="list-style-type: none"> • Poor redemption of vouchers during the dry season • Long distances covered by beneficiaries to VMs • Oversupply of vines • Pest control (moles and porcupines) • OFSP infestation by the sweetpotato virus 	<ul style="list-style-type: none"> • Wider project sensitisation to encourage vine uptake • Increase number of vine multipliers
VMs	<ul style="list-style-type: none"> • Poor vine uptake at the beginning of the project and during the dry season • Dry weather necessitates pumping of water • Pest control (moles and porcupines) • Mothers who do not qualify (have no vouchers) requesting vines directly 	<ul style="list-style-type: none"> • Increase remuneration per voucher • Expand the target group for vine provision to other members of the community • Extend the length of the project • Have staff at HFs to specifically support writing vouchers

Sustainability

Sustainability implies endurance; a project is sustainable when it continues to deliver benefits to the project beneficiaries for an extended period after the implementer's financial assistance has been terminated [14]. Sustainability is defined on the basis of two elements, diversity and intensity of activities and outputs maintained or developed after the end of the funding and intensity and enlargement of the cooperation or network of stakeholders[14]. Hence, sustainability means maintaining the project outcomes, goals and products and institutionalising the project processes and *not* maintaining project staff positions or maintaining all activities or depending on grant funding.

With this understanding in mind, questions were asked regarding long-term acceptability of the Mama SASHA project including value added by project activities, factors affecting sustainability and continuity of activities.

Value Addition

The issue of value addition explored what new activities have been made possible with the Mama SASHA project support that would not have been possible by the health system alone i.e. through the government or the APHIA Plus programme. Provision of vouchers for OFSP as an incentive for ANC attendance and linkages between the agriculture and health sectors were listed as the key activities the Ministry of Health would not have solely managed to do. This also encompassed formation of PWCs supported by CHWs. Additionally, those interviewed felt that the way the Mama SASHA project collects data, e.g. how many mothers are in the PWCs, how attend meetings, how

many have delivered and how many of these deliveries were skilled, and makes active decisions that are evidence-based, is a gap in the health system as well as with other partners.



Continuity of Activities

Respondents were asked to describe which activities introduced by Mama SASHA can continue after the project is over and how this might be accomplished in the future. Ownership by the Ministries of Health was listed as a key component. This was supported by the fact that the Mama SASHA project had closely worked with the Ministry and they were intimate with the project activities and output. Their integrating Mama SASHA activities into their day to day activities was seen as an ideal situation wherein CHWs would continue with the formation and coordination of PWCs. It was also suggested that formation of a cooperative by vine multipliers to commercialise OFSP production would

enhance sustainability and general community acceptance of the project and OFSPs.

ITVN ANC Nurse 033

These mothers would have been used to these OFSPs and now if you cut them they will come here asking what next? Wametuletea nini ingine. (What else have they brought)? You know when somebody get used to something free, there must be something else taking over from that.

NAEO 005

Okay what can i say?.....okay what I was thinking is we are left with almost is it one and a half years or one so I was thinking of maybe these vine multipliers that we already have on board, we can talk to them so that they form clustered groups around that region so that these groups can be able surrender land... To surrender land give part of their land that is en mass then we venture into root production because usually when I look at those vines too many of them in the field I always wonder now why can't we venture into root production?

Furthermore, it was envisioned that the APHIA+ programme would in any case be able to absorb Mama SASHA under its nutrition component.

APHIA+ Staff 042

People have always asked how is agriculture related to health and nutrition. And when I look at APHIA a big chunk of their budget is within.... actually they have a lot of activities under nutrition so they should be able to pick up this small baby and move along with it.

Selling of the project to potential partners was also viewed as a strategy for enhancing sustainability.

APHIA+ Staff 043

Yaa, now you need to start selling it (Mama SAHSA) out you know, at least at the county level, by the time the county is settling, they know that that is one program that they need to...useful, it's definitely useful...so that they can also start to look for other sources of resources, that could come in there. You can think like UNICEF, are very keen in in terms of things to do with nutrition in terms of health, in terms of nutrition. They (can) definitely be part of the people to bring on board if need be, at that stage when we are scaling out...scaling up.



Chiefs, vine multipliers and extension agents intimated suggestions for commercial vine production as an avenue for sustainability. The primary suggestion was project support in initiating the commercialisation process, more so in helping identify a market base for the OFSP.

Chief 013

I think farmers to accept. They accept and own the project as theirs as if it was not brought to them that at the end of them of it they are the ones gaining the benefit. Then we get more demo plots for the production. Then we also open it to be free for all, not one section. Like my location of 25,000 people I have only one, or two vine multipliers and yet other sub areas have not heard of this because we were dealing with specific villages for production. Now that it is reaching its peak, we would to have every farmer get the potatoes, vines to plant.

DVM 004

Mwanzo nilikuwa nizalishe tu mbegu lakini nikaona sasa huwezi kuwa tu unazalisha mbegu na huna viazi atleast nimeanza kutenga sehemu ya shamb nizalishe viazi. Kile ninacho omba tu ni ile linkage kama shirika munaweza kutulink to other areas ambapo tunaweza kuzalisha mbegu na tupeleka. Tunaweza kuzalisha nao the roots viazi yenyewe na tupeleke, kisha siku maneno ya machine ya kutengeneza inaitwa chips. [In the beginning, I was just to multiply the vines but I saw that I can not just multiply the vines a one so I have started to set up a portion to multiply the potatoes. What I can only ask is just that linkage, if the organization can link us to other areas where we can take the potatoes. We can multiply the potatoes then we take them to make chips.]

This was further supported by the fact that there already has been distribution of OFSP, by the Mama SASHA VMs, directly to interested buyers in the community and through ARDAP and CREADIS to other NGOs and projects.

Sinoko CHW R8

Kwa multipliers wanaenda wananunua kwa... vines wanapewa. [They go and buy from the vine multipliers... and they are sold to.]

Factors Affecting Sustainability

The number of implementing agents trained and especially ANC nurses, scaling up of the Mama SASHA project male partner involvement and coordination with implementing agents and key stakeholders were listed as key factors affecting sustainability. There were concerns that the number of nurses trained was few relative to the number of nurses serving a facility – all nurses rotate in the ANC clinic – and attrition levels.



CHEW 034

Because a trained personnel may be transferred from Mihuu to Bukuyi that gap is left vacant and the remaining person there says I am not trained so the work there may not be so smooth.

APHIA+ Staff 044

Commercialisation or apart from potatoes, what else, where can they get other money to be able to buy other food products. So beside potato, can something else come? Vegetables we need to talk about...for me I thought we are talking about kitchen gardens together with that potato would be a viable idea so that we don't eat potato alone.

ITVN ANC Nurse 033

And also as up to now i am seeing some improvement that the health facilities are few like in Mihuu we only have got Mihuu, Mulachi is no longer in operation, Lukusi is the other end it is not covered so mothers from those sides tend to think Mihuu is very far for them then they just refuse to come.

In some quarters, it was felt that expanding the scope of the project would be imperative to its sustainability.

CHF 013

Sustainability. I will be critical a bit about Mama SASHA, critical in a way we change the name from Mama, let's get a unified name. It is now started. It has just taken off. We have no fear of it collapsing but well it is good for identity to be called Mama SASHA but actually the whole concept in it is health for the people including the wazees.

The issue of (lack of) male involvement also arose, with respondents expressing that the project had overfocussed on women, and excluded men.

Sinoko CHW R3

Na baba wahusike pamoja. Ningependa tu tujue jinsi yenye tunaweza keleta akina baba nao pia wao wahusike saidi na... mama. Tukipata hizo mbinu tutaweza kuunganisha hawa mpaka wababa pia wahusike mama akiwa mja mzito, naye pia aone kama yee ako mja

mzito! [And the father to be involved. I would just like to know the better way through which we can involve the men in women issues. If we get these strategies, we can bring the mother and the father together so that the father also gets involved when the mother is pregnant.]

DNO 016

What could affect mostly is the issue of involvement of the men; involvement is a bit minimal is very minimal. And you know men are decision makers when it comes to land use they are the decision makers so we have sensitized a few who cannot they are very few who cannot create an impact. So that one first of all is men involvement I am seeing it as a factor. Then I am seeing a situation where by if we were not going to have more nurses being employed then it may be difficult for them to continue worth the program. They might be transferred and there is no replacement. That is what we are going to be I see it as a problem and it will affect us negatively. At the same time the CHWs who are going to assist us normally we have been having on monthly basis they are given something when they bring reports. I am seeing a situation whereby if we are the Mama SASHA project will stop during that time that we might miss some funding for some activities then it might be very difficult for them to work so that they educate mothers and refer them.

Moreover, it was expressed the allowances provided by Mama SASHA to implementing agents, including during monthly feedback meetings, could not be sustained were the project to be taken over by the government; the allowances had created dependency on the project.

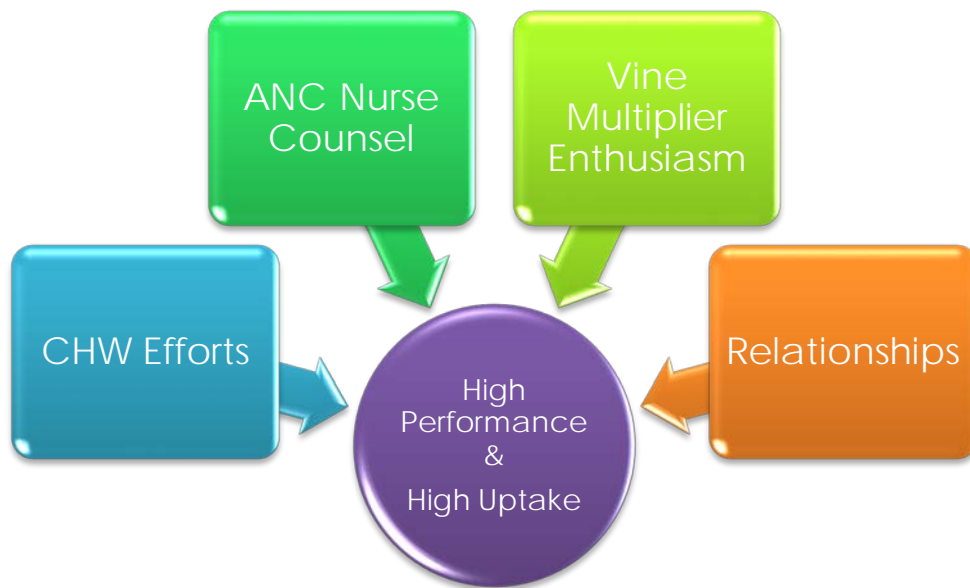


Impact of Acceptability and Feasibility on Project Performance

This study sought to determine how the factors of acceptability and feasibility affected uptake among low performing and high performing facilities and communities. From a qualitative assessment perspective, all four intervention sites, did at the beginning of the project have teething problems. As would be expected, community sensitisation and mobilisation for project buy-in was initially met with suspicion. This, however, changed with time and from discussions with implementing agents and project staff, each site eventually took off at varying speeds nonetheless.

Even though the performance of the four sites is not possible to rank, four factors that contributed to high performance and high uptake, as observed by the PI, illustrated by the respondents and also reflected in aspects of respondent mobilisation included the efforts of CHWs, counsel provided by the ANC nurse, vine multiplier enthusiasm and relationships all around as illustrated in [Figure 13](#). It was not apparent that the size of the facility and/or catchment population played a role in impacting performance.

Figure 13: Factors of Acceptability and Feasibility Affecting Uptake and Performance



These factors can be explained as follows:

1. The **efforts of CHWs** to identify and mobilise beneficiaries was the indispensable ingredient to project success. In all sites, implementing agents lauded the CHWs' efforts. Most beneficiaries attributed their decision to visit the health facility to receive ANC, pick the vouchers as well as pick and plant the vines to their efforts and support. Many CHWs went beyond their call of duty to follow up the mothers to ensure that they followed through with the requirements of the project.

2. **Counsel provided by the ANC nurse** played a big role in encouraging women to attend subsequent ANC visits as well as acknowledge the value of OFSP cultivation. That OFSP was encouraged by a health care worker, helped validate the voucher programme. Commitment of the ANC nurse(s) at the health facility more so their motivation to sell the OFSP concept to potential beneficiaries was reflected in discussions with mothers.
3. The **enthusiasm of vine multipliers** was also key. It was evident that support from either CREADIS or ARDAP played a big role in their performance.
4. **Relationships** could not be underestimated. The relationship between Mama SASHA project staff and the implementing agents influenced how the latter performed. Where an overly positive relationship existed, implementing agents were evidently more motivated. Similarly, the relationship between the ANC nurse and CHEW with the CHWs was essential to their influencing (potential) beneficiaries.

From a quantitative assessment perspective, for all eight sites, data were collected on ANC attendance a year prior to the intervention (from March 2010 to February 2011) and following the intervention (from March 2011 to April 2012). These trend data are available in [Appendix 6](#). Based on this data, the impact of the Mama SASHA project on a key performance outcome, ANC attendance, was estimated by computing a double difference, one over time (before and after the intervention) and one across subjects (between intervention and control groups). Impact explained through double differencing takes into account the change observed over time in the intervention group as well as the change observed over time in the control group. This approach adjusts for the “natural dynamics” that might bring change over time even in the absence of an intervention.

A positive difference-in-difference (DiD) implies the desired change, that there was more change (increase) in the intervention group as compared to the control group while a negative change implies the opposite, more change in the control group. The direction of change is given by the change observed within the group. For example, looking at [Table 9](#), and taking the first indicator, the number of first ANC visits, there was a 46.4% increase of visits in intervention sites while in the control sites, there was an increase of 27.7%. The DiD is 18.7% representing the positive impact of the intervention implying an increase in the relative percentage of 18.7% in the intervention group as compared to the control group. Similarly, women visiting the ANC clinic in their first trimester increased by 125.5% in the intervention sites and by 1.5% in control sites representing an overwhelming 124.0% positive impact.

The next step was to determine whether the DiD assessing the impact was significant, we fit Poisson regression with interaction term. The interaction term compares the difference between the intervention and control groups by two time periods (before and after the intervention).

Table 9: Impact of the Mama SASHA Intervention on ANC Attendance

	Intervention		% relative change in Intervention	Control		% relative change in Control	DiD
	Before	After		Before	After		
1 st ANC Visits	3,637	5,326	46.4	1,456	1,860	27.7	18.7
2 nd ANC Visits	2,406	3,531	46.8	1,044	1,307	25.2	21.6
3 rd ANC Visits	1,690	2,177	28.8	699	808	15.6	13.2
4 th ANC Visits	1,034	1,422	37.5	555	766	38.0	-0.5
Total_ANC	8,766	12,446	42.0	3,449	4,726	37.0	5.0
1 st Trimester Visits	1,048	2,363	125.5	132	134	1.5	124.0
2 nd Trimester Visits	2,359	3,686	56.3	574	1,325	130.8	-74.6
3 rd Trimester Visits	2,565	3,134	22.2	713	2,640	270.3	248.1
Total_Trim	5,773	9,193	59.2	1,320	4,102	210.8	151.5

The significance of the interaction term shows that the impact observed is statistically significant. These results are presented in [Appendix 8](#). The first column ‘Intervention vs. Control’ compares the overall difference between the two groups *for the two time periods combined* while the second column, ‘After vs. Before’ compares the overall difference between before and after intervention *for all locations combined*. The third column, ‘Impact’ represents the impact of the intervention given by the interaction between groups and time. Therefore, using the results in both [Table 9](#) and [Table 10](#), for example, first ANC visits increased by about 25% in the intervention group as compared to the change in the control group; this change was statistically significant.

Table 10: Significance of Mama SASHA’s Impact on ANC Attendance

	Intervention vs. Control	p-value	After vs. Before	p-value	Impact	p-value
1 st ANC Visits	2.29	0.000	1.10	0.000	1.25	0.000
2 nd ANC Visits	2.11	0.000	1.10	0.000	1.28	0.000
3 rd ANC Visits	2.22	0.000	0.97	0.288	1.22	0.001
4 th ANC Visits	1.71	0.000	1.03	0.449	1.09	0.227
Total ANC Visits	2.33	0.000	1.06	0.000	1.13	0.000
1 st Trimester Visits	7.28	0.000	1.69	0.000	2.42	0.000
2 nd Trimester Visits	3.77	0.000	1.17	0.000	0.74	0.000
3 rd Trimester Visits	3.30	0.000	0.92	0.001	0.36	0.000
Total Trimester Visits	4.01	0.000	1.19	0.000	0.56	0.000

On the other hand, change over time for third and fourth ANC visits was not significant; additionally, the intervention did not impact the 4th ANC visit. Discussions with mothers and health care workers

revealed that the typical practice was for a mother to determine her unborn child was 'fine' with two or so ANC visits and then resort to a TBA for subsequent visits. For ANC attendance based on trimester, it is evident that the Mama SASHA project's biggest impact (2.42) was on 1st trimester visits, and lowest (0.36) for 3rd trimester visits.



The turnout of mothers is high so we were able to get to as many mothers as possible so the mothers were coming for our services maybe the only let down is that the deliveries were still low and we were hoping that maybe with the introduction of the MamaSASHA project it would continue up to delivery but at least the turn out of the antenatal mothers was high.

DPHN 017

DISCUSSION

There have been marked improvements in project strategy during the second wave compared to the pilot. Processes are a lot more systematised and this has been reflected in the project outputs. There is some male involvement, training curricula have been strengthened and services are largely standardised. It is evident that some lessons learnt from the pilot have been integrated. Implementing agents have attested to enjoy working on the project and are motivated by the project outputs such as enhanced ANC attendance and OFSP consumption being integrated in households. There have also been other benefits attributed to the project; through it, HIV counselling and testing (HCT) have increased as a function of ANC attendance. There has also been a snowballing effect amongst beneficiaries that has continued to attract more women to the project.

A gap was observed in knowledge on the project amongst beneficiaries' partners when compared to that of women. Generally, beneficiaries' partners felt left out of the project as activities primarily targeted women in spite of the fact that men determined land resource allocation. Training held in 2011 amongst male opinion leaders was a good effort but this involved only selected community members; it is clear that the training gained did not cascade to other community members.

Knowledge of the project by APHIA+ staff was surprisingly low, relative to expectations and the length of time that the project has been running. Reports of intervention components and sites were conflicting or wrong altogether highlighting the need for their being (re)oriented on the Mama SASHA project.

Perceived project benefits by beneficiaries could not be disputed. Enhanced maternal and child health coupled with food security stood out as the most recognised benefits. Mothers felt their children were less susceptible to disease, more so those that were eye or skin related, as a result of the OFSP. They also reported, that comparatively, children were more energetic. For beneficiaries' partners, their perceived benefits, albeit exaggerated, included enhanced virility, whether this was because this was the message they got during sensitisation or of their own recognition was not clear. It is likely that the former is more probable given partners took a longer time to warm up to the project so mobilisers might be excused for cherry-coating messages to enhance project acceptance.

Community involvement, good communication and adaptation of the project is a lesson that cannot be overlooked. Considering community perspectives on sweetpotatoes which are labelled as



women's or children's food and are on the bottom of the food chain in their valuation necessitates a paradigm shift in sensitisation strategies that would be useful in enhancing their value.

On the agronomy aspect, compared to other SP varieties, OFSP took a shorter time to mature, three compared to six months. Beneficiaries also observed that OFSP yields were relatively higher, this coupled with health benefits made these OFSP varieties winners.

ANC nurses, CHEWs and CHWs unanimously listed overall increased ANC attendance (and per capita) as the biggest project benefit. ANC meant putting mothers, their partners and essentially their children in contact with the health system. The data supports this (see details in [Appendix 6](#)), there was a marked (DiD) and significant increase in first (18.7%), second (21.6%) and third (13.2%) ANC visits in intervention sites relative to control sites, but none for the fourth (-0.5%). The data also highlighted that more women were attending ANC earlier in their pregnancy, most notably in their first trimester (124.0%).

Regrettably, higher ANC numbers did not translate to higher health facility deliveries. It is essential to point out here that skilled deliveries were not a performance indicator for the Mama SASHA project. Healthcare workers admitted that TBAs were by far the preferred option, they provided personalised service, a warmer and familiar delivery environment. Cost, or socio-economic profile of TBA clients, did not seem to be the issue as informal discussions revealed that, costs put together, TBAs were essentially more expensive than health facilities. Given the efforts the Mama SASHA project has put into enhancing ANC attendance, it seems very logical that even more effort, and perhaps voucher incentive, should be established to encourage health facility based deliveries.

Vine multipliers, enjoyed the recognition from the community as the go-to people for vines and counsel on OFSP. Nonetheless, their location was not favourable for many beneficiaries who thought they were not conveniently located. This contributed to mothers picking the vines ad hoc rather than on the allocated days which forced vine multipliers to distribute vines daily.

The PWCs were observed, all-round, as a big plus to the project. Mothers appreciated the monthly meets which occasionally included CHEWs; they felt closer to the health system, and were happy to seek clarification on their health, that of their children as well as OFSP agronomy. Regular presence of extension workers at these meetings, though necessary, was notably lacking. Even though men were welcome to these meetings, efforts to have them onboard were lacklustre and inconsistent. Given the emerging gender issues, these meetings would be a great opportunity for beneficiaries; partner buy-in and support as well as to counter the damaging misconceptions on the project.

The initial training provided to implementing agents was very useful. Amongst nurses however, there were gaps, only two nurses were trained per health facility with the anticipation that they would provide on-job training (OJT) to their colleagues. This has not quite translated as such hence in the absence of the trained nurses, some of whom have been transferred to other facilities, nutrition counselling is questionable and voucher distribution sometimes lacking.

CHWs generally felt that the training provided was not sufficient, there were questions from beneficiaries that they were not able to answer. They suggested that regular refresher training is held for them and that is also tailored to address the difficult issues raised.



Mama SASHA's strategy of cross-sectoral training wherein implementing agents from the agriculture and health sectors are trained together is not working as well as anticipated. Respondents, while commending the training, did not acknowledge any cross-sectoral learning. Emphasising the value of this amongst implementing agents would go a long way to enhance all-round knowledge on the project.


Even though provision IEC materials had improved compared to the pilot, a regular supply of these materials amongst nurses, CHWs and VMs was not present. Beneficiaries appreciated the materials where they received them, but the need to take some home was apparent and is inarguably useful. The complaint raised by CHWs regarding complex issues raised at PWC meetings that they could not respond to is a serious one. The issues they referred to are those that had not been covered in their training and for which no IEC materials were available. The Mama SASHA project needs to look into tailoring content based on the issues raised by CHWs which they indicated they had reported on in their feedback forms but had not received a response.

Another issue relating to CHWs is that of home visits. While it was envisioned that CHWs use home visits to mobilise women initially, the need for home visits throughout the project period has been required for continued and sustained enrolment of pregnant women and for establishing PWCs. It was expected that the Mama SASHA project would train existing CHWs from the APHIA+ project, and through their other roles and responsibilities, they would be able to reach out to this new target group of pregnant women. The need for continuous outreach and active recruitment of pregnant women through home visits and follow up visits was not really foreseen in the project design (see [Figure 1](#)) but turned out to be essential -adding to time burden of CHWs— about two weeks per month rather than the anticipated one week (or less) per month hosting PWC meetings, reporting and attending feedback meetings. These home visits must be acknowledged by the project and the necessary resources dispensed to support CHWs.

Integration of the Mama SASHA project into APHIA+ is not working as well as planned. Planning and data processes are not integrated even though the benefits of these were recognised by all parties. This has translated to duplication of efforts and overlap in some sites and activities including demand for the same resources (such as nurses, CHWs and DHMTs) at the same time.

The Mama SASHA project is adding great value to the health and agriculture sectors. Integration of the two sectors is a unique strategy that was acknowledged and supported by implementing agents. Nonetheless, continuity of activities is questionable given the intensity involved. A transition plan has also not been developed to envision how this would work or to outline roles and responsibilities.





*Huu mradi mimi nimeona ni mzuri
lakini watu wenyewe ndio
hawajauelewa. Ni mzuri kwa sababu
inaimprove health ya wamama waja
wazito na watoto wenye wako chini ya
miaka miwili. [The project is good, it's
only that the people have not
understood it. It's good because it
improves the health of the women and
the children.]*

DVM 003

RECOMMENDATIONS

The following recommendations should be considered so as to enhance performance of the Mama SASHA project. There are two categories, those that apply to on-going project implementation and those that relate to integrating sustainable actions.

Category I: Ongoing Project Implementation

Enhanced and Continuous Male Sensitisation and Involvement

1. There should be **increased engagement, sensitisation and involvement of male partners** in the project for their buy-in and support to their partners in land allocation and integration of OFSP consumption in the household.
2. Create **joint beneficiary forums** where male partners also feel part of the project.

Enhanced Integration of APHIA Plus and Mama SASHA Processes

1. Conduct a **re-orientation for key APHIA+ staff** on the Mama SASHA project.
2. Conduct **joint workplanning** for Mama SASHA and APHIA+ so as to identify synergies and areas of overlap.
3. Conduct joint **quarterly meetings that evaluate integration** of activities and overall progress.
4. An **integrated data management system** should be implemented to support project delivery for enhanced performance monitoring. The system would link monitoring data from the Mama SASHA and APHIA+ projects to provide current information on project progress.

Capacity Enhancement for Implementing Agents

1. Implement regular **refresher follow-on training** course for all implementing agents to reinforce standard practices and strengthened agronomic and nutrition and health messaging.
2. Support **on-job training of other ANC nurses** in intervention health facilities to enhance continuity of project activities.

Category II: Sustainable Actions

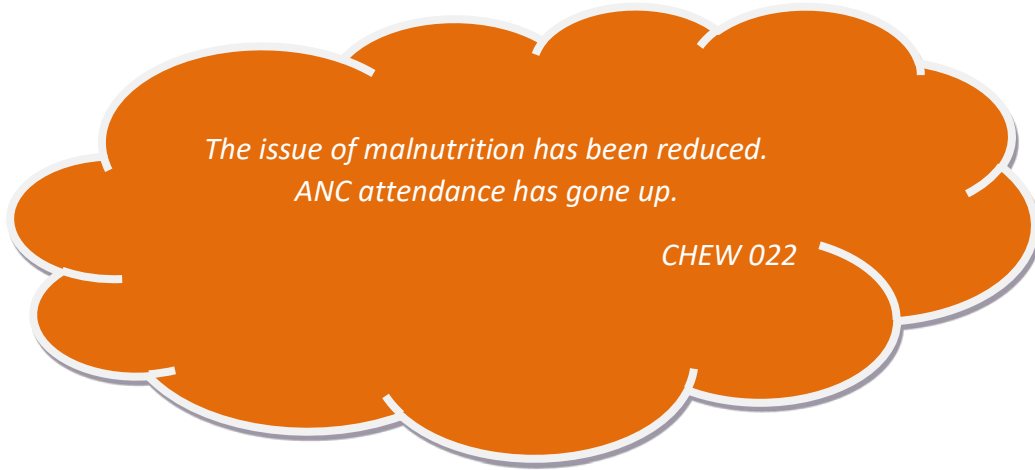
Integrate Sustainability Measures

1. Document **sustainability measures** including a handover plan that should be implemented in the absence of the project (funding). For VMs, setting the foundation and initiating the support processes for marketing and sale of vines to the broader community through a cooperative agreement should be considered. The handover plan should, after consultation, detail roles and responsibilities more so those that would require a financial obligation.

Ensure Reliable Supply of IEC Materials

1. Institutionalise measures that will ensure **continuous and regular supply of IEC materials** for implementing agents and beneficiaries. IEC materials for CHWs should be tailored to address issues raised during PWC meetings. Materials for beneficiaries should also be translated to the local language.





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APPENDICES

Appendix 1. **Final Tools**

Checklists

- [Archival Information Sheet](#) (pdf)
- [Data Management Steps](#) (pdf)
- [Focus Group Discussion \(FGD\) Checklist](#) (pdf)
- [Focus Group and Interview Debriefing Form](#) (pdf)
- [Focus Group and Interview Expanded Notes](#) (pdf)
- [Interview Checklist](#) (pdf)
- [Transcription Protocol](#) (pdf)

Consent Scripts

- [Control Site: Verbal Consent for Participation in Focus Group Discussion](#) (pdf)
- [Control Site: Verbal Consent for Participation in Key Informant Interviews](#) (pdf)
- [Intervention Site: Verbal Consent for Participation in Focus Group Discussion](#) (pdf)
- [Intervention Site: Verbal Consent for Participation in Key Informant Interviews](#) (pdf)

Final Guides

FGD Guides

- [Intervention: CHW FGD Guide](#) (pdf)
- [Control Sites: CHW FGD Guide](#) (pdf)
- [Intervention Site: Pregnant/Lactating Women FGD Guide](#) (pdf)
- [Control Site: Pregnant/Lactating Women FGD Guide](#) (pdf)
- [Intervention Site: Partners' FGD Guide](#) (pdf)
- [Control Site: Partners' FGD Guide](#) (pdf)

SSI Guides

- [Intervention Site: ANC Nurse SSI Guide](#) (pdf)
- [Control Site: ANC Nurse SSI Guide](#) (pdf)
- [Intervention Site: Vine Multipliers](#) (pdf)
- [Intervention Site: Agriculture Extension Agents](#) (pdf)
- [Intervention Site: CHEW SSI Guide](#) (pdf)
- [Intervention Site: Health Officials at District/Division Level](#) (pdf)
- [Intervention Site: Agriculture Officials at District/Division Level](#) (pdf)
- [Intervention Site: Chief SSI Guide](#) (pdf)
- [APHIA Plus Officials](#) (pdf)

Registration Pages

[FGD Registration](#) (pdf)

[ANC Nurse/CHEW SSI Registration](#) (pdf)

[Vine Multiplier/AEOs/District Officials SSI Registration](#) (pdf)

Sampling Design

[SASHA 2012 OR: Sampling Criteria](#) (pdf)

Supplemental Data

[Supplemental ANC Data](#) (pdf)

Appendix 2. [Field Report](#) (pdf)

Appendix 3. [Debriefing and Field Notes](#)

Appendix 4. [FGD and SSI Transcripts](#)

Appendix 5. [FGD and SSI Respondent Details](#) (pdf)

Appendix 6. [Brief on ANC Attendance and Trimester Data](#) (pdf)



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