



KENYA ACCELERATED VALUE CHAINS DEVELOPMENT PROGRAM

Second Year (2016/2017) Annual Report

October 2017

Grant Number USA 081

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ACRONYMS AND ABBREVIATIONS

AHADI	Agile and Harmonized Assistance for Devolved Institutions
AL2	Arid Lands
ANM	Agro-vent Network Model
AVCD	Accelerated Value Chain Development
BCC	Behavior Change Communication
CDR	Community Disease Reportrs
CIP	International Potato Centre
CHWs	Community Health Workers
CHEWs	Community Health Extension Workers
DTC	Drought tolerant crops Value Chain
DVC	Dairy Value Chain
ECF	East Coast Fever
ENV	Environment
FEAST	Feed Assessment Tool
FIPS	Farm Input Promotion Services
FTE	Full Time Equivalent
FTF	Feed the Future
GAIN	Global Alliance for Improved Nutrition
GOK	Government of Kenya
HI	Heifer International
HR	High Rainfall
ICRISAT	International Crops Research Institute for Semi-Arid Tropics
ILRI	International Livestock Research Institute
KALRO	Kenya Agricultural and Livestock Research Organization
KCB	Kenya Commercial Bank
KDB	Kenya Dairy Board
KLMC	Kenya Livestock Marketing Council
LMA _s	Livestock Marketing Association
LR _s	Long Rains
LSE	Livestock Systems and Environment
LVC	Livestock Value Chain
M&E	Monitoring and Evaluation
MIS	Market Information System
MOH	Ministry of Health
NHP _{plus}	National Nutrition Health Program Plus
NRT	Northern Rangelands Trust
ODK	Open Data Kit
OEG	Office of Economic Growth
PREG	Partners for resilience and economic growth
RCVC	Root Crops Value Chain
REGAL-AG	Resilience and Economic Growth in the Arid Lands – Accelerated Growth
REGAL-IR	Resilience and Economic Growth in the Arid Lands – Improved Resilience
SA	Semi-Arid
SCAO	Sub-County Agricultural Officers
SR _s	Short Rains
TOT	Training of Trainers
UoN	University of Nairobi
USAID	United States Agency for International Development
USG	United States Government
VC	Value Chain
VDBA	Village Dairy Business Advisor
WAO _s	Ward Agricultural Officers
ZOI	Zone of influence

1 EXECUTIVE SUMMARY

The Feed the Future - Accelerated Value Chain Development (AVCD) program is implemented by the International Livestock Research Institute (ILRI), International Potato Centre (CIP) and International Crops Research for Semi-Arid Tropics (ICRISAT) with ILRI as the lead Center. The program comprises the livestock value chain, the dairy value chain, and the staples value chains (root crops -potato and sweet potato, and drought tolerant crops - sorghum, millet, finger millet, groundnuts, green grams and pigeon peas). Activities of the program are spread over 103 sub-counties in 21 Counties in all Feed the Future Zones of influence (ZOI) in Kenya. This is the report is for the period of October 2016 to September 2017.

1.1 Qualitative Impacts

During the reporting period, the program recorded significant impacts in each value chain and in accelerating value chain development as envisaged in the theory of change. Generally, the program significantly influenced the way the County Governments do business at operational and policy level and in accelerating the development in each value chain. In the livestock value chain, enactment of Livestock Sale yards' bill into an Act of Isiolo County Assembly is a major milestone achieved towards setting up appropriate institutions and structures that are important enablers for enhanced governance of livestock markets. The Act will now legally entrench LMAs as important actors in the market governance. In the same value chain, the project facilitated business literacy trainings for selected county government officials as TOTs, who later trained youth and women entrepreneurs and groups, including cooperatives and other market-based enterprises, in Marsabit and Isiolo counties. As at the end of the fourth quarter the project had supported Frontier Counties Development Council (FCDC) in drafting a prototype Bill on Rangeland Management for the northern ASAL counties and the development of appropriate institutional frameworks for community institutions managing rangelands.

The project has so far linked a total of 11 groups and 63 individual women and youths to appropriate financial institutions including, Youth enterprise fund (YEF); Women enterprise fund (WEF) and County trade fund. The groups and individuals applied and received a total of KES 7.9 million as business loans from the various funds, to expand their businesses. In addition, the project produced maps of shared rangeland resources for northern Kenya (inter-county) and for Taraji Sub-County of Wajir, for use in county and inter-county spatial planning. Use of these maps will contribute to the protection of key rangeland resources such as drought grazing reserves, pastures and other critical range resources etc.

In collaboration with the counties, the project continued to strengthen the disease surveillance capacity of the counties' veterinary authorities through establishment of community-led disease surveillance structures and systems. The training of community disease reporters (CDRs) and producers, have significantly improved the livestock disease reporting channels, across the 5 counties.

During the reporting, period the project has continued to unlock potential for dairy farming in these pre-commercial dairy areas, building on the foundation of ground-breaking livestock improvement technologies introduced in Year 1. The dairy component intensified delivery of improved dairy technologies and advisory services to smallholder dairy farmers, provided business development support to dairy businesses to offer better services to farmers and reached households with nutrition education.

In farmer training and extension services the dairy component expanded the network of farmers served by community livestock extension volunteers by recruiting additional volunteers and training them on grassroots extension approaches. These volunteers have now been linked to county livestock extension personnel for necessary backstopping. The volunteers have also been provided with technical training on fodder establishment and basic animal husbandry and have been offering advisory services to farmers in their networks. They have also been at the forefront of technology dissemination and mobilizing farmers for other technical interventions such FTAI and ECF vaccination. This has led to increased number of households applying improve dairy technologies.

In breeding and animal health the project has begun to reap the benefits of the accelerated breeding program. The first set of calves conceived through FTAI were delivered giving opportunities for previously non-dairy household to enter the value chain via ownership of improved cattle breeds. Drawing on lessons from that first phase of the accelerated breeding program in year 1, the project team enhanced the delivery of FTAI technology via decentralized coordination in year 2. In keeping with our promise to bring gains of improved breeds to far flung areas with limited AI coverage, the project also distributed 35 Ayrshire bull calves in Busia, Siaya and Vihiga counties.

During the implementation period of year 2, the dairy component also initiated a scheme aimed at supporting interested farmers to acquire improved dairy cattle. The project rolled out a *kuku-to-cow* scheme that enables farmers to raise capital for purchase of dairy cattle. Through this initiative farmers are trained on basic poultry husbandry and supported

to acquire chicks that they can rear and later sell to raise funds for acquiring dairy cattle. So far 55 volunteer extension farmers have ordered and received chicks.

Additional to the breeding efforts, the project marked a milestone with respect to ensuring local availability of ECF vaccine in the HR1 counties. High prevalence of ECF in the region has been a major impediment to the nascent dairy industry – causing high losses to farmers and discouraging uptake of improved dairy cows. To ensure sustainable delivery of the vaccine, the project identified agents and linked them to one of the vaccine distributors. This has enhanced local availability of vaccine leading to an increased number of farmers reached with this important technology.

Fodder production, especially *Brachiaria* grass, is increasingly becoming popular among smallholder farmers in HR1 ZOI traditionally not known for forage production. Farmers who adopted improved forages during Y1 begun to experience the benefits of forage adoption with higher milk productivity, even during the periods of drought. Surplus production was stored in the form of hay, which was useful during the recent prolonged drought - December 2016 to March 2017. Several farmers have now been trained on fodder conservation and some groups have been provided with a lever-based box bailer, which they are using to make hay.

The project has also identified commercial fodder production as an avenue for incorporating the youth into the dairy value chain. In this regard the project supported 33 young farmers spread across Busia, Siaya and Homa Bay counties to rent 1 acre of land each for production of *Brachiaria* and *Napier grass*. Nine (9) of these young farmers are about to harvest their first crop of *Brachiaria* grass.

In business development, the project is supporting various businesses along the value chain to enable them offer better services to farmers. During the second year of implementation, the project facilitated improved business practices through development and implementation of business plans, farmer focused strategic plans covering the entire dairy supply chain, supplier loyalty systems and operational efficiency. Under this initiative, 3 dairy cooperatives in HR1 and six (6) in SA2 ZOI were supported to develop business and strategic plans as tools to enhance business performance.

Towards enhanced delivery of inputs and services, the project implemented innovations for better connecting rural smallholders with good quality dairy inputs and services based on the agent network model (ANM). During the implementation period of year 2, a total of 19 agents were recruited and these agents are currently covering 750 farmers. Additionally, the project supported three (3) dairy cooperatives in HR1: 2 in HR1 (Seke and Rongo hubs) and 1 in SA2 (Kikima Dairy) to establish their own agro-vet shops. Respective cooperative-owned agro-vets were supported to implement customer oriented retail and distribution strategies that can provide consistent and cost-effective services to dairy farmers. These strategies include ANMs and Buying Clubs (BCs).

In the drought tolerant crops value chain, the drought situation that was experienced during the reporting period served to confirm that these are truly food security crops. All farmers who were beneficiaries of the project did not experience any food shortage. They had enough to consume and at least 25% of beneficiaries had surplus grain for sale. The best performing crops during this drought period were sorghum, green grams and finger millet in HR1; and cowpea, green grams Gadam sorghum and pearl millet in SA2.

In the annual survey, it was confirmed that farmers are now readily adopting these crops not only for food security but also as a source of household revenue. More than 46,000 farmers are now growing improved high-quality seed of drought tolerant crops on 38,000 ha.

The second important impact of the drought tolerant crops value chain is building a strong network of stakeholders in accelerating value chain development. The 6 county governments of Kitui, Tharaka Nithi, Makueni, Elgeyo Marakwet, Siaya and Busia mobilized almost 100 ward agricultural officers, 16 Sub-county Agricultural officers, 16 Sub-county crop officers to offer extension services and distribute seed in 50 wards.

During the long rains, there was fall-army worm invasion on 60% of sorghum farms in Busia and Siaya Counties. The project in collaboration with county Governments, sensitized beneficiaries on control of the worms using ALBAZ insecticide in Busia and Halothrin in Siaya and the fall army worm invasion was brought under control with minimum damage to sorghum crops.

In business development, the project has not only initiated the transformation of subsistence agriculture in Siaya and Busia to commercial, but has also transformed the crop production systems during the short rains where, due to culture (Busia) and lack of suitable varieties (Siaya), farmers never planted sorghum and finger millet in the short rains. These crops have now become important for food and cash especially at the end of the short rains season; and this change of farming habits has enhanced food and income security in the months of January to June, when food insecurity has been at its peak in Siaya and Busia. The introduction of short maturing green grams in the farming systems especially in the SRs in Siaya

and Busia has not only improved the nutrition of mother and child during the famine months but has diversified household sources of income during that period.

In root crops the most important impact during the period was to transform progressive farmers to commercial seed potato multipliers who now regard seed multiplication as a business. During the year 2, 223 seed multipliers sold 189 tonnes of quality seed, sufficient to plant 95 ha, to 1,279 farmers, worth \$77,900 US. Seed multipliers generated \$177,600 US in total value of sales across Elgeyo-Marakwet, Nandi, and Uasin Gishu of the North Rift, and Meru. This is a tremendous achievement bearing in mind seed business did not exist prior to the AVCD project.

In the process of establishing the seed system, in addition to minitubers, the project has introduced rooted apical cuttings as starter material. Rapid progress has been made to formally integrate cuttings into regulatory seed certification protocols of KEPHIS. On-going private sector investment has resulted in distributing 168,000 cuttings produced by private sector partners Genetic Technologies International Limited (GTIL) and Stokman Young Plants (SYP; formerly Stokman Rozen Kenya).

In marketing and value addition the project supported the launching of Viazi Soko platform on 25th May, which provides seed and ware market information and links markets and farmers. To date, 44 farmers across potato value chain counties accessed the platform to enquire where to buy seed.

In addition to the activities of NPCK, the project is supporting the establishment of potato cooperative societies as the apex farmer institution for potato seed, extension, marketing and value addition. During the report period; three potato marketing cooperatives, viz: i) Nandi Potato Growers Farmers' Cooperative Society Limited; ii) Meru Tamu Potato Farmers' Cooperative Society Limited and; iii) Upendo Potato Farmers' Cooperative Society Limited, covering Abothuguchi west ward in Meru have received their certificates and have begun operation.

In OFSP the total target number of decentralized vine multipliers (DVMs) to be achieved by year 3 (40 DVMs) were already established by year 2 to allow sufficient time for vine multiplication within the life of the project. In collaboration with the county agriculture extension staff, technical support has been provided to the DVMs and acreage on OFSP has steadily increased tremendously.

1.2 Quantitative Impact

After two years of implementation, the program achieved six topline indicators beyond targets as shown in Table 1. The number of farmers and others who have applied improved technologies or management practices with USG assistance is an indication of the strength of CGIAR in upscaling of technologies. Achievement of the number of hectares of land under improved technologies or management practices seems to be low because the figures will be derived from the annual survey whose data analysis has not been concluded. For the number of individuals receiving nutrition-related professional training targets were exceeded during the reporting period, but only 32% for the life of project because the definition of the indicator was changed during implementation. The target will therefore have to be reviewed.

The main reason for achieving beyond the targets for most of the indicators is mainly due to the good cooperation by the partners (NGOs and National and County Governments). However, there was also under targeting at program design stage for some indicators such the number of for-profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices.

The indicator for (EG. 5.2-1) number of firms receiving USG-funded technical assistance for improving business performance was not achieved because the drought situation and the impact of the national elections.

The indicator on EG.3.2-18 number of hectares of land under improved technologies or management practices will also be achieved beyond target once the figures are captured in the annual survey.

Table 1. Overall Status of Topline Indicators

Indicator Name	Annual			Live of Project		
	Target	achieved	%	Targets	achieved	%
E.G. 3.1 Number of households benefitting directly from USG interventions under Feed the Future	150,905	159,724	99	256,937	200,570	78
EG.3.2-18 Number of hectares of land under improved technologies or management practices with USG assistance	59,110	16,446	28	223,021	24,327	11
EG.3.2-18 Number of hectares of land under improved technologies or management practices with USG assistance- Conservancies	290,000	600,814	207	858,695	634,814	74
EG.3.2-17 Number of farmers and others who have applied improved technologies or management practices with USG assistance	111,719	116,391	104	318,406	152,385	48
E.G.3.2-1 Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	46,672	71,551	153	119,859	106,688	89
EG.3.2-20 Number of profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices with USG assistance	250	430	172	855	612	72
EG. 5.2-1 Number of firms receiving USG-funded technical assistance for improving business performance	320	109	34	875	109	12
HL.9-4 Number of individuals receiving nutrition-related professional training through USG-supported programs	7,638	7,909	104	16,252	7,909	49
HL.9-2 Number of children under two (0-23 months) reached with community-level nutrition interventions through USG-supported programs	18,392	51,885	282	40,148	51,885	129

1.3 Nutrition, Gender and Youth

Nutrition:

In the second year, the AVCD nutrition interventions continued to be implemented in line with the AVCD nutrition strategy that was developed in year 1 in a consultative process led by key stakeholders, among them government ministries, USAID, UN agencies, NGOs, academia and research institutions. The strategy clearly defines the nutrition impact pathways i.e. a) production b) income and c) women's empowerment, that are the focus of the value chains. The nutrition activities are integrated and are leveraging the production activities such that nutrition beneficiaries are the households already engaging in production of the value chain commodities. To translate these pathways into improved nutrition for women and children, Nutrition Social Behaviour Change Communication (SBCC) has been integrated along the value chain activities. Formative assessments have been done to inform the SBCC approaches that will be applied in the third year in the various contexts of AVCD operation sites.

AVCD has been involved in nutrition coordination meetings at county and national level and has supported development of government policies, frameworks, guidelines among other key documents. Similarly, AVCD is one of the technical team members that has reviewed and revised the National Agri-nutrition Resource Manual that will guide Agri-nutrition implementation in the country. The revised manual has been used as a blue print to develop AVCD community level agri-nutrition training manual and dialogue cards that, in the third year, will be used to build capacities of community extension workers who will in turn reach households with agri-nutrition messages. The community agri-nutrition training materials (facilitator's manual and dialogue cards) are being piloted and will be validated in a workshop with stakeholders from all AVCD counties in the first quarter of year 3. After the validation, they will be used across all the value chains by the government community extension workers. In collaboration with the county and sub-county Ministries of Agriculture (home economics), Health (nutritionists and Public Health officers) and Education (ECD coordinators), Agri-nutrition TOT trainings have been conducted in the AVCD counties. These TOTs have then cascaded the trainings down to the community extension

workers, in this case the ward agricultural officers and the community health volunteers who are mandated to reach communities.

Gender:

Gender mainstreaming has been well factored across all value chains of the AVCD program in the reporting period. The value chain components organized a workshop for field staff from partner organizations and the county government with the aim of exposing frontline project staff to possible gender biases and equip them with approaches to enhance gender inclusion in project activities. Trained staff have subsequently applied gender inclusion approaches in their field activities like farmer trainings and now data on training show balanced numbers of men and women in attendance.

Each value chain has targeted women in specific gender friendly activities. For example, the dairy value chain identified women-led/dominated groups involved in production and informal sale of fodder and supported with forage interventions. The drought tolerant crops value chains women groups were assisted to acquire high quality seed and they were trained in GAPs, agri-business, improved postharvest handling and storage techniques as well as provided with multi-purpose threshers for finger millet and sorghum. These threshers have saved significant female energy expenditure (workload) and time which is expected to be directed towards care of themselves and children, including feeding and utilization of maternal and child health and nutrition services to improve their nutritional status.

Youth:

During this period a rapid assessment to identify challenges and opportunities for engaging the youth in the AVCD program was conducted. Some of the key challenges that emerged included lack of; knowledge on production, productive resources like land, access to finances and markets. The opportunities that were identified included i) provision of services like mechanized labour e.g. in threshing of drought tolerant crops, AI services and bailing hay ii) marketing of the value chain commodities e.g. potatoes, milk iii) value addition of the value chain commodities among others.

The potato value chain engaged with 6 youth groups with a total membership of 73 youth in potato business in Nandi, Elgeyo Marakwet and Uasin Gishu counties. Using the learning farm approach, 198 participants, majority of them youth, participated in four potato production trainings held across the North Rift counties. The youth were later mobilized and identified opportunities along the potato value chain: seed production, ware potato production, storage and marketing, and value addition through processing. Further, the project is securing contracts with three hotels in Eldoret to supply Unica variety for chips. Boma Inn, Poa Place and Sikirwa sampled Unica and are keen to have a regular supply. The youth groups received Unica seed to begin production and enter supply agreements with hotels. Additional hotels will be approached following the positive response from these initial hotels.

The dairy value chain supported 33 young farmers in Busia, Siaya and Homa Bay counties to rent 1 acre of land each for production of *Brachiaria* and *Napier grass*. Nine of these young farmers are about to harvest their first crop of *Brachiaria grass*. Assuming a production of 200 bales per harvest from one-acre plot and a local cost of \$2 per bale, the young farmers will be earning approximately \$400 from their commercial plots per harvest or \$1,600 per year. This has had multiple benefits including, creating self-employment for the young farmers, more planting materials' (splits) have become available to distribute to other farmers and more youths are getting inspired to invest in fodder business. For example, the original 9 youths have already encouraged 20 other young people to start planting fodder (giving splits to 12 new farmers). The project is targeting to directly support 60 young farmers to establish commercial fodder plots. Going forward, the young farmers will be provided with business development support. The 60 young farmers will in turn mobilize more young farmers to be trained in fodder business during year 3.

In year 2, the drought tolerant crops value chain has engaged the youth in GAP trainings and have also benefited from shellers and threshers. To be more strategic in engaging the youth in year 3, the drought tolerant crops value chain plans to assess youth needs and preferences along the value chain with the aim to train them and meet their needs including use of smart phone apps to solve drought tolerant crops VC problems. The youth will be engaged in the value chain through youth groups, 4 K clubs or Young farmers' clubs in secondary school. Also, food businesses owned by youth will be used to promote drought tolerant crops food products and youth groups empowered to acquire the threshers and sell threshing services to producers.

1.4 Opportunities and Constraints

Opportunities:

Over the last two years, several opportunities have arisen, in the different value chain components, due to both the work of the project and lessons learnt. In the dairy value chain, there are good opportunities for famers to pursue commercial

forage production as an economic venture. The project is considering co-investing with various groups interested in such ventures and will be supporting such initiatives via business development services and part financing of infrastructure for bulking produce. In breeding, there are opportunities for crowding in of suppliers of ECF vaccine that has been occasioned by introduction of the vaccine on these otherwise non-traditional dairy areas. With increased local availability of the vaccine and increased number of trained vaccinators accelerated breeding will be protected against the killer ECF diseases that is responsible for up to 80% of calf mortality.

Youth are being engaged to exploit the diverse opportunities along the potato value chain, such as production of rooted potato cuttings or early general seed from rooted cuttings that does not require large expanses of land; and production of processed potato products using locally made equipment for local kiosks, street food and markets

Constraints:

During the reporting, the main constraints across all the value chains that affected the performance of the project, was the drought situation. In the A3, the rainfall was below normal in almost all counties throughout the year. The impact of drought is being analysed but there are indications that rangelands have been seriously degraded, hence serious lack of pastures and loss of livestock.

In SA2, the long rains (March to July) was also far below normal causing serious reduction in crop yield and problems in establishment of feed and fodder. However, for drought tolerant crops, while yields were low, most farmers produced enough crop for consumption and even some surplus, hence proving the value of these drought tolerant crops for food security. In HR1, rainfall was below during the short rains of October to December 2016, which affected the activities of root crops. However, farmers obtained reasonable yields for most drought tolerant crops again proving the role of these crops for food security.

In the dairy value chain, cattle rustling is rampant along the Kericho-Kisumu border and this has discouraged rearing of livestock in general. Consequently, farmers rearing indigenous cattle have little motivation to invest in the breeding initiative promoted by the dairy component of the AVCD program. Another constraint in dairy value chain development is the low number of competent technical staff. Either due to devolution or low government investment in livestock functions, there are very few competent technical staff in animal health and animal nutrition at County level, slowing down implementation of breeding and feed and fodder activities.

In potatoes value chain, one of the constraints during the reporting period was that commercial seed multipliers were not able to supply the quantity and variety ordered by VPAs. Even large seed potato producing farms such as Kisima were not able to supply the demand of quality seed from Meru County. In addition, there was not enough certified seed as starter material for quality seed by the decentralized seed multipliers. To resolve this constraint the project has started the process of establishing seed units within the potato marketing cooperatives societies and for them to become licensed seed merchants with KEPHIS. In addition, the project is introducing the technology of multiplication of seed from rooted cuttings as an alternative to certified seed.

1.5 Subsequent Quarter’s Work Plan

In addition to routine program management, monitoring and evaluation, communication and knowledge management, and coordination activities, the program management secretariat will continue to support the establishment of milk chilling plants; and organize end of project workshops. Being the third year of implementation, the project will endeavor to achieve set targets as well as undertaking efforts to ensure sustainability of the project benefits, and strengthening local institutional structures for continued delivery of services. Focus will also be on market development as this is a key driver of transformation along the value chain. The value chain components will continue to implement the work plan as detailed in the Annual Work plan and budget in to conclude the outputs for the project as summarized below.

Livestock Value Chains

- i. Output 1.1: Improved market management through co-management model (CMM) facilitating 15 stakeholder forums and supporting 30 LMAs.
- ii. Output 1.2: Enhance market vibrancy by promoting access for 5000 women and youth on business literacy skills and linking them to appropriate financial institutions.
- iii. Output 1.3: Increase in prevalence and use of market information systems to directly reach 25,000 traders and producers.
- iv. Output 2.1: Enhanced livestock value chain through improvement in the availability of and access to fodder and forage.

- v. Output 2.2: Improved surveillance and control of diseases for increased livestock production and trade
- vi. Output 2.3: Improved productivity through better herd management and Innovative Community-Based Breeding (ICBB) of small ruminants working with 5000 producers from 15 markets.
- vii. Output 3.1: Improved accesses to diverse and quality food and change in nutrition related behavior, through increased home consumption of milk with 10% increase among children in 60,000 households' regularly consuming milk throughout the year.
- viii. Output 3.2: Improved consumption of nutrient rich foods by women, with a 10% increase in regular consumption of milk and meat by women of childbearing age in 60,000 households.

Dairy Value Chain:

- i. Output 1.1 Enhanced stakeholder capacity via innovative extension approaches and business training.
- ii. Output 1.2 DBHs and/or innovative agro-vet models implemented for improved access to inputs and services.
- iii. Output 1.3 Increased uptake of improved dairy technologies by smallholder dairy households.
- iv. Output 1.4 Functional multi-stakeholder platforms established for stakeholder engagement and policy dialogue.
- v. Output 2.1 Increased business orientation and gender inclusivity in producer organizations.
- vi. Output 2.2 Increased number of private enterprises trading with farmers/farmer groups.
- vii. Output 2.3 Establishment of PO share capital schemes and provision of business development services.
- viii. Output 3.1 Increased partnerships for aggregation and distribution of milk to enhance household access to milk.

Drought Tolerant Crops Value Chain:

- i. Output 1.1: At least 120 small holder good seed producers (20 in each County) in six counties that have been trained to produce and disseminate high quality seed will be identified and linked to seed companies and seed banks.
- ii. Output 1.2: 15 collective Producer Marketing Groups organized and trained in group dynamics and organization management to ensure sustainability.
- iii. Output 1.3: 60 extension staff in SA2 trained in quality standards to meet market requirements and 5000 producers trained in agri-business, product quality and standards.
- iv. Output 1.6: 2 seed companies, 2 institutional seed units, 76 seed stockists engaged for production and delivery of quality seed (linked to output 1.1).
- v. Output 1.7: 15 farmer groups already trained in using threshers and shellers to reduce drudgery linked to fabricators and financial intermediaries.
- vi. Output 1.9: At least 25 Community Seed Banks established for safe storage and improved seed access.
- vii. Output 1.10: At least two grain and two product market outlets (food, feed and malting) identified and developed targeting National, Regional and International markets.
- viii. Output 2.1: Value Chain market value chains analyzed and upgrading strategies for small holder farmers developed.
- ix. Output 2.2: 20 processors trained in rapid testing procedures for aflatoxin contamination detection.
- x. Output 4.2: 12,000 youth and children reached with dietary diversity messages and sensitized on the nutritive value of drought tolerant crops.

Potato Value Chain:

- i. Output 1.1 Early generation seed production (minitubers, cuttings and first/second generation field tubers) increased by at least 200 tons annually.
- ii. Output 1.2 At least 150 decentralized seed multipliers (DSM) developed to annually produce sufficient seed potato for 2,000 ha and obtain gross margins of 1,500 USD/ha.
- iii. Output 2.1: Smallholder potato farmers obtain gross margins of at least \$1,132/ha through using quality seed potato.
- iv. Output 2.2 Farmer capacity built to produce at least 25% of their seed needs through saving quality seed potato on-farm.
- v. Output 3.1. Organized and coordinated market information for seed potato suppliers and ware potato market prices developed and implemented.
- vi. Output 3.2 At least 500 farmers linked to formal and informal markets.
- vii. Outputs 4. Mainstream potato as a component of agricultural nutrition interventions.

Orange Fleshed Sweet Potatoes Value Chain:

- i. Output 1:1: Increase productivity and production of OFSP among 65,000 smallholder households.

- ii. Output 2.1: OFSP and vitamin A material integrated into nutrition education and nutrition counseling at health centers and schools, capacity strengthened among technical staff and community groups.
- iii. Output 2.2: Options for diversified OFSP utilization, such as complementary baby food, adapted and scaled up and capacity strengthened for 18,000 households.
- iv. Output 3.1: At least 3 technologies and practices to improve root storage adapted and disseminated.
- v. Output 3.2: Gross margins and market availability of OFSP roots increased by at least 15% through the strengthening of selected OFSP market chains, including to commercial processors.

1.6 Financial Report

The program has an approved budget of \$ 16,008,690 for executing the first year (2015/2016) and second year (2016/2017) work plan activities with allocations for each value chain and line item as shown in Table 7. As at 30th September 2017 the overall program expenditure was US dollars, 15,635,392 which is a burn rate of 98%. The burn rate is within the expected range and corresponds with the performance of the program in the implementation period. The Livestock Component overall burn rate was at 95%. The Program Management Secretariat had a burn rate of 80%, Dairy Value chain burn rate was at 101%, the Root Crops and Drought Tolerant Crops Value Chains' burn rates were 99% and 111% respectively.

2 KEY ACHIEVEMENTS (Qualitative Impact)

2.1 Management, Monitoring and Evaluation

In addition to routine administration and monitoring and evaluation field visits, the program management secretariat has continued to support various cross-cutting activities in nutrition, institutional development, youth engagement, engagement with national government and county governments, as well as engagement with other partners in the feed the future portfolio. The following are some of the key achievements at the program management secretariat level during the reporting period:

1. **Establishment of Potato Cooperative Societies:** To respond to pressure for better coordinated market systems and reduce inequalities along the value chain, AVCD is supporting each of the four counties to legalize and establish a potato co-operative society (PCS). Following a consultancy report, county governments are continuing in the process of establishing county potato cooperative societies. Elgeyo Marakwet and Meru counties have made considerable progress and the societies are already in place, while registration of the societies for the Nandi County has been delayed at the Ministry Headquarters. Uasin Gishu County decided to use existing societies at sub county level but establish a union at county level and the Meru County will be launching two potato cooperative societies in January 2018.
2. **Rapid Assessment of Youth in AVCD:** While most of the world's food is produced by (ageing) smallholder farmers in developing countries, older farmers are less likely to adopt the new technologies needed to sustainably increase agricultural productivity, and ultimately feed the growing world population while protecting the environment. There are recognized barriers to youth participation in agriculture such as: the negative perception of the sector by youth, access to information and agricultural education; access to land; access to engagement and participation in policy dialogue; access to credit; and access to markets. In the zones where AVCD operates, it is imperative that a comprehensive assessment is undertaken to establish the specific situation and make practical recommendations on how best to engage and enhance youth participation. A rapid assessment on youth engagement in AVCD was completed in May and the recommendation have been used for third year annual work plan and budget.
3. **Establishment of Milk Chilling Plant:** In view of the role of milk chilling and pasteurization in dairy value chain, AVCD was asked by USAID to do a proposal for the establishment of four milk chilling plants and one pasteurizing plants in selected sites within the FTF ZOI. The proposal was submitted to USAID and approved in May 2017. Sites were selected, architectural designs completed, bill of quantities completed, and bids for the construction of buildings awarded during the reporting period.
4. **National Program Launch:** The program was officially launched by the American Ambassador, in conjunction with the Cabinet Secretary – Agriculture, Livestock and Fisheries in Turkana on 28th of March 2017.
5. **Internal Midterm Program Review:** An internal mid-term program review, was carried out in the month of May by an external consultant. The review report has been intensively used for the third-year annual work plan and budget.

2.2 Livestock Value Chain

One of the main achievements of the livestock value chain component during the year was in support to county governments in policy and legislation formulation. In the regard, enactment of Livestock Sale yards' bill into an Act, of Isiolo County Assembly is a major milestone achieved towards setting up appropriate institutions and structure that are important enablers for enhanced governance of livestock markets. In addition, the Act will legally entrench LMAs as important actors in the governance also boost true ownership of co-management model of managing livestock markets. For the Implementation of the Act, the project has embarked in supporting the County Government develop rules and regulations for smooth operationalization of the Act.

The project also supported business literacy trainings for selected county government officials as TOTs, who later trained youth and women entrepreneurs and groups, including cooperatives and other market-based enterprises, in Marsabit and Isiolo counties. The training was also designed to equip the county government staff with skills and tools needed for continued coaching and mentorship of the groups beyond the project. Part of the resource persons included

representatives from GoK managed Youth Enterprise Development Fund, Women Enterprise Fund, County trade fund and banks e.g. Equity and KCB. The financial institutions presented their financial products and services. The event also created contacts and linkages with the trainees for the purposes of follow up. The project has so far linked a total of 11 groups and 63 individual women and youths to appropriate financial institutions including, Youth enterprise fund; Women enterprise fund and County trade fund. The groups and individuals applied and received a total of Ksh 7.9 million as business loans from the various funds, to expand their businesses.

In the same focus of business development, the project convened livestock traders from Isiolo and Garissa counties mainly dealing with live animals, Beef, Hides and Skin and Bones participated in a Business to Business forum. The forum was also attended by end market actors from big slaughter houses, supermarkets, hotels among others. The process created platform where the various value chain actors established business relationships (both backward and forward linkages) that culminated into cuttings of business deal. For Instance, a women trader group in Isiolo County received a supply order from Windsor Golf club for supply of 30 goats specifically of 17Kg every week at KES 6,500 per goat.

Another key achievement during this period was in rangelands resources mapping. The project produced maps of shared rangeland resources for northern Kenya (inter-county) and for Taraji Sub-County of Wajir, for use in county and inter-county spatial planning. Use of these maps will contribute to the protection of key rangeland resources such as drought grazing reserves, pastures and other critical range resources etc. The maps will also contribute to more effective planning and management for rangeland resources and livestock production in northern Kenya. Efforts to incorporate the spatial plans into county integrated development plans (CIDP) are ongoing.

In the same area of rangelands management, the project also supports Frontier Counties Development Council (FCDC) in drafting a prototype Bill on Rangeland Management for the northern ASAL counties, and Marsabit County in the development of appropriate institutional frameworks for community institutions managing rangelands. It was decided to house a community rangeland management framework under a Livestock Policy and Rangeland Management bill. A draft policy is in place waiting for validation by the county technical working group. Wajir County is similarly housing its community rangeland governance framework under a Livestock Policy and Rangeland Management bill. The policy has gone through public participation and is awaiting cabinet approval. The Rangeland Management Bill of Wajir will soon to be sent to the new County Assembly.

In collaboration with the counties, the project continued to strengthen the disease surveillance capacity of the counties' veterinary authorities through establishment of community-led disease surveillance structures and systems. The training of community disease reporters) and producers, have significantly improved the livestock disease reporting channels, across the 5 counties. In Counties like Turkana, the surveillance reports have shortened the disease outbreak response time. Additionally, these reports ensure proper targeting of responses and efficient utilization of resources. For instance, through enhanced reporting, Garissa County has improved its rating in the national disease surveillance ranking carried out regularly by the DVS, from No. 43 (in 2015) to No. 2 (in 2017). This improvement can directly be attributed to community-based surveillance networks established across all the 5 counties by the respective veterinary authorities, through AVCD LC support. Moreover, the project, in close collaboration with the Marsabit County Directorate of Veterinary Services (CDVS) has commenced piloting of an electronic disease surveillance system, where surveillance data collected is uploaded into the system at the sub-county and the county level, by use of smart phones, and finally relayed to county-based database, where the data is analyzed and feedback to the communities through the field officers and CDRs given. The synthesized disease reports are not only informing active surveillance and targeted responses, but are also providing time series data e.g. disease trends and will eventually be used to produce disease risk maps. The community based surveillance, reporting system and quick response reduced the number of disease outbreaks particularly during the prevailing drought and the saved the livestock keepers from imminent loses which often characterizes drought of the current magnitudes.

During the reporting period, there was accelerated integration of nutrition activities in other value chain interventions across the productivity and marketing outcomes. The integration was undertaken to reach the pastoralists with a holistic package of interventions across the value chain and to have greater impact within the communities. Through the Ministry of Health and Ministry of Agriculture, community members were reached through interventions such as nutrition education sessions, community dialogue sessions, national campaigns, and trainings on disease surveillance and business

development. Financial and technical support was also provided to the Counties of Isiolo and Marsabit during the County Malezi Bora campaigns, World Breastfeeding week activities and during surveys. The AVCD nutrition component is keen on layering, integration and sequencing with other USAID partners.

Despite some delays in the first year, the value chain components put extra efforts and achieved most of the targets as shown in table 2 below. The targets for the number of farmers and other who applied improved technologies; and Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices were not achieved because of the impact of the prolonged drought situation. Higher numbers were achieved in other targets mainly because the program changed the approach and started using training of trainers and county staff.

Table 2. Achievements of Topline Indicators in Livestock Value Chain

Indicator	Annual- Year 2			Life of the program		
	Target	Achieved	%	Target	Achieved	%
EG. 3.1: Number of households benefitting directly	16,240	34,949	215	26,240	43189	165
EG.3.2-18: Number of hectares of land under improved technologies or management practices	580,000	600,814	104	858,695	634,814	74
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices	16,500	6,871	42	33,000	10,509	32
EG.3.2-1: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	4,000	35,105	878	8,013	43,385	541
EG.3.2-20: Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices	11	11	100	40	12	30
EG. 5.2-1: Number of firms receiving USG-funded technical assistance for improving business performance	10	6	60	25	6	24
HL.9-4: Number of individuals receiving nutrition-related professional training	1,140	1915	168	2,910	1915	66
HL.9-2: Number of children under two years (0-23months) reached with community level nutrition interventions thru USG-supported	4,700	13,597	289	12,300	13,597	111

2.3 Dairy Value Chain

During the second year of implementation, the dairy component of the AVCD program continued to unlock potential for dairy farming in these pre-commercial dairy areas, building on the foundation of ground-breaking livestock improvement technologies introduced in Year 1. The dairy component intensified delivery of improved dairy technologies and advisory services to smallholder dairy farmers, provided business development support to dairy businesses to offer better services to farmers and reached households with nutrition education and elaborated below.

Farmer training and extension services: During the report period the dairy component expanded the network of farmers served by community livestock extension volunteers by recruiting additional volunteers and training them on grassroots extension approaches. These volunteers have now been linked to county livestock extension personnel for necessary backstopping. The volunteers have also been provided with technical training on fodder establishment and basic animal husbandry and have been offering advisory services to farmers in their networks. They have also been at the forefront of technology dissemination and mobilizing farmers for other technical interventions such FTAI and ECF vaccination. This has led to increased number of households applying improve dairy technologies.

Besides spearheading technology dissemination, the volunteer extension workers have also been instrumental in the rollout of farmer training based on a comprehensive training manual developed by the program. Extension personnel from the livestock departments were supported to provide technical training to the community extension volunteers and other farmers on forage establishment and conservation and improved animal husbandry – animal nutrition, breeding, calf rearing, animal health and housing. More than 6,000 farmers were reached with these trainings during the second year of activity implementation. Additionally, the dairy component has also rolled out a training module on farm business planning, which has been delivered to 135 volunteer extension workers across Busia, Siaya, Vihiga, Kisumu and Homa Bay counties. After the farm business plan training, farmers have realized that they could improve whole farm gross

margin by redesigning farms to invest more in dairy enterprises. The volunteer extension workers will support other farmers in their network to undertake own business plans and hence unlock dairy potential in respective regions.

To demonstrate the needs for better animal housing, the project supported 20 volunteer farmer trainers to upgrade their dairy units to basic level using local materials. This was a joint venture that involved farmers catering for part of the cost of unit upgrading. The improved dairy units will lead to better animal health and productivity and thus help the community livestock extension volunteers to demonstrate to influence other farmers in the village to improving their cattle housing. It is apparent that the farmer trainings are beginning to impact on husbandry practices with private animal health assistants (AHAs) reporting increased demand for AI and clinical services by farmers.



Breeding and animal health: The first set of calves conceived through FTAI were delivered giving opportunities households to enter the value chain. Drawing on lessons from that first phase of the accelerated breeding program, the project team enhanced the delivery of FTAI technology by decentralizing coordination and enlisting more qualified personnel to undertake animal selection. During the reporting period, 2,784 cows in 1,962 households in Kisumu, Vihiga, Siaya, Busia, Homa Bay and Makueni counties were inseminated.

AVCD project field staff Martin Kundu and volunteer farmer trainer Erick Nachbwende of Esikoma Sub

To bring gains of improved breeds to far flung areas with limited AI coverage, the project also distributed 35 Ayrshire bull calves in Busia, Siaya and Vihiga counties. Additionally, the program via the dairy component trained 41 new AI technicians across the 9 project counties as part of a strategy towards sustainable delivery of improved breeding technologies. In the spirit of collaboration, the county governments of Makueni and Migori provided AI kits to some of these AI technicians trained by the AVCD program. This collaboration will go a long way towards increased access to breeding services by emerging dairy farmers in SA2 and HRI ZOIs respectively.



VBDA Niller Musinya of Masana Sub-location; South Maragoli Ward; Vihiga County happily showing her 1 week improved calf born from Fixed Time Artificial Insemination.

During the reporting period, the program also initiated a scheme aimed at supporting interested farmers acquire improved dairy cattle. The project rolled out a *kuku-to-cow* scheme that enables farmers to raise capital for purchase of dairy cattle. Through this initiative farmers are trained on basic poultry husbandry and supported to acquire chicks that

they can rear and later sell to raise funds for acquiring dairy cattle. So far 55 volunteer extension farmers have ordered and received chicks.

In HR 1 high prevalence of ECF in the region has been a major impediment to the nascent dairy industry – causing high losses to farmers and discouraging uptake of improved dairy cows. To address this constraint, in addition to the breeding the program has made good progress in up scaling the adoption of ECF vaccine in the HR1 counties. To ensure sustainable delivery of the vaccine, the project identified agents and linked them to one of the vaccine distributors which in turn has enhanced local availability of vaccine leading to an increased number of farmers reached with this important technology. Additional distributors are now crowding in to cash in on the demand for the vaccine that has been generated by AVCD. It is important to note that prior to AVCD program there had been no distribution of ECF vaccine in the HR1 region and farmers suffered losses in morbidity and mortality of their improved cows. The project also provided trained vaccinators with seed vaccine to enable them to kick-start their vaccination businesses. Buoyed by this business incentive and the supplier linkages established by the program, the vaccinators have intensified vaccination exercise in both HR1 and SA2 ZOIs, vaccinating more than 300 cattle belonging to 129 households.

Feeds and forages: During the reporting period fodder production especially of e *Brachiaria* grass is increasingly becoming popular among smallholder farmers in HR1 traditionally not known for forage production. Farmers who adopted improved forages during last years are already producing more milk even during period of prolonged drought. Surplus production of feed was stored in the form of hay, which came in handy during the recent prolonged drought - December 2016 to March 2017. Several farmers have now been trained on fodder conservation and some groups have been provided with a lever-based box bailer, which they are using to make hay. The fodder conservation initiative will go a long way towards bridging the perennial feed gap that is characteristic of the smallholder dairy systems in the zone of influence.

Interestingly, many farmers who adopted the grass in year 1 of project implementation have begun selling surplus forages. For instance, farmers from 3 CBOs in HR1 produced a surplus of 1,900 bales of *Brachiaria* grass, which they

sold at Kshs 300 per bale, thus earning a total of Kshs 570,000. Additional business approaches have also been instituted by the AVCD program to ensure sustainable supply of forages even to those who may not venture into own production. Besides sales recorded in HR1, some large-scale farmers in SA2 were supported to establish large forage fields and linked to dairy cooperatives supported to AVCD for sales. This ensures feed sufficiency among affiliate members and sustainable supply of milk to the supported cooperatives. Inspired by the potential for dairy and fodder production in Siaya County, volunteer extension workers have also self-organized and formed a CBO called “Siaya Village Based Farmers’ Advisors”. The purpose of the CBO is to start commercial fodder production. Building strong business cases around fodder establishment, conservation, aggregation and collective marketing will therefore be given priority in the next quarter.

Encouraged by the outcome of forage investment in year 1, the project embarked on an aggressive fodder establishment during the long rains of 2017. Additional 240 nurseries for *Brachiaria* grass were established during this period through the directorate of livestock at the counties. This increased the number of those adopting improved forage varieties by close to 6,000 farmers. Consequently, area under improved forages increased exponentially to 1,155 acres.



Youthful farmer Caleb Ambaira of Masana Sub-location, South Maragoli Ward, Vihiga County in his one-acre Brachiaria plot. Caleb has inspired 8 other farmers to establish commercial fodder plots. Five of the 8 farmers have collected splits from his farm

The project has also identified commercial fodder production as an avenue for incorporating the youth into the dairy value chain. In this regard the project supported 33 young farmers spread across Busia, Siaya and Homa Bay counties to rent one acre of land each for production of *Brachiaria* and *Napier* grass. Nine of these young farmers are about to harvest their first crop of *Brachiaria* grass. Assuming a production of 200 bales per harvest from one-acre plot and a local cost of \$2 per bale, the young farmers will be earning approximately \$400 from their commercial plots per harvest or \$1,600 per year. The young farmers have now become self-employed through fodder business, and more planting materials’ (splits) have become available to distribute to other farmers. There is also a multiplier effect in that the original 9 youths have already encouraged 20 other young people to start planting fodder (giving splits to 12 new farmers). The project is targeting to directly support 60 young farmers to establish commercial fodder plots. Going forward, the young farmers will be provided with business development support. The 60 young farmers will in turn mobilize more young farmers to be trained in fodder business during year 3.

Improved nutritional status of women and children: During the reporting period the program made tremendous progress towards reaching households with nutrition education. The dairy component worked with drought tolerant crops and Livestock value chains to develop and synchronize key messages on maternal, infant and young child nutrition and value specific messages to be used for the engagement at the community level. Moreover, the project collaborated with the MoH and MoA to conduct agri-nutrition trainings in Siaya and Kisumu. These trainings targeted Community Health Extension Workers, Community Health Workers, Ward Agriculture Officers and partners.

Business development: The program is also supporting various businesses along the value chain to enable them offer better services to farmers. During this year the project facilitated improved business practices through development and implementation of business plans, farmer focused strategic plans covering the entire dairy supply chain, supplier loyalty systems and operational efficiency. Three dairy cooperatives in HR1 and six (6) in SA2 ZOI were supported to develop business and strategic plans as tools to enhance business performance. As part of implementing these business plans, Rongo dairy cooperative in HR1 started packaging its processed dairy products in form of cultured milk and yoghurt under the *Rodaf* brand. In the spirit of partnerships, the County government of Migori has also supported the cooperative with a batch pasteurizer and a fresh milk dispenser.

The project also organized capacity building sessions and experiential learning events for dairy business. In SA2, six (6) dairy businesses namely, Mukuyuni, Mwiwe, Kitise Kithuki, Kathonzweni and Maakiou were financed to visit innovator market actors that have implemented ICT solutions that improve operational efficiency, farmer loyalty and service delivery to farmers. The project also linked dairy businesses with ICT solution providers and after these activities, Kathonzweni Dairy Co-operative is in negotiation with Virtual City to roll out an ERP software that will help in digitizing their business operations. Dairy businesses were also supported to invest in business innovations that have potential to improve supplier/consumer loyalty and increased milk productivity and improved milk hygiene. Working in collaboration

with KDB, 2 dairy cooperatives in Makueni and Kitui counties were taken for an exchange visit to expose them to best practices in milk handling as required by KDB as well as how to improve efficiency in business operations through digital management.

To enhanced delivery of inputs and services, the project implemented innovations for better connecting rural smallholders with good quality dairy inputs and services based on the agent network model. During the year a total of 19 agents were recruited and these agents are currently covering 750 farmers. Additionally, the project supported three (3) dairy cooperatives in HR1: 2 in HR1 (Seke and Rongo hubs) and 1 in SA2 (Kikima Dairy) to establish own agro-vet shops. Respective cooperative-owned agro-vets were supported to implement customer oriented retail and distribution strategies that can provide consistent and cost-effective services to dairy farmers. In addition, the project has brokered a deal with equipment providers to provide equipment to AVCD supported dairy businesses.

With regards to farmer financing, the project has initiated discussions between Kenya Commercial Bank (KCB) and four (4) dairy businesses namely, Kikima, Mukuyuni, Kilala and Kathonzweni dairies for debt financing through the *MobiGro* program. This is a program that is considering providing critical funding for smallholder farmers in the largely unbanked agricultural sector.

Household nutrition: During the reporting the program component conducted an extensive formative research using a combination of rapid ethnographic methods (focus group discussions and in-depth interviews), barrier analysis (using doer-non-doer surveys) and market analysis using the Cost of Diet approach. The aim of the mixed methods study was to inform the development of a contextualized, gender-responsive and evidence-based Social Behaviour Change Communication (SBCC) strategy that will address outputs within the program. The proposed strategy is currently being finalized and will guide in the roll out of key materials, products and activities in the implementation areas with an aim of improving the nutritional status of women and children through improved diet diversity, increased consumption of dairy products and increased utilization of healthcare services.

While the value chain component has been very well received in the field, achievements of the targets set at the beginning of the project was varied due to various reasons as shown in table 4 below. Higher than targeted numbers of beneficiaries and organizations that applied technologies or management practices was achieved mainly because of the high demand for feed and fodder technologies and because of the good responsive from small and large dairy cooperative societies. Lower than targeted numbers were achieved in other indicators due drought and inter-community conflicts.

Table 3. Achievements of Topline Indicators in Dairy Value Chain

Indicator name	Annual- Year 2			Life of the program		
	Target	Achieved	%	Target	Achieved	%
EG. 3.1: Number of households benefitting directly	24,500	29,922	122	39,200	37,762	96
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices	15,249	34,401	226	44477	40,526	91
EG.3.2-1: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	8,284	2,521	30	18395	2,879	16
EG.3.2-20: Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices	58	72	124	200	81	41
EG. 5.2-1: Number of firms receiving USG-funded technical assistance for improving business performance	180	72	40	400	72	18
HL.9-4: Number of individuals receiving nutrition-related professional training	2,250	1,787	79	6,300	1,787	28
HL.9-2: Number of children under two years (0-23months) reached with community level nutrition interventions thru USG-support	1,467	4,209	287	3,623	4,209	116

2.4 Staple Value Chains

2.4.1 Drought Tolerant Crops

The performance of drought tolerant crops value chain component during the reporting period was closely linked to rainfall situation in the areas of operation. In HR1 rainfall was below normal in the short rains of April to May and in SA2,

rainfall was below normal in both short rains and long rains seasons. While the low rainfall resulted in depressed yields of most crops, the situation provided an opportunity for the drought tolerant crops to prove their role as food security crops as all the beneficiaries had some grains for household food requirement. The beneficiaries did not experience any food shortage and it is estimated that most of them had enough to consume and at least 25% of the beneficiaries had surplus grain for sale. The best performing crops during this drought period were sorghum, green grams and finger millet in HR1; and cowpea, green grams Gadam sorghum and pearl millet in SA2.

One of the most important impacts of drought tolerant crops value chain development in the year was to consolidate adoption of improved varieties. It has been established that the 46,000 farmers were reached with improved high-quality seed in 2016-2017 period, and they cultivated about 38,000 ha of drought tolerant crops.

Informal sorghum seed plot in HR1



The mean grain production per household was estimated to be 230 kg of sorghum and 250 kg of green grams leading to estimated total production of 4,900 t of sorghum and 4,700t of green grams produced by project beneficiaries in the two seasons of the year. The productivity was estimated to be 920 kg/ha and 1000 kg/ha for sorghum and green grams, respectively in the two seasons.

The second important impact of the drought tolerant crops value chains was building a strong network of stakeholders for accelerating value chain development. The six county governments of Kitui, Tharaka Nithi, Makueni, Elgeyo Marakwet, Siaya and Busia mobilized almost 100 ward agricultural officers, 16 Sub-county Agricultural officers, 16 Sub-county crop officers to offer extension services and distribute seeds to 46,000 farmers in 50 wards spread.

During the long rains, there was a fall-army worm invasion on 60% of sorghum farms in all the project mandate wards of Busia and Siaya Counties. The project in collaboration with county Governments, sensitized beneficiaries on control of the worms using ALBAZ insecticide in Busia and Halothrin in Siaya. In Siaya, county development fund bought Kshs 3 million worth of chemical to control fall army worm. In Busia the county Government also bought other some chemicals for use by farmers and the invasion was brought under control with minimum damage to sorghum crop. The project assisted 95 seed producers (31% female) from Siaya and 105 farmer seed producers (female-48%; youth-2%) from Busia by providing them with chemicals to control the fall army worm, especially in sorghum.

During the period, the project has initiated and strengthened product and input marketing structures by setting up 9 seed banks and 14 grain aggregation centers by mobilizing and training



Farmer in Elgeyo Marakwet with 180 bags of unshelled groundnuts for market

53 extension staff in agribusiness who in turn trained 2,253 farmers in agribusiness. Fifteen (15) traders and SMEs have been empowered to buy grain from the collection centers run by a private company. In the months of August and September the private companies in Kitui aggregated about 22t of green gram which they sold at 1.2 m Ksh (12,000 USD) while in Siaya one the companies could aggregate about 76 t of sorghum valued Ksh1.6 m (16,000 USD). The aggregated sorghum was bought by Primax Ltd and sold to Proctor and Allan in Nairobi which makes health food products. In Elgeyo Marakwet County, through the efforts of Egerton University and their marketing partner Agri-Soko, the project beneficiaries marketed groundnuts estimated at Ksh 20m (200,000 USD). As more emphasis is put in input and product markets in year 3, the subsistence agriculture in the mandate

counties is gradually being transformed into commercial farming as businesses.

The drought tolerant crops nutrition team developed a new partnership with a sorghum and millets processing company, Signature Food company, which has rolled out two new products in the market – a brown ugali flour product and an Uji Mix product. The program also worked with Nairobi Technical Training Institute to test and adapt different recipes and products before widespread dissemination and commercialization.

In business development, the program not only initiated the transformation of subsistence agriculture in Siaya and Busia to commercial farming, but has also transformed the crop production systems during the short rains where, due to culture (Busia) and lack of suitable varieties (Siaya), farmers never planted sorghum and finger millet in the short rains. These crops have now become important for food and cash especially at the end of the short rains season, culminating to change of farming habits and enhancing food and income security in the months of January to June, when food insecurity has been at its peak. The introduction of short maturing green grams in the farming systems especially in the short rains in Siaya and Busia has not only improved the nutrition of mother and child during the famine months but has diversified household sources of income during that period.

This value chain component performed very well and achieved most of the topline indicators as shown in table 4 below. Lower than targeted numbers were achieved for number of beneficiaries, of the area under improved technologies and management, and the number of firms benefiting from improved business training mainly due to the impact of drought and the national elections. In EG.5.2-1, the low level of numbers was due to the delay in engaging the marketing partner-Farm Africa to cover additional counties. This has however been sorted out and targets are expected to be achieved in the third years. Insecurity in Elgeyo Marakwet due to inter-community conflicts made the two targeted sub-counties i.e. Marakwet West and East inaccessible so some of the planned activities in the affected areas could not be implemented. Higher than targeted numbers were achieved for other mainly due to the high demand of the drought tolerant seeds. EG.3.2-20 Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices includes those that were previously not reported for the past year hence seeming like exceeding targets.

Table 4. Achievements of Topline Indicators in Drought Tolerant Crops Value Chain

Indicator name	Annual- Year 2			Life of the program		
	Target	Achieved	%	Target	Achieved	%
EG. 3: Number of households benefitting directly	53,980	39,836	74	8,000	59,786	68
EG.3.2-18: Number of hectares of land under improved technologies or management practices	57,366	38,800	68	216,866	65,132	30.0
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices	34,000	44,295	130	91,285	58,131	64
EG.3.2-1: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	32,288	27,796	86	89,837	53,066	59
EG.3.2-20: Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices	10	40	400	238	40	17
EG. 5.2-1: Number of firms receiving USG-funded technical assistance for improving business performance	120	28	23	420	28	7
HL.9-4: Number of individuals receiving nutrition-related professional training	4,000	4,020	101	6,676	4,020	60
HL.9-2: Number of children under two years (0-23months) reached with community level nutrition interventions thru USG-supported	1,000	21,033	2,103	2,000	21,033	1,052

2.4.2 Root Crops

The root crops value chain comprises of Potato and orange flesh sweet potato. The two crops are grown in different locations, in different counties and serve different purposes. While potato is serves the purpose of the source of start, orange flesh potatoes serve both as a source of start and a source of vitamin A. The two crops are therefore described separately here in.

2.4.1.1 Potato

The potato value chain subcomponent has made good progress in resolving the constraints of seed system, availability of early generation seed as well is building capacity of smallholder farmers during the reporting period as elaborated below. Furthermore, in value chain approach is following the theory of change to apply both the pull and the push forces, the program has also made good progress establishing farmer institutions for marketing and value addition.

Developing potato seed system: During the reporting, period the project focused on developing capacity of progressive

farmers to become commercial seed potato multipliers and regard seed multiplication as a business. In year 2, 223 seed multipliers who were beneficiaries of the project sold 189 tonnes of quality seed sufficient to plant 95 ha to 1,279 farmers, worth \$77,900 US. Seed multipliers supported by the project generated \$177,600 US in total value of sales across Elgeyo-Marakwet, Nandi, and Uasin Gishu of the North Rift, and Meru. This is a tremendous achievement bearing in mind this business did not exist prior to AVCD Project.

Early generation seed: Early Generation Seed (EGS) is a pre-requisite of any commercial seed production. In potato value chain in Kenya shortage of starter material, for certified seed production is a major bottleneck in the potato seed system. The starter material used by seed merchants originates from minitubers and basic seed. Rooted apical cuttings would therefore contribute to reducing seed shortages. During the reporting period, the potato value chain component put a lot of efforts in on apical cuttings as starter material for EGS production and good progress has been made to formally integrate cuttings into regulatory seed certification protocols of KEPHIS. During the report period Genetic Technologies Laboratories and Stokman Young Plants with support from the project distributed 168,000 cuttings as early generation seed. These have resulted into 8 tonnes of EGS in year 1 and at least 80 tonnes in the second field multiplication (April to August).

Seed production: After two completed seasons and the third underway, the potato value chain is in the stage of sustaining the seed systems. After two seasons a total of 210 tonnes (t) of seed was sold as foundation seen for commercial potato seed production. This is considerable progress bearing in mind that there was no seed system at the start of the project.

After observing the market opportunities for production and sale of quality seed, 41 entrepreneurial North Rift seed multipliers and village potato advisors seed multipliers in Meru County have invested \$10,779 US in their seed multiplication businesses by renting 20.3 ha to plant on a larger area this season. North Rift seed multipliers invested \$18,000 US to purchase 36.5 t of starter seed in year 2. Thirty-five VPAs invested a further \$3,360 US for an additional 7 t of starter seed to further multiply, while 37 seed multipliers invested \$8,846 US in 97 tonnes of seed storage. This is tremendous achievement in resolving the issue of potato seed availability.

Building capacity of smallholder potato farmers: After the first season of farmers' use of quality seed produced by seed multipliers, farmer yields doubled compared with the use of traditional seed, averaging 19.2 and 9.4 t/ha (Box 1), respectively. Preliminary results from the year 2 annual survey have revealed that median gross margins doubled among smallholder farmers from the baseline of \$720 to a median of \$1,464 US/ha. In addition, interventions to support seed systems have reduced the distance farmers travel to purchase quality seed from the baseline of 110 km to buy certified seed as quality seed not available at beginning of project, to 2.0 km to access true quality seed.

Potato marketing and value addition: The National Potato Council of Kenya is the main sub-grantee for potato marketing. During the reporting period, NPCK officially launched the Viazi Soko platform on 25th May, which provides seed and ware market information and links markets and farmers. To date, 44 farmers across potato value chain counties accessed the platform to enquire where to buy seed.

In addition to the activities of NPCK, the project is supporting the establishment of potato cooperative societies as the apex farmer institutions for potato seed, extension, marketing and value addition. During the report period, three potato marketing cooperatives Viz: i) Nandi Potato Growers Farmers' Cooperative Society Limited; ii) Meru Tamu Potato Farmers' Cooperative Society Limited and; iii) Upendo Potato Farmers' Cooperative Society Limited, covering Abothuguchi west ward in Meru have received their certificates and have begun operations.

In Uasin Gishu, one potato cooperative will initially operate under the Ainabkoi Dairy Cooperative Society, which already is operational, and a second cooperative society will be formed in Matharu to cover Chagaiya and Timboroa/Tarakwa areas. In Elgeyo Marakwet, there is already a cooperative society being supported under a county program. The potato value chain will engage with this 6th cooperative to support them in certified seed production. The Meru Tamu and Upendo cooperatives are gaining memberships, with 75 and 70 registered farmers, respectively.

Box 1.

Farmer Betty in Meru in her plots of potato planted with quality seed potato purchased from her local seed multiplier (left) and seed of unknown origin sourced from local markets (right). In her first season, Betty purchased 16 50-kg bags of quality seed and more than doubled her yields, yielding 16.6 t/ha using quality seed compared to 7.6 t/ha using farmer seed. This second season Betty purchased a further 16 50-kg bags. Photos: M. Parker (CIP-SSA).



2.4.2.2 Orange Flesh Sweet Potato

During the reporting period OFSP activities focused on strengthen the seed systems, marketing and market development. A total of forty decentralized vine multipliers were established, and technical support has been provided to undertake vine multiplication as business. Over 200 ha of OFSP were established by farmers using vines purchased from vine multipliers, indicating that farmers are now willing to pay.

Achievement of topline indicators during the year for the root crops value chain was varied as shown in table 5 below. Lower than the targeted area of land under improved technologies was achieved because farmers in Uasin Gishu and some parts of Elgeyo Marakwet did not plant due to drought situation in the April to June rainfall season. The targets were also not achieved for EG. 5.2-1: Number of firms receiving USG-funded technical assistance for improving business performance because this target was note included in the first year, hence it has taken time to identify the firms.

Other indicators were achieved beyond target due to the good cooperation of the county government and the demand of the technologies from the farmers.

Table 5. Achievements of Topline Indicators in Root Crops Value Chain

Indicator name	Annual- Year 2			Life of the program		
	Target	Achieved	%	Target	Achieved	%
EG. 3.1: Number of households benefitting directly	56,185	45,018	80	103,497	58,948	57
EG.3.2-18: Number of hectares of land under improved technologies or management practices	1,194	400	34	4,215	515.93	12
EG.3.2-17: Number of farmers and others who have applied improved technologies or management practices	45,970	30,824	67	149,644	43,219	29
EG.3.2-1: Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	2,100	6,129	292	3,614	7,358	204
EG.3.2-20: Number of for profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices	171	307	180	377	479	127
EG. 5.2-1: Number of firms receiving USG-funded technical assistance for improving business performance	10	3	30	30	3	10
HL.9-4: Number of individuals receiving nutrition-related professional training	248	187	75	366	187	51
HL.9-2: Number of children under two years (0-23months) reached with community level nutrition interventions thru USG-supported	11,225	13,046	116	22,225	13,046	59

2.3 Lessons Learnt

Lesson learnt during the reporting period vary from region to region and from country to county. In A3, it has been observed that the interest in County Spatial Planning as a tool for structuring and organizing management rights for rangelands is strong in Wajir County. The project will therefore expand these interventions in all the quarters in the remaining period.

In feed and fodder production, it has been realized that the small-scale nature of most fodder production initiatives can note make economic sense for commercialization. Furthermore, reliance on manual labor for land preparation cannot support large scale production that would make economic sense. There is therefore a need to support producers to mechanize operations and strengthen governance and expansion of improved pasture sites.

Production of fodder under intensive system is a shift from the extensive traditional fodder production which depended on rains. Therefore, there are many challenges related to technologies in land preparation, rain water harvesting, post-harvest storage and conservation of the fodder for use during the bad seasons by the nomadic pastoralists. This is a niche for AVCD and UON/ADIS to train and impart appropriate knowledge and skills to enhance up take of technologies and innovations.

In Garissa and Wajir, the Ministry of Agriculture is currently leading in the implementation of the AVCD nutrition component with support from the Ministry of Health. This engagement has presented a great opportunity and resulted in the Ministry of Agriculture taking greater ownership of the project and the roll out of activities. In other counties, the

Ministry of Health is the first line Ministry supported by the Ministry of Agriculture. The AVCD program has also learned the importance of changing the implementation strategy to meet program needs depending on the context within counties.

In the dairy value chain, it has been observed that rapid growth of the *Brachiaria* grass varieties provides possibilities for 4 to 5 harvests in a year. This provides substantial opportunities for bridging the feed gap via both own production and increased availability via market for those with limited land. There are even greater gains for households planning to venture into commercial hay production. With yields of at least 200 bales per acre and at least 3 harvests per year, households can earn about Kshs 150,000 per year at a minimum price per bale of Ksh 250.

The piloting of farm business planning among volunteer farmer trainers has been a great eye opener as to the potential that such planning holds for enhancing smallholder commercial orientation. During this piloting exercise, it was realized that current priority farming activities for most farmers in Busia & Siaya include maize and beans, banana (in some areas), dairy and cassava with typical gross-margins for the top four enterprises ranging between USD 200 to USD 400 per year. Banana had the highest gross margin on average. After observing these results, the lead farmers re-envisioned their farms for the future and priorities changed to focus on: dairy, banana, fodder and chickens. Typical gross-margins for the top four enterprises under this new vision ranged from USD 1,000 to USD 3,000 per year, with highest profits expected to come from (highest to lowest): banana; dairy; fodder; then chicken. However, this is only achievable if farmers reduce land allocation to maize by increasing productivity per unit area.

In the breeding activity, it has been very based advisors can play a key role in administering the FTAI as a business. This is mainly because they have the confidence of the farmers, the approach of mobilizing a small number of cows is more flexible, and more flexible. Furthermore, there is greater accountability and responsiveness from the service providers and there are much less risks of errors.

In drought, tolerant crops it has emerged that the development of a sustainable seed supply chain for SA2 will differ slightly from HR1. In SA2, due to frequent droughts especially in the LRs, both the informal and formal seed systems must be integrated closely so that farmers have access to high quality seed of drought tolerant crops from formal sources after a season of crop failure. After a good season, most farmers will source seed from informal sources. In HR1, as the rainfall is more reliable, informal seed sources including establishment of seed banks should be strengthened.

It has also been realized that there are two key drivers to agriculture-driven rural economic growth: i) increased productivity and commercialization of agriculture; and ii) a deliberate effort to link production to local processors, SMEs, micro-enterprises, food businesses and local and urban traders. Linkage of both primary and secondary producers to financial intermediaries will also help spur this transformation.

In the root crops value chain multiply seed potato from cuttings, has been picked up by farmers very quickly. VPAs in Kibirichia, Kiirua, Abothuguchi west and Nkuene networks had an opportunity to multiply rooted cuttings with an aim alleviate constraints in supply of certified seed potato from commercial seed multipliers, which struggle to produce sufficient quantity of the desired varieties at the appropriate time. Production data shows that cuttings have a high multiplication rate of between 10-12 tubers per cutting compared to seed potato tubers which produces 8-10 tubers per plant. Using rooted cuttings, VPAs and farmers were introduced to new varieties such as Unica and Konjo. Farmers have started appreciating Unica since it has visual characteristics similar to Shanghi (number one preferred variety), it produces big tubers and is water stress tolerant.

3 KEY ACHIEVEMENTS (Quantitative Impact)

3.1 Topline Indicators

After two years of implementation, the program achieved five topline indicators beyond targets as shown in the table 1. The Number of farmers and others who have applied improved technologies or management practices with USG assistance as an indication of the strength of CGIAR centres, which are implementing this program, in upscaling of technologies. Achievement of the number of hectares of land under improved technologies or management practices seems to be low because the figures will be derived from the annual survey whose data analysis has not been concluded. For the number of individuals receiving nutrition-related professional training, targets were exceeded during the reporting period, but only 32% for the life of project because the definition of the indicator was changed during implementation. The target will therefore have to be reviewed.

The main reason for achieving beyond the targets for most of the indicators is mainly due to the good cooperation by the partners (NGOs and National and County Governments). However, there was also under targeting at program design stage for some indicators such the number of profit private enterprises, producers' organizations, women's groups, trade & business associations and CBOs that applied organizational level technologies or management practices.

The indicator on EG.3.2-18 Number of hectares of land under improved technologies or management practices will also be achieved beyond target once the figures are captured in the annual survey.

3.2 Detailed Achievements of Indicators (Quantitative)

As indicated earlier, the project is achieved beyond targets in some indicators and below target in other due to varied lessons. Details of achievements in each indicator for per location, and value chain as well as crop in the USAID-FTFMS format are shown in table 5 below.

Table 6. Details of Achievements by Indicator Matrix

INDICATOR TITLE:		Number of individuals who have received USG-supported short-term agricultural sector productivity or food security training (RAA) WOG																			
INDICATOR NUMBER:		EG. 3.2-1																			
UNIT		DISAGGREGATE BY: Location, event, date and gender (FTFMS includes 'type of individual')																			
Number of individuals trained	Geographic Location						Activity Title			Date	Women	Men	N/A	Subtotal							
	Marsabit						Business Development skills			July	34	257		291							
	Siaya						Agribusiness, marketing and group management			Aug-Sept	227	122		349							
	Busia						Agribusiness, marketing and group management			Aug-Sept	194	248		442							
	Kitui						Agribusiness, marketing and group management			Aug-Sept	648	132		780							
	Elgeyo Marakwet						Agribusiness, marketing and group management			Aug-Sept	45	144		189							
	Bungoma	Busia	Homa Bay	Migori			TOT training on good agronomic practices			July	67	68		135							
	Elgeyo Marakwet	Nandi		Meru			Agricultural Sector Productivity & Food Security (ASP&FS)			September	838	788		1,626							
	Totals											2,053	1,759		3,812						
Results:																					
Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
	Achieved			Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	Total	W	M	N/A
Sex: Women (W), Men (M),	0	0		17,793	17,344		42,741	37,571		5,299	6,563		2,053	1,759		20,849	25,823	46,672	44,794	39,330	84,124
Bomet						0	0		0	0		0	0		0	0	0	0	0	0	
Bungoma						10	14		12	8		13	16		45	30	75	23	30	0	
Busia						3547	2362		687	908		206	270		2754	3628	6,382	3753	2632	0	
Elgeyo Marakwet						1369	2101		702	857		134	258		2711	3306	6,017	1503	2359	0	
Garissa						2656	2731		140	60		0	0		560	240	800	2656	2731	0	
Homa Bay						342	343		82	168		27	12		325	670	995	369	355	0	
Isiolo						3488	3703		140	60		0	0		560	240	800	3488	3703	0	
Kisumu						105	150		70	160		0	0		280	640	920	105	150	0	
Kitui						5894	2028		675	900		648	132		2700	3600	6,300	6542	2160	0	
Makueni						6104	2229		675	900		0	0		2700	3600	6,300	6104	2229	0	
Marsabit						4478	5320		140	60		34	257		560	240	800	4512	5577	0	
Meru						390	475		0	0		691	576		2	2	4	1081	1051	0	
Migori						262	234		82	168		15	18		325	670	995	277	252	0	
Nakuru						0	0		0	0		0	0		0	0	0	0	0	0	
Nandi						482	879		97	117		41	67		286	346	632	523	946	0	
Siaya						6282	3961		675	900		227	122		2700	3600	6,300	6509	4083	0	
Taita Taveta						1	0		70	160		0	0		280	640	920	1	0	0	
Tharaka Nithi						2399	2163		605	740		0	0		2420	2960	5,380	2399	2163	0	
Turkana						1490	3687		140	60		0	0		560	240	800	1490	3687	0	
Uasin Gichu						539	761		97	117		17	31		241	291	532	556	792	0	
Vihiga						25	47		70	160		0	0		280	640	920	25	47	0	
Wajir						2878	4383		140	60		0	0		560	240	800	2878	4383	0	

INDICATOR TITLE: Number of public-private partnerships formed as a result of USG assistance (RAA)							
INDICATOR NUMBER: EG. 3.2-5							
UNIT	DISAGGREGATE BY: Location, partnership description and date formed (FTFMS has partnership type)						
Number of public-private partnerships	Geographic Location	Activity Title	Date	Women	Men	N/A	Subtotal
	Garissa	PPP Formed during the drought Response activities (AVCD,SIDAI,COG,)	April			1	1
	Marsabit	PPP formed for (Animal health servise delivery)vaccination(RPRLP.COG, AVCD)	June			1	1
	Wajir	PPP Formed during the drought Response activities (AVCD,SIDAI,COG,)	April			1	1
	Totals					1	1

Results: (In few cases partnerships cover multiple counties)

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Jun-17)						Reporting period (30-Sept-17)			FY 2017 Target		
				Achieved			Achieved			Target			Achieved			Target			Target		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A
Sex: Women (W), Men (M), Not applicable (N/A)			0			N/A			1			0			3						9
Bomet									1			0			0						0
Bungoma									0			0			0						0
Busia									0			0			0						2
Elgeyo Marakwet									0			0			0						3
Garissa									0			1			1						1
Homa Bay									0			0			0						0
Isiolo									0			0			0						0
Kisumu									0			0			0						0
Kitui									0			0			0						1
Makueni									0			0			0						1
Marsabit									0			1			1						0
Meru									0			0			0						1
Migori									0			0			0						0
Nakuru									0			0			0						0
Nandi									0			0			0						1
Siaya									0			0			0						0
Taita Taveta									0			0			0						0
Tharaka Nithi									0			0			0						0
Turkana									0			0			0						0
Uasin Gichu									0			0			0						1
Vihiga									0			0			0						0
Wajir									0			1			1						1

Not additive
- PPP may
cover > 1
county
(Total = 15)

INDICATOR TITLE: Number of technologies or management practices under research, under field testing, or made available for transfer as a result of USG assistance (RAA)																											
INDICATOR NUMBER: EG. 3.2-7																											
UNIT		DISAGGREGATE BY: Location, date and phase/stage																									
Geographic Location				Activity Title				Date	Women	Men	N/A	Subtotal															
Number of technologies	Marsabit				Melako grazing plans				August			1	1														
	Turkana				Kapua Natual Resource				August			1	1														
	Marsabit				E-surveillance				August			1	1														
	Garissa		Isiolo		Marsabit		Turkana		fodder production				September			1	1										
	Totals																										
Results: Note that same technology repeated across multiple counties																											
Blank for target means information not yet available		Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved							
		Achieved			Achieved			Target			Achieved			Target			Achieved										
		W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A					
Sex: Women (W), Men (M), Not applicable (N/A)		0			4			12			0			4			30			16							
Bomet								2			0			0			Not additive - Technology application in > 1 county (Total = 30)			2			2				
Bungoma								4			0			0						0			4				
Busia								4			0			0						0			4				
Elgeyo Marakwet								0			0			0						2			0				
Garissa								1			0			1						4			2				
Homa Bay								4			0			0						0			4				
Isiolo								4			0			1						4			5				
Kisumu								0			0			0						0			0				
Kitui								0			0			0						0			0				
Makueni								0			0			0						0			0				
Marsabit								2			0			3						4			5				
Meru								1			0			0						2			1				
Migori								4			0			0						0			4				
Nakuru								0			0			0						0			0				
Nandi								1			0			0						2			1				
Siaya								0			0			0						0			0				
Taita Taveta								0			0			0						0			0				
Tharaka Nithi								0			0			0						0			0				
Turkana								2			0			2						4			4				
Uasin Gichu								1			0			0						2			1				
Vihiga								0			0			0			0			0							
Wajir								2			0			0			4			2							

INDICATOR TITLE:		Number of farmers and others who have applied improved technologies or management practices with USG assistance (RAA) (WOG)																		
INDICATOR NUMBER:		EG. 3.2-17 N.B. Figures are not representative of the whole beneficiary population - they are activity-based recordings																		
UNIT		DISAGGREGATE BY: Location, date and gender (FTFMS includes commodity' & 'actor type')																		
		Geographic Location				Activity Title				Date	Women	Men	N/A	Subtotal						
Number of individuals	Siaya				Crop Genetics (improved DTC varieties) - seed provided after training				Aug-Sept	4,515	2,029		6,544							
	Busia				Crop Genetics (improved DTC varieties) - seed provided after training				Aug-Sept	2,658	2,880		5,538							
	Elgeyo Marakwet				Crop Genetics (improved DTC varieties) - seed provided after training				Aug-Sept	245	157		402							
	Marsabit				Vaccinations				Jul-Sept	21	197		218							
	Elgeyo Marakwet	Meru	Bomet		Farmers using mobile marketing platform				July	6	29		35							
	Elgeyo Marakwet	Meru	Nandi		Farmers planting certified seed				September	2,598	2,201		4,799							
	Bungoma				Farmers planting OFSP				Jul-Sept	1,054	764		1,818							
	Busia				Farmers planting OFSP				Jul-Sept	156	71		227							
	Homa Bay				Farmers planting OFSP				Jul-Sept	66	26		92							
	Migori				Farmers planting OFSP				Jul-Sept	173	65		238							
	Busia	Homa Bay	Kisumu	Makueni	Migori	Implementation of Fixed Time AI				Jul-Sept	1,032	175		1,207						
	Siaya	Taita Taveta	Vihiga			Implementation of ECF vaccination				Jul-Sept	150	30		180						
	Homa Bay	Kisumu	Makueni	Siaya	Taita Taveta	Vihiga	Improved fodder and feed technologies				Jul-Sept	5,292	11,246		16,538					
	Busia	Homa Bay	Kitui	Kisumu																
	Makueni	Migori		Taita Taveta	Vihiga															
	Totals										17,966	19,870		37,836						

Results:

	Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
	W	M	N/A	Achieved			Achieved			Target			Achieved			Target			Achieved		
				W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	Total	W	M	Total
Sex: Women (W), Men (M), Not applicable (N/A)	0	0		16,173	19,811		43,400	35,155		19,165	17,339		17,966	19,870		54,834	56,885	111,719	61,366	55,025	116,391
Bomet							7	79		90	110		0	1		180	220	400	7	80	87
Bungoma							1284	861		2500	1000		1054	764		5000	2165	7,165	2338	1625	3,963
Busia							5755	4761		2784	2056		3402	4197		7641	6386	14,027	9157	8958	18,115
Elgeyo Marakwet							932	1665		1417	1735		484	581		4723	5773	10,496	1416	2246	3,662
Garissa							787	1124		375	465		0	0		1485	1815	3,300	787	1124	1,911
Homa Bay							5088	4096		2648	1276		1122	1314		5591	3269	8,860	6210	5410	11,620
Isiolo							31	149		375	465		0	0		1485	1815	3,300	31	149	180
Kisumu							982	1186		148	276		638	1263		591	1104	1,695	1620	2449	4,069
Kitui							5869	2285		783	1056		632	1263		3140	4221	7,361	6501	3548	10,049
Makueni							5703	2285		783	1056		601	1254		3140	4221	7,361	6304	3539	9,843
Marsabit							262	788		375	465		21	197		1485	1815	3,300	283	985	1,268
Meru							3750	3034		802	981		1886	1446		2194	2682	4,876	5636	4480	10,116
Migori							1364	1163		2147	1276		864	1360		4080	3019	7,099	2228	2523	4,751
Nakuru							0	0		0	0		0	0		0	0	0	0	0	0
Nandi							806	934		738	902		479	359		2130	2603	4,733	1285	1293	2,578
Siaya							4781	3323		783	1056		5304	3334		3140	4220	7,360	10085	6657	16,742
Taita Taveta							191	298		147	276		766	1273		590	1104	1,694	957	1571	2,528
Tharaka Nithi							2173	2011		636	780	24	0	0		2550	3116	5,666	2173	2011	4,184
Turkana							0	0		375	465		0	0		1485	1815	3,300	0	0	0
Uasin Gichu							240	492		737	902		0	0		2129	2603	4,732	240	492	732
Vihiga							2235	2269		147	276		713	1264		590	1104	1,694	2948	3533	6,481
Wajir							1160	2352		375	465		0	0		1485	1815	3,300	1160	2352	3,512

INDICATOR TITLE:		Number of hectares of land under improved technologies or management practices with USG assistance (RAA) (WOG)																			
INDICATOR NUMBER:		EG. 3.2-18 <i>N.B. Figures are not representative of the whole beneficiary population - they are activity-based recordings</i>																			
UNIT		DISAGGREGATE BY: Location, date and gender of management (FTFMS includes commodity') - if 'association applied' shown under Joint																			
Number of hectares	Geographic Location					Activity Title	Date	Women	Men	Joint	Subtotal										
	Elgeyo Marakwet	Nandi		Meru		Area under certified seed potato	September	2.4	2.3		4.70										
	Elgeyo Marakwet	Nandi		Meru		Area under quality seed produced by seed multipliers	September	7.5	12.5		20.00										
	Siaya					Crop genetic resources - improved varieties (estimate from seed provided)	Aug-Sept	1,027	462		1,489.00										
	Busia					Crop genetic resources - improved varieties (estimate from seed provided)	Aug-Sept	649	702		1,351										
	Elgeyo Marakwet					Crop genetic resources - improved varieties (estimate from seed provided)	Aug-Sept	282	406		688.0										
	Bungoma	Busia	Homa Bay	Migori		Hectares under OFSP	Jul-Sept	40.3	24.1		64.3										
	Totals								2,008.2	1,608.9	0.0	3,617.0									

Results:

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
				Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	Joint	W	M	Joint	W	M	Joint	W	M	Joint	W	M	Joint	W	M	Joint	W	M	Joint
Sex:																					
Women (W), Men (M), Not applicable (N/A)	0	0		788	788	40,305	7,906	4,915	6.5	251.0	223.0	14,340.0	2,008.2	1,608.9	0.0	800	944	57,366	9,914.7	6,524.2	6.5
Bomet							0.9	10.0	1.5	0	0	0	0	0	0	18	22	0	0.9	10.0	1.5
Bungoma							8.3	7.6	0.0	62	48	0	17	9	0	124	96	0	25.3	16.2	0.0
Busia							749.5	414.6	0.0	46	30	2390	654	705	0	98	83	9561	1403.3	1119.7	0.0
Elgeyo Marakwet							655.8	987.1	3.5	0	0	2390	283	407	0	55.2	68	9561	938.3	1394.0	3.5
Garissa							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Homa Bay							45.2	29.6	0.0	54	42	0	11	7	0	114	107	0	56.3	37.0	0.0
Isiolo							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Kisumu							0.0	0.0	0.0	6	10	0	0	0	0	18	43	0	0.0	0.0	0.0
Kitui							2175.0	738.0	0.0	6	10	2390	0	0	0	18	43	9561	2175.0	738.0	0.0
Makueni							1781.0	872.0	0.0	6	10	2390	0	0	0	19	42	9561	1781.0	872.0	0.0
Marsabit							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Meru							15.0	41.4	0.0	0	0	0	8	13	0	55.6	68	0	23.4	54.5	0.0
Migori							9.1	6.5	0.0	54	42	0	7	5	0	114	107	0	16.6	11.5	0.0
Nakuru							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Nandi							14.2	41.9	0.5	0	0	0	1	1	0	55.6	68	0	15.2	42.7	0.5
Siaya							1503.0	802.0	0.0	6	10	2390	1027	462	0	18	43	9561	2530.0	1264.0	0.0
Taita Taveta							0.0	0.0	0.0	5	11	0	0	0	0	17	44	0	0.0	0.0	0.0
Tharaka Nithi							944.0	944.0	0.0	0	0	2390	0	0	0	0	0	9561	944.0	944.0	0.0
Turkana							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0
Uasin Gichu							5.5	20.6	1.0	0	0	0	0	0	0	55.6	68	0	5.5	20.6	1.0
Vihiga							0.0	0.0	0.0	6	10	0	0	0	0	20	42	0	0.0	0.0	0.0
Wajir							0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0.0	0.0	0.0

INDICATOR TITLE:		Number of for profit private enterprises, producers organizations, water users associations, women's groups, trade and business associations and community-based ...											
INDICATOR NUMBER:		EG. 3.2-20 Activity-based reporting in some cases											
UNIT	DISAGGREGATE BY: Location, date and type of organisation												
Number of organisations / groups / enterprises	Geographic Location					Activity Title		Date	Women	Men	N/A	Subtotal	
	Makueni	Kitui				Field monitoring visit Mwiwe, Mukuyuni, Mbitini and Sio and Tagho dairy businesses to monitor uptake of AVCD		July			5	5	
	Makueni					Makueni county Dairy stakeholders forum		July			17	17	
	Makueni					Supported linkages between Musoni limited and 4 dairy cooperatives		August			4	4	
	Taita Taveta					Facilitated the development of marketing and business plans for Mwatate milk traders		September			1	1	
	Makueni	Taita Taveta				Facilitated the development and implementation of the traders own quality assurance platform		September			4	4	
	Marsabit					Youth groups trained and linked to YEF and WEF		Jul-Sept			6	6	
	Isiolo					Youth groups trained and linked to YEF and WEF		Jul-Sept			5	5	
	Elgeyo Marakwet	Busia	Kitui	Makueni	Siaya	Tharaka Nithi	25 seed banks established		Jul-Sept			25	25
	Elgeyo Marakwet	Busia	Kitui	Makueni	Siaya	Tharaka Nithi	Development of major collection centres (1/county)		Jul-Sept			6	6
Totals											73	73	

Results:

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
	Achieved			Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A
Women (W), Men (M), Not applicable (N/A)			0			182			357			29			73			250			430
Bomet									0			0			0			4			0
Bungoma									12			0			0			5			12
Busia									15			2			5			12			20
Elgeyo Marakwet									38			0			6			24			44
Garissa									0			2			0			2			0
Homa Bay									13			2			0			11			13
Isiolo									0			2			5			2			5
Kisumu									3			2			0			8			3
Kitui									6			2			7			8			13
Makueni									23			2			31			6			54
Marsabit									0			2			6			2			6
Meru									74			0			0			55			74
Migori									9			2			0			9			9
Nakuru									0			0			0			0			0
Nandi									111			0			0			44			111
Siaya									4			2			5			7			9
Taita Taveta									8			2			3			8			11
Tharaka Nithi									0			0			5			1			5
Turkana									0			2			0			2			0
Uasin Gichu									41			0			0			31			41
Vihiga									0			2			0			6			0
Wajir									0			3			0			3			0

INDICATOR TITLE:		Value of new private sector capital investment in the agriculture sector or food chain leveraged by Feed the Future implementation (RAA)																			
INDICATOR NUMBER:		EG. 3.2-22																			
UNIT		DISAGGREGATE BY: Location and date																			
Value of investment (USD \$)	Geographic Location					Activity Title					Date	Women	Men	N/A	Subtotal						
	Nandi	Meru				Private sector investment in seed storage					September			8,836	8,836						
	Nandi	Elgeyo Marakwet	Uasin Gishu			Value of Private sector investment					September			20,843	20,843						
	Elgeyo Marakwet	Kitui	Siaya	Busia		Increased production has led to establishment of 12 aggregation centres					Jul-Sept			30,000	30,000						
	Totals													59,679	59,679						
Results:																					
Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
				Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A
Sex: Women (W), Men (M), Not applicable (N/A)			0			24,657			68,932			101,946			59,679			382,768			128,611
Bomet								9,477			0			0				0			9,477
Bungoma								0			0			0				0			0
Busia								0			12,168			7,500				41,148			7,500
Elgeyo Marakwet								8,027			4,688			8,064				13,751			16,091
Garissa								11,770			0			0				5,000			11,770
Homa Bay								0			8,410			0				33,640			0
Isiolo								0			0			0				0			0
Kisumu								0			8,410			0				33,640			0
Kitui								0			12,160			7,500				41,140			7,500
Makueni								2,850			12,160			0				41,140			2,850
Marsabit								11,317			0			0				5,000			11,317
Meru								0			938			23,300				6,251			23,300
Migori								0			8,410			0				33,640			0
Nakuru								0			0			0				0			0
Nandi								16,038			938			4,445				6,251			20,483
Siaya								0			12,160			7,500				41,140			7,500
Taita Taveta								1,000			8,410			0				33,640			1,000
Tharaka Nithi								0			3,750			0				7,500			0
Turkana								0			0			0				0			0
Uasin Gichu								8,453			934			1,370				6,247			9,823
Vihiga								0			8,410			0				33,640			0
Wajir								0			0			0				0			0

INDICATOR TITLE: Number of households benefiting directly from USG interventions (RAA)												
INDICATOR NUMBER: EG.3-1 <i>N.B. Figures are not representative of the whole beneficiary population - they are activity-based recordings (includes double-counting)</i>												
UNIT	DISAGGREGATE BY: Location, activity and date (FTFMS breakdown by 'new' and 'continuing', not shown here)											
	Geographic Location				Activity Title	Date	Women	Men	Households	Subtotal		
Number of individuals	Garissa	Wajir			Nutrition professional training	September			1,207	1,207		
	Wajir				Community agrinutrition trainings	September			902	902		
	Marsabit				Business Development Skills	September			291	291		
	Bungoma	Busia	Homa Bay	Migori	Farmers who have received OFSP planting materials, people trained AS tot Nutrition and TOT agriculture	Jul-Sept			2,710	2,710		
	Elgeyo Marakwet	Meru			Farmer training	July			906	906		
	Nandi	Meru	Elgeyo Marakwet		Farmers planting certified seed	September			4,609	4,609		
	Meru				Farmers planting seed multiplier seed	September			258	258		
	Busia	Homa Bay	Kisumu	Makueni	Migori	Implementation of Fixed Time AI	Jul-Sept			1,207	1,207	
	Siaya	Taita Taveta	Vihiga			Implementation of ECF vaccination	Jul-Sept			180	180	
	Homa Bay	Kisumu	Makueni	Siaya	Taita Taveta	Vihiga	Improved fodder and feed technologies	Jul-Sept			16,538	16,538
	Busia	Homa Bay	Kitui	Kisumu			Training of community health extension workers on Agri-nutrition to equip them with knowledge on applied agri-nutrition.	Jul-Sept			647	647
	Makueni	Migori	Taita Taveta	Vihiga			Community nutrition events	Jul-Sept			522	522
	Busia	Kisumu	Taita Taveta				Households reached through community nutrition activities	Aug-Sept			5,522	5,522
	Elgeyo Marakwet	Makueni	Tharaka Nithi				Agribusiness, marketing and group management	Aug-Sept			881	881
	Siaya	Busia	Kitui	Elgeyo Marakwet			TOTs on child health and nutrition and DTCS	Aug-Sept			725	725
	Elgeyo Marakwet	Makueni	Tharaka Nithi								37,105	37,105
	Totals											

Results:																			
Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target		FY 2017 Achieved	
	Achieved			Achieved			Achieved			Target			Achieved			Target		Achieved	
	W	M	HH	W	M	HH	W	M	HH	W	M	HH	W	M	HH	W	M	HH	
Households (HH)						49,970													
Bomet						0													
Bungoma						2,111													
Busia						8,785													
Elgeyo Marakwet						1,339													
Garissa						1,088													
Homa Bay						3,775													
Isiolo						1,942													
Kisumu						201													
Kitui						3,275													
Makueni						5,184													
Marsabit						1,724													
Meru						3,185													
Migori						2,649													
Nakuru						0													
Nandi						608													
Siaya						6,888													
Taita Taveta						134													
Tharaka Nithi						1,874													
Turkana						1,583													
Uasin Gichu						352													
Vihiga						1,369													
Wajir						1,904													

INDICATOR TITLE: Number of firms receiving USG-funded technical assistance for improving business performance (O)											
INDICATOR NUMBER: EG. 5.2-1											
UNIT	DISAGGREGATE BY: Location, event and date										
	Geographic Location					Activity Title	Date	Women	Men	N/A	Subtotal
Number of firms	Makueni					Sixteen (16) dairy CIGs received technical support on Brachiaria nursery establishment for multiplication and distribution to affiliated farmers	February			16	16
	Taita Taveta					One (1) dairy cooperative (Maziwa Taita) received technical assistance on the benefit of ECF vaccination and FTAI as part of innovations in AVCD dairy	March			1	1
	Taita Taveta					Two (2) agrovets (Pamtech and Lomastar agrovets) continued to receive technical support from student consultants on the roll-out of agent network model	Jan-Mar			2	2
	Makueni		Taita Taveta			Compliance to milk quality standards training of seven(7) dairy cooperatives (Kathonzweni, Mukuyuni, Kalawa, Kibwezi, Kilungu and Kikima on strategies to improve effecinecy in	May			7	7
	Makueni					ANM training on agrovet retail management and distribution using ANM and business simulation in 5 dairy cooperatives (Kathonzweni, Mukuyuni, Kikima, Mbitini and Maakiou)	June			5	5
	Busia	Homa Bay	Kisumu	Migori	Siaya	Connecting farmers to market opportunities by strengthening the milk supply chain through efficient milk collection system	August			25	25
	Busia	Homa Bay	Kisumu	Migori	Siaya	Setting up agro-vet stores	August			2	2
	Elgeyo Marakwet (representative across all cou					Private sector engagement - GTIL, Stockman Rosen, NORDA	Jul-Sept			3	3
	Totals										61

Results:

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
	Achieved			Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A
Sex: Women (W), Men (M), Not applicable (N/A)			0			N/A			48			75			61			320			109
Bomet									0			0			0			2			0
Bungoma									0			0			0			0			0
Busia									20			10			4			40			24
Elgeyo Marakwet									0			5			3			22			3
Garissa									2			0			0			2			2
Homa Bay									1			5			5			20			6
Isiolo									2			0			0			2			2
Kisumu									2			5			5			20			7
Kitui									2			10			3			40			5
Makueni									2			10			19			40			21
Marsabit									2			0			0			2			2
Meru									0			0			0			2			0
Migori									1			5			5			20			6
Nakuru									0			0			0			0			0
Nandi									0			0			0			2			0
Siaya									11			29			5			40			16
Taita Taveta									3			5			7			20			10
Tharaka Nithi									0			5			0			20			0
Turkana									0			0			0			2			0
Uasin Gichu									0			0			0			2			0

INDICATOR TITLE: Number of people using climate information or implementing risk-reducing actions to improve resilience to climate change as supported by USG assistance (O)							
INDICATOR NUMBER: EG. 11-6 <small>N.B. Figures are not representative of the whole beneficiary population - they are activity-based recordings (linked to EG. 3.2-17)</small>							
UNIT	DISAGGREGATE BY: Location, date and gender						
Number of individuals	Geographic Location	Activity Title	Date	Women	Men	N/A	Subtotal
	Siaya	Crop Genetics (improved DTC varieties)	Aug-Sept	4,515	2,029		6544
	Busia	Crop Genetics (improved DTC varieties)	Aug-Sept	2,658	2,880		5538
	Elgeyo Marakwet	Crop Genetics (improved DTC varieties)	Aug-Sept	245	157		402
	Bungoma	Crop Genetics (improved OFSP varieties)	Jul-Sept	1,054	764		1818
	Busia	Crop Genetics (improved OFSP varieties)	Jul-Sept	156	71		227
	Homa Bay	Crop Genetics (improved OFSP varieties)	Jul-Sept	66	26		92
	Migori	Crop Genetics (improved OFSP varieties)	Jul-Sept	173	65		238
	Totals				8,867	5,992	

Results:																							
Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved				
	Achieved			Achieved			Achieved			Target			Achieved			Target			Achieved				
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	Total	W	M
Sex: Women (W), Men (M), Not applicable (N/A)	0	0		N/A	N/A		28,449	16,761		14,545	10,667		8,867	5,992		37,278	31,496	68,774	37,316	22,753	60,069		
Bomet							0	0		0	0		0	0		0	0	0	0	0	0		
Bungoma							1,284	861		2,500	1,000		1,054	764		5,000	2,165	7,165	2,338	1,625	3,963		
Busia							4,209	2,959		2,653	1,787		2,814	2,951		7,118	5,311	12,429	7,023	5,910	12,933		
Elgeyo Marakwet							606	1,117		636	780		245	157		2,550	3,117	5,667	851	1,274	2,125		
Garissa							0	0		0	0		0	0		0	0	0	0	0	0		
Homa Bay							3,965	2,650		2,517	1,007		66	26		5,068	2,194	7,262	4,031	2,676	6,707		
Isiolo							0	0		788	962		0	0		1,688	2,062	3,750	0	0	0		
Kisumu							0	0		17	7		0	0		68	30	98	0	0	0		
Kitui							5,783	2,139		653	787		0	0		2,618	3,146	5,764	5,783	2,139	7,922		
Makueni							5,485	1,930		653	787		0	0		2,618	3,146	5,764	5,485	1,930	7,415		
Marsabit							0	0		788	962		0	0		1,688	2,062	3,750	0	0	0		
Meru							0	0		0	0		0	0		0	0	0	0	0	0		
Migori							1,052	709		2,017	1,007		173	65		3,558	1,944	5,502	1,225	774	1,999		
Nakuru							0	0		0	0		0	0		0	0	0	0	0	0		
Nandi							0	0		0	0		0	0		0	0	0	0	0	0		
Siaya							3,892	2,385		653	787		4,515	2,029		2,618	3,145	5,763	8,407	4,414	12,821		
Taita Taveta							0	0		17	7		0	0		68	29	97	0	0	0		
Tharaka Nithi							2,173	2,011		636	780		0	0		2,550	3,116	5,666	2,173	2,011	4,184		
Turkana							0	0		0	0		0	0		0	0	0	0	0	0		
Uasin Gichu							0	0		0	0		0	0		0	0	0	0	0	0		
Vihiga							0	0		17	7		0	0		68	29	97	0	0	0		
Wajir							0	0		0	0		0	0		0	0	0	0	0	0		

INDICATOR TITLE:		Number of children under two years (0-23 months) reached with community-level nutrition interventions through USG-supported programs (RAA)																		
INDICATOR NUMBER:		HL. 9-2																		
UNIT	DISAGGREGATE BY: Location, event, date and gender																			
	Geographic Location					Activity Title					Date	Girls	Boys	Unknown	Subtotal					
Number of children	Busia		Kisumu	Taita Taveta		Number of Children reached with nutrition interventions in the Community					Jul-Sept	266	256		522					
	Elgeyo Marakwet					Children < 2 years reached through community nutrition activities					Aug-Sept	1,040	1,042		2,082					
	Makueni					Children < 2 years reached through community nutrition activities					Aug-Sept	1,464	1,465		2,929					
	Tharaka Nithi					Children < 2 years reached through community nutrition activities					Aug-Sept	1,635	1,637		3,272					
	Garissa					Agri-nutrition training to care givers					Jul-Sept	623	828		1,451					
	Wajir					Agri-nutrition training to care givers					Jul-Sept	1,415	1,123		2,538					
	Totals											6,443	6,351		12,794					

Results:

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
				Achieved			Achieved			Target			Achieved			Target			Achieved		
	G	B	N/A	G	B	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	Total	W	M	Total
Sex: Women (W), Men (M), Not applicable (N/A)	0	0		N/A	N/A		20,769	18,322		3,964	2,705		6,443	6,351		10,619	7,773	18,392	27,212	24,673	51,885
Bomet							0	0		0	0		0	0		0	0	0	0	0	0
Bungoma							1,785	1,191		560	300		0	0		1,610	1,080	2,690	1,785	1,191	2,976
Busia							5,289	4,610		613	332		36	34		1,815	1,204	3,019	5,325	4,644	9,969
Elgeyo Marakwet							6	6		48	44		1,040	1,042		166	150	316	1,046	1,048	2,094
Garissa							80	74		350	350		623	828		350	350	700	703	902	1,605
Homa Bay							2,645	1,814		590	313		28	26		1,724	1,129	2,853	2,673	1,840	4,513
Isiolo							989	1,347		150	150		0	0		600	600	1,200	989	1,347	2,336
Kisumu							28	29		30	13		94	91		114	49	163	122	120	242
Kitui							2,090	2,098		53	32		53	50		206	124	330	2,143	2,148	4,291
Makueni							8	8		53	32		1,464	1,465		206	124	330	1,472	1,473	2,945
Marsabit							2,986	2,871		175	175		0	0		525	525	1,050	2,986	2,871	5,857
Meru							0	0		0	0		0	0		0	0	0	0	0	0
Migori							1,426	950		630	313		0	0		1,764	1,129	2,893	1,426	950	2,376
Nakuru							0	0		0	0		0	0		0	0	0	0	0	0
Nandi							42	42		25	25		0	0		75	75	150	42	42	84
Siaya							674	703		53	32		35	33		206	124	330	709	736	1,445
Taita Taveta							3	3		30	13		20	22		114	49	163	23	25	48
Tharaka Nithi							1,602	1,603		23	19		1,635	1,637		92	75	167	3,237	3,240	6,477
Turkana							0	0		175	175		0	0		525	525	1,050	0	0	0
Uasin Gichu							13	14		25	25		0	0		62	63	125	13	14	27
Vihiga							393	408		31	12		0	0		115	48	163	393	408	801
Wajir							710	551		350	350		1,415	1,123		350	350	700	2,125	1,674	3,799

INDICATOR TITLE:		Number of individuals receiving nutrition-related professional training through USG-supported programs (RAA)																
INDICATOR NUMBER:		HL 9-4																
UNIT		DISAGGREGATE BY: Location, event, date and gender (FTFMS includes 'type of training')																
Number of individuals	Geographic Location				Activity Title				Date	Women	Men	N/A	Subtotal					
	Wajir				Training of CHVs and CHEWS				September	261	344		605					
	Garissa				Training of CHVs and CHEWS				September	424	178		602					
	Busia	Kisumu	Taita	Taveta	Training of community health extension workers on Agri-nutrition to equip				Jul-Sept	178	469		647					
	Bungoma	Busia	Homa Bay	Migori	TOT on Agri-nutrition				September	24	29		53					
	Elgeyo Marakwet				TOTs on child health and nutrition and DTCs				Aug-Sept	177	176		353					
	Makueni				TOTs on child health and nutrition and DTCs				Aug-Sept	6	14		20					
	Tharaka Nithi				TOTs on child health and nutrition and DTCs				Aug-Sept	249	103		352					
	Totals									1,319	1,313		2,632					

Results:

Blank for target means information not yet available	Baseline			Results in YR 16			Results in prior periods YR 17 (30-Jun-17)			This reporting period (30-Sept-17)						FY 2017 Target			FY 2017 Achieved		
				Achieved			Achieved			Target			Achieved			Target			Achieved		
	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	N/A	W	M	Total	W	M	Total
Sex: Women (W), Men (M), Not applicable (N/A)	0	0		N/A	N/A		3,378	1,899		1,128	582		1,319	1,313		5,036	2,602	7,638	4,697	3,212	7,909
Bomet						0	0		0	0		0	0		0	0	0	0	0	0	0
Bungoma						23	2		15	10		9	6		30	20	50	32	8	40	
Busia						698	450		163	89		41	80		624	340	964	739	530	1,269	
Elgeyo Marakwet						11	6		107	63		177	176		428	255	683	188	182	370	
Garissa						80	88		40	0		424	178		210	0	210	504	266	770	
Homa Bay						194	51		58	29		4	9		204	95	299	198	60	258	
Isiolo						39	101		0	0		0	0		158	132	290	39	101	140	
Kisumu						75	56		43	19		67	203		174	75	249	142	259	401	
Kitui						531	142		148	80		0	0		594	322	916	531	142	673	
Makueni						200	103		148	80		6	14		594	322	916	206	117	323	
Marsabit						60	0		0	0		0	0		210	0	210	60	0	60	
Meru						0	0		0	0		0	0		0	0	0	0	0	0	
Migori						20	3		59	29		7	6		205	95	300	27	9	36	
Nakuru						0	0		0	0		0	0		0	0	0	0	0	0	
Nandi						13	2		2	2		0	0		8	8	16	13	2	15	
Siaya						598	324		149	80		0	0		595	322	917	598	324	922	
Taita Taveta						0	0		44	19		74	194		175	75	250	74	194	268	
Tharaka Nithi						412	400		105	61		249	103		419	247	666	661	503	1,164	
Turkana						26	10		0	0		0	0		180	0	180	26	10	36	
Uasin Gichu						15	4		2	2		0	0		8	8	16	15	4	19	
Vihiga						191	45		45	19		0	0		180	76	256	191	45	236	
Wajir						192	112		0	0		261	344		40	210	250	453	456	909	

4 CONSTRAINTS AND OPPORTUNITIES

4.1 Opportunities

Over the last two years, several opportunities have arisen, in the different value chain components, due to both the work of the project and lessons learnt. In the dairy value chain, there are good opportunities for farmers to pursue commercial forage production as an economic venture. The project is considering co-investing with various groups interested in such ventures and will be supporting such initiatives through business development services and part financing of infrastructure for bulking produce. In breeding, there are opportunities for crowding in of suppliers of ECF vaccine that has been occasioned by introduction of the vaccine on these otherwise non-traditional dairy areas. With increased local availability of the vaccine and increased number of trained vaccinators accelerated breeding will be protected against the killer ECF diseases that is responsible for up to 80% of calf mortality.

In the potato value chain youth are being engaged to exploit the diverse opportunities along the potato value chain, such as production of rooted potato cuttings or early general seed from rooted cuttings that does not require large expanses of land; and production of processed potato products using locally made equipment for local kiosks, street food and markets. In OFSP the project has overcome the perception of poor taste and texture through cooking demonstrations. This has resulted in several traders taking up the opportunity of including OFSP as one of their main trading product. In addition, the increasing demand of vines for improved varieties has created a business opportunity for some farmers to carry out seed/vine multiplication as a business.

4.2 Constraints

During the reporting, the main constraints across all the value chains that affected the performance of the project, was the drought situation. In the A3, the rainfall was below normal in almost all counties throughout the year. The impact of drought is being analysed but there are indications that range lands have been seriously degraded, hence serious lack of pastures and loss of livestock. Due to the poor regeneration of forage and recharges of water sources there has been continued abnormal migration of pastoralists in search of pasture and water and flare up of resource based conflicts. In Marsabit, inter-ethnic conflict in Ethiopia threatened to spill over into the county and forced movement restriction along the Kenya-Ethiopia border. The inter-ethnic conflict in Ethiopia also affected Wajir County forcing some pastoralists from the Ethiopia border crossing over to Wajir north thus exacerbating the dire water and pasture situation in the County. In Turkana, some pastoralists migrated in search of pastures and water for their livestock to the bordering sub-county i.e. Kibish and into Uganda for those living in near the border sub-counties.

In SA2, the long rains (March to July) was also far below normal causing serious reduction in crop yield and problems in establishment of feed and fodder. However, for drought tolerant crops, while yields were low, most farmers received enough crop for consumption and even some surplus, hence proving to be the source of food security. In HR1, rainfall was below during the short rains of October to December 2016, which affected the activities of root crops. However, farmers obtained reasonable yields for most drought tolerant crops again proving the role of these crops for food security.

In the dairy value chain, cattle rustling is rampant along the Kericho-Kisumu border, which is discouraged rearing of livestock in general. Consequently, farmers rearing indigenous cattle have little motivation to invest in the breeding initiative promoted by the program. Another constraint in dairy value chain development is the low number of competent technical staff. Either due to devolution or low government investment in livestock functions, there are very few competent technical staff in animal health and animal nutrition at County level, slowing down implementation of breeding and feed and fodder activities.

In drought tolerant crops inter community conflict in Elgeyo Marakweti rendered two sub-counties, inaccessible most of the year. However, the project beefed up activities in other counties to compensate for this constraint. In addition to drought, Fall Army Worm (FAW) invasion affected about 60% of sorghum farms in Siaya and Busia, but quick action from the project in collaboration with county governments and other local leaders averted the damage by spraying the sorghum fields with recommended insecticides. As the fall army worm, has become a resident pest, farmers training in control of the pest will be sustained to try and eradicate it completely.

Another constraint in this value chain is lack of threshers and shellers. With increased production, farmers are experiencing serious constraint in threshing and shelling finger millets, millet, sorghum and ground nuts, which are expensive and unaffordable to farmers.

In potatoes value chain, one of the constraints during the reporting period was that commercial seed multipliers were not able to supply the quantity and variety ordered by VPAs. Even large seed potato producing farms such as Kisima were not able to supply the demand of quality seed from Meru County. In addition, there was not enough certified seed as starter material for quality seed by the decentralized seed multipliers. To resolve this constraint the project has started the process of establishing seed units within the potato marketing cooperatives societies and for them to become licensed seed merchants with KEPHIS. In addition, the project is introducing the technology of multiplication of seed from rooted cuttings as an alternative to certified seed.

5 PERFORMANCE MONITORING

In the AVD Program, performance is monitored through; the computerized monitoring and evaluation system, field visits, and annual survey. A computer program for the data analysis, presentation, and screen-shots for data captured in the continuous monitoring is being worked on by the ILRI research management group. During the reporting period, continuous monitoring was carried out by capturing data in ODK and transferring to the M&E platform. For purposes of continuous monitoring, all beneficiaries of the AVCD program are issued with bar-coded electronic cards. During this period issuing of the beneficiary identifier cards was affected by the political campaigns for the general elections, for fear of being mistaken with registration of voters.

Generally, all value chain components are making remarkable progress in changing lives of the targeted beneficiaries. In fact, there are indications that the reporting system is not capturing the impact on the ground very well. In several cases the project has completely changed the lives of individuals, as indicated in the success stories, and in other cases the whole village. The demand of technologies and other services from the county governments, farmers and private sector organisations is overwhelming in all value chains. From the field visit, it has also been observed that it will be essential to track all beneficiaries under specific value chains to ensure they get the full range of support required for sustainable change. It will also be necessary to focus more on activities to improve market access through aggregation, value addition and linkage to buyers and include labour saving mechanization tools in the third year of the project. There are a few areas of improvement such as, implementation of value chain approach; tracking the impact pathways; layering technical training with nutrition messages; and tidying up approaches for technology up scaling that are needed.

Annual surveys to establish the level of achievement for the FtF indicators were conducted for all the value chains. Due to unavoidable circumstances data collection was delayed because all travel to the field was put on hold for almost two months for security reasons. Generally, the findings from the annual survey indicate progress in most indicators.

An internal mid-term review was conducted with the support of consultants. The aim of the review was to enable project managers to assess progress in implementation; to identify challenges and to share lessons learned during implementation. Findings from the review provided a basis for distilling lessons to improve the efficiency and effectiveness of the project in the remaining implementation period.

6 PROGRESS IN NUTRITION

In the second year, nutrition interventions continued to be implemented in line with the AVCD nutrition strategy that was developed in the first year. The strategy clearly defines the nutrition impact pathways (production, income, and women's empowerment) that are the focus of the value chains. The nutrition activities are integrated and are leveraging the production activities such that nutrition beneficiaries are the households already engaging in production of the value chains. To translate these pathways into improved nutrition for women and children, Nutrition Social Behaviour Change Communication (SBCC) has been integrated along the value chain activities. Formative assessments have been done to inform the SBCC approaches that will be applied in the third year in the various contexts of AVCD operation sites. An SBCC Strategy development and validation workshop with stakeholders is also planned for the first quarter of third year.

Nutrition implementation has focused on multisector collaboration and leverage on existing structures of the national and county governments' line ministries mainly Agriculture, Health, Education among others. In the past year, the program has been involved in nutrition coordination meetings at County and national level as a member of the technical team and has supported development of government policies, frameworks, guidelines among other key documents. The program has

participated and supported revision of the National Agri-nutrition Resource Manual that will guide Agri-nutrition implementation in the country. The revised manual has been used as a blue print to develop community level agri-nutrition training manual and dialogue cards that will be used to build capacities of community extension workers who will in turn reach households with agri-nutrition messages. The community agri-nutrition training materials (facilitator's manual and dialogue cards) are being piloted and will be validated in a workshop with stakeholders from all counties that the program is covering in the first quarter of third year. After the validation, they will be used across all the value chains by the government community extension workers. In collaboration with the County and sub-county ministries of Agriculture (home economics), Health (nutritionists and Public Health officers) and Education (ECD coordinators), Agri-nutrition TOT trainings have been conducted in the mandate counties. These TOTs have then cascaded the trainings down to the community extension workers, in this case the ward agricultural officers and the community health volunteers who are mandated to reach communities.

In the dairy value chain, ToT trainings on applied agri-nutrition were also intensified in year two, where the trainings were cascaded to the CHVs, Ward Agriculture officers and mother support group members across 7 counties reaching key stakeholders in the MoH and MoA. A total of 1,757 (432 male, 1,325 female) were trained on the agri-nutrition module. The trained ToTs engaged with key stakeholders within the communities to reach a total of 4,665 children under two years. The Dairy value chain also collaborated with the MoreMilk Project to conduct a formative research using a combination of rapid ethnographic methods, barrier and market analysis; the findings will inform the nutrition SBCC strategy.

The drought tolerant crops value chain trained 3,518 Agri-nutrition TOTs. The trainees, mostly Community Health Volunteers (CHVs), in turn sensitized over 27,000 households on the nutritional importance of drought tolerant crops products for child and maternal health. Through sensitization of households the CHVs reached 18,497 and 8,823 children under the age of 2 years once and twice, respectively. On the other hand, a new partnership with a sorghum and millets processing company- Signature Food company, was developed. As a result of this partnership two new products have been rolled out in the market – a brown ugali flour product which is a blend of red sorghum and maize; and an Uji Mix product – a blend of pearl millet and finger millet flours. This followed lots of technical support from ICRISAT in product formulation and sourcing of grain. Further, partnership with Nairobi Technical Training Institute was initiated to test and adapt different drought tolerant crops recipes and products before widespread dissemination and commercialization.

During the reporting period, the roots crops value chain conducted Agri-nutrition TOT training using OFSP as the entry point crop, for a total of 136 county government staff who in turn trained 661 community health volunteers (CHVs). These CHVs cascaded the training to pregnant and breastfeeding women as well as child care givers of children less than 2 years at community level. A total of 12,932 children under 2 years have been reached exceeding the year 2 target by 20%. Besides the nutrition sensitization, these women also received OFSP vines for own farm production. Further, 124 lead community health workers participated in cooking demonstration of various commonly eaten foods that incorporate OFSP to promote it as part of family meals, a gap that was identified at baseline. Guiding cooking principles have been compiled in a recipe-type of a booklet to guide community training events. The guide recipes help to reduce negative perception that OFSP is too soft/moist/watery etc. by use of proper and diverse cooking methods. At the same reporting period, a follow up (from year 1) Knowledge Attitude and Practices (KAP) assessment on production consumption and marketing of OFSP has been conducted (report yet to be finalized) to appraise the behaviours that are changing along the value chain. On the other hand, the potato value chain begun its nutrition program in year 2, training 51 county and sub-county key staff in the North Rift counties to train community health volunteers (CHVs) in nutrition messaging. In year 3, the CHVs will deliver nutrition messages to potato farmers while Ward agricultural officers (WAOs) will interact with the same farming households to support them to apply improved technologies, specifically hilling, to improve productivity of potato.

7 PROGRESS ON GENDER

Gender mainstreaming has been well factored across all value chains of the AVCD program in the reporting period. The dairy value chain organized a workshop for project field staff from partner organizations and the county government with the aim of exposing frontline project staff to possible gender biases and equip them with approaches to enhance gender inclusion in project activities. Trained staff have subsequently applied gender inclusion approaches in their field activities like farmer trainings and now data on training show balanced numbers of men and women in attendance. The dairy value chain also identified women-led/dominated groups involved in production and informal sale of fodder. These groups have been supported with forage interventions; the *Brachiaria* grass that was planted by majority of members of these groups is now ready for harvesting. One of these groups has been supported with implements for bailing of hay and plans are underway to organize them to bulk, store and collectively market it. This support will have significant

contribution to the income and women's empowerment nutrition impact pathway, therefore improving the nutritional status of women and children in the project sites. Additionally, in all exchange visits and trainings the project team ensured that women farmers, employees and managers were represented.

The drought tolerant crops VC gender strategy deliberately targeted women and youth groups with assistance to empower them to improve their participation in drought tolerant crops value chain production activities. For example, Motisha women group from Teso South Sub-county, Busia County, with 15 women members 3 of which are youth, were assisted to acquire high quality seed (to plant at least $\frac{1}{4}$ acre of sorghum and finger millet - with one member planting 7 acres). The women were trained in GAPs, agri-business and improved postharvest handling and storage techniques as well as provided with multi-purpose thresher for finger millet and sorghum. These threshers have saved significant female energy expenditure (workload) and time; these saved energy and time is expected to be directed towards care of themselves and that of children including feeding and utilization of maternal and child health and nutrition services to improve their nutritional status. Farm Africa has also linked them to buyers for their produce. In one season (LRs 2017) the group produced about 74 bags of sorghum and 72 bags of finger millet out of which they sold approximately 60 bags of sorghum and 64 bags of finger millet all valued at Kshs 800,000 (USD 8,000). This will have a significant contribution towards nutrition through the income pathway, in that increased income is expected to be directed towards purchase of diverse nutritious foods and improve the nutritional status of women and children in the households. In year 3 the group will also be trained in value addition and the group's activities will be scaled up to other women and youth groups alongside exchange visits in Busia and Siaya counties.

8 PROGRESS ON YOUTH PARTICIPATION

During this period a rapid assessment to identify challenges and opportunities for engaging the youth in the AVCD program was conducted. Some of the key challenges that emerged included lack of; knowledge on production, productive resources like land, access to finances and markets. The opportunities that were identified included i) provision of services like mechanized labour e.g. in threshing of drought tolerant crops, AI services and bailing hay ii) marketing of the value chain commodities e.g. potatoes, milk iii) value addition of the value chain commodities among others.

The potato value chain engaged with 6 youth groups with a total membership of 73 youth in potato business in Nandi, Elgeyo Marakwet and Uasin Gishu counties. Using the learning farm approach, 198 participants, majority of them youth, participated in four potato production trainings held across the North Rift counties. The youth were later mobilized and identified opportunities along the potato value chain: seed production, ware potato production, storage and marketing, and value addition through processing. Further, the project is securing contracts with three hotels in Eldoret to supply Unica variety for chips. Boma Inn, Poa Place and Sikirwa sampled Unica and are keen to have regular supply. The youth groups received Unica seed to begin production and enter supply agreements with hotels. Additional hotels will be approached following the positive response from these initial hotels.

The dairy value chain supported 33 young farmers in Busia, Siaya and Homa Bay counties to rent 1 acre of land each for production of *Brachiaria* and *Napier grass*. Nine (9) of these young farmers are about to harvest their first crop of *Brachiaria* grass. Assuming a production of 200 bales per harvest from one-acre plot and a local cost of \$2 per bale, the young farmers will be earning approximately \$400 from their commercial plots per harvest or \$1,600 per year. This has had multiple benefits including, creating self-employment for the young farmers, more planting materials' (splits) have become available to distribute to other farmers and more youths are getting inspired to invest in fodder business. For example, the original 9 youths have already encouraged 20 other young people to start planting fodder (giving splits to 12 new farmers). The project is targeting to directly support 60 young farmers to establish commercial fodder plots. Going forward, the young farmers will be provided with business development support. The 60 young farmers will in turn mobilize more young farmers to be trained in fodder business during year 3.

In year 2, the drought tolerant crops value chain has engaged the youth in GAP trainings and have also benefited from shellers and threshers. To be more strategic in engaging the youth in year 3, the drought tolerant crops value chain plans to assess youth needs and preferences along the value chain with the aim to train them and meet their needs including use of smart phone apps to solve drought tolerant crops VC problems. The youth will be engaged in the value chain through youth groups, 4 K clubs or Young farmers' clubs in secondary school. Also, food businesses owned by youth will be used to promote drought tolerant crops food products and youth groups empowered to acquire the threshers and sell threshing services to producers.

9 PROGRESS ON ENVIRONMENTAL MITIGATION AND MONITORING

Environmental mitigation is part parcel of the activities in all the value chain components. In the livestock value chain, rangelands management activities are meant for conservation and management of natural resources to reduce degradation of natural resources. As indicated earlier in this report, good progress has been made in introducing the concepts of grazing management through community planning.

The drought tolerant crops are climate smart in the sense that they require less rain and improve the soil fertility by fixing nitrogen. Furthermore, farmers were provided with seed of more than one drought tolerant crops e.g. sorghum and green grams or cowpea to plant to reduce risks of crop failure and enhance their resilience. In addition, inter-cropping of legumes and cereals, crop rotation, early planting, micro-dosing, timely weeding and thinning enhanced production resilience through sustenance of the soil water and fertility levels.

As an environmental mitigation strategy, there are plans by dairy and drought tolerant crop VCs to integrate livestock and drought tolerant crops technologies for better resilience in the smallholder production system. Crop residues from finger millet will be made into hay for animal feeding during the dry period. Some of the dairy value chain forages such as *Brachiaria* grass have been shown to play a role in carbon sequestration and thus reducing greenhouse gas emission.

In the potato value chain, the Unica potato seed variety is now available and is being distributed to farmers to experience its robustness. This variety is tolerant to heat and water stress, making Unica a climate smart variety, providing farmers with more flexible options to cultivate potato. Unica produces reasonable yields in seasons of unreliable rain when many other varieties experience crop failure. It can also be grown in warmer agro-ecologies and lower altitudes outside of the traditional cooler, highland areas where potato is largely restricted to, allowing farmers in such regions to diversify crop production. Unica is also becoming appreciated by markets, thus is a variety suiting farmer and market needs. Similarly, progress in winning farmers to adopt crop diversity through inclusion of OFSP, a more resilient crop than most staples cultivated in the project sites offers a food security safety net especially during dry weather when most staples yield sub-optimally.

10 PROGRESS ON LINKS TO OTHER USAID PROGRAMS

During quarter the AVCD program worked closely with all relevant USAID programs in Kenya. The dairy and drought tolerant crops components collaborated with the USAID KAVES in supporting dairy cooperatives through trainings and promotion of production, consumption and marketing of sorghum in HR1 region. The trainings included business development support, improved animal husbandry and forages management that led to increased farm productivity and more supply specific dairy cooperatives. To support this business initiative, USAID/KAVES project purchased fridges used at the distribution outlets that have been opened by the cooperative to enlarge their market. The AVCD dairy component complemented efforts of KAVES by offering training on compliance and retail distribution innovation while KAVES supported the dairy to remodel the milk outlet. Furthermore, the drought tolerant value chain continued to work with USAID KAVES who promote sorghum production innovations including PIC bags and sorghum threshers. In addition, USAID KAVES partner, Community Action for Rural Development (CARD) also has an SME which has promised to buy grain sorghum from drought tolerant crops farmers in the future.

AVCD market actors in SA2 involved in milk processing also benefitted from a two-day training on business resource management. The training was organized by Partners in Food Solutions (PFS) in collaboration with a U.S. based project named Solutions for African Food Enterprises (SAFE) with funding from USAID. Following a USAID visit to HR1 last year, USAID KIWASH sanitation project cluster, was adopted as a drought tolerant crops VC cluster in Q3 and Q4. Thus, more than 1000 farmers participated in a farmers' field day, planted various drought tolerant crops and were trained on postharvest handling and storage in Q4.

Additionally, through the AVCD quarterly multi-stakeholder breakfast meetings, the OFSP value chain coordinate the working group dubbed 'blending group', which brings together various organizations which include USAID funded projects. This working group focuses on how to enhance market visibility of nutritious yet not so preferred food crops which include OFSP, millets and sorghum. The working group continuously presents its progress to the AVCD chief of party.

AVCD livestock component continue to identify areas to layer, integrate and sequence with other USAID programs in all its target counties. Specifically, the project utilized PREG learning visits, monthly meetings, and bilateral meetings with partners. In Isiolo, AVCD LC layered with K-Rapid in implementation of natural resource management activities implemented with NRT at Nasulu and Oldonyiro community conservancies. In Turkana, AVCD-LC layered with K-RAPID at Lokangae fodder site. As AVCD-LC provided technical training on fodder production process, K-RAPID supported

facilitation of the land preparation process and worked on fencing off the site. The project has been actively participating in PREG monthly meetings, joint PREG planning workshops and joint PREG visits. These practices have provided platform for AVCD LC to update on the progress and identification of areas for layering, sequencing and integration and further increase coordination among the PREG partners.

11 PROGRESS ON LINKS WITH GOK AGENCIES

The dairy component of the AVCD program continues to work closely with the departments of livestock production and veterinary services at the county directorate of livestock across all the 9 counties. During the second year of project implementation, the county government of Migori purchased AI kits for AI technicians that had been trained by the AVCD program. The implementation of activities by the AVCD program has also influenced action by some county governments. In Kitui County, the government used the outcome of FEAST exercise to identify forages that they purchased and made available to farmers. This has complemented the forage work undertaken in Kitui County by the AVCD program. The county animal health and livestock production personnel have also remained at the center of AVCD activity implementation – training farmers, supervising dissemination of various improved forages and coordinating the breeding and ECF vaccination activities.

The nutrition component of the AVCD Dairy value chain also continues to collaborate with the Ministry of Health and Ministry of Agriculture in the implementation of nutrition activities at the county level and cascading these activities to the communities. Sub County nutritionists and Sub County agriculture officers provided oversight to CHVs and extension officers who played a pivotal role in actualizing the nutrition objectives through the sensitization of community members on agri-nutrition.

Under the drought tolerant crops component activities, 6 county governments of Kitui, Tharaka Nithi, Makueni, Elgeyo-Marakwet Siaya and Busia mobilized almost 100 ward agricultural officers (WAOs), 16 Sub-county Agricultural officers (SCAOs), 16 Sub-county crop officers (SCCOs) to offer extension services and distribute drought tolerant crops seed in short rains of 2016 and long rains of 2017 to 46,000 farmers in 50 wards spreading across 16 sub-counties. Some county governments especially in Siaya and Elgeyo Marakwet have constructed grain aggregation centres for use by producer-marketing groups. This partnership is strong and should be sustained for future activities.

During the reporting, 138 seed producers (50% women) from Siaya, Busia and Kitui visited KALRO seed units in Alupe and Katumani to be trained and sensitized on benefits as well as the production of high quality drought tolerant crops seeds. The farmers, giving feedback, were excited not only to apply new techniques they had learnt on seed production but also on grain production. KALRO Katumani continue to be an important drought tolerant crops VC partner in access of improved seed.

North Rift counties continue to provide leadership to the potato value chain activities and interact with project beneficiaries. The counties took leadership for planning and implementing learning farms and in supporting establishment of potato cooperatives. County WAOs lead in seed distribution activities to raise awareness of new varieties and benefits of quality seed. County offices are leading nutrition messaging activities, and WAOs are collaborating with CHVs to deliver nutrition messages and train the same households in improved potato production technologies. The potato value chain depends significantly on the county governments to lead implementation of activities. The potato value chain is integrating into county youth programs to support vetted youth groups to engage in potato-related businesses.

Both root crops value chains engage with KEPHIS. The potato value chain is collaborating with KEPHIS to integrate cuttings into certified seed protocols to allow seed merchants to produce certified seed along all stages of production (pre-basic, basic, certified 1 and 2) from cuttings. Lessons learned while implementing the seed systems were shared with KEPHIS during a consultative meeting aiming to strengthen seed/vine certification. Caution was if certification of the OFSP vines would increase the price of planting material, thus rendering them unaffordable to farmers. Jointly with the Kisii University, a concept note that aims to introduce sweetpotato for food security in Kisii and Nyamira Sub-Counties has been developed. This concept note borrows from the activities of AVCD and focuses on dual purpose sweetpotato varieties for silage and the orange fleshed sweetpotato varieties for their beta-carotene.

The project participated in the week-long 2017 Malezi bora event for Homa Bay County. This is a critical annual event organized by the Ministry of Health to promote community/public health education including nutrition. At this event OFSP was integrated in the messages that community and healthcare workers disseminated. During a capacity development evaluation exercise conducted by the nutrition department, county government of Homa Bay, lessons learned in the AVCD project were shared as part of strengthening community based nutrition education in addition to nutrition care provided at the health facility.

AVCD LC worked closely with their respective county and state ministries and agencies. In Marsabit, the project works closely with the World Bank-RPRLP on disease control and market access. Respective County government line departments and ministries are integrated into all project activities where they play technical backstopping and supervisory roles.

The project is implementing a strategy to build the capacity of the County technical staff through trainings, project induction events and facilitate them to implement the activities directly. This facilitation approach has ensured project ownership at the County level and guarantees sustainability of the interventions and models introduced beyond the project period.

The nutrition activities are implemented jointly with the Ministries of Health and Agriculture. These activities include ToT trainings on Agri-nutrition that have been facilitated in collaboration with the two ministries. In the Ministry of Health and the Ministry of Agriculture, the county, sub county and community focal persons, extension workers and community workers have been instrumental in the implementation of program activities. The nutrition activities at the community level such as mother to mother support group activities and community dialogue sessions have also been led by key stakeholders affiliated to the two ministries.

12 SUSTAINABILITY AND EXIT STRATEGY

The main sustainability and exit strategy for the AVCD program is to work closely with relevant County Government Departments to create strong ownership and commitment, and leverage additional financial resources for implementation beyond the life of the program. In the livestock value chain, lack of human capacity in most counties has been a limitation in working with county governments. They're very few livestock officer and range management officers who can implement field activities at sub county level. However, some county governments have recently recruited veterinary officer up to sub county level who can be trained to implement with project staff. Disease surveillance and control activities are therefore being implemented in partnership with the Department of Veterinary Services (DVS) and other key private actors such as agro veterinary drug suppliers, community disease reporters and main stream NGO like VSF Suisse. The DVS has specifically been empowered to take leadership in all the interventions being implemented. Discussions have also been initiated on how to fund some of the activities through the county animal health kitty. These proposals will be reviewed further in the third year of the project.

In the dairy component, the county government of Migori purchased AI kits for AI technicians that had earlier on been trained by the AVCD program. The implementation of activities by the AVCD program has also influenced action by some county governments. In Kitui County, the government used the outcome of FEAST exercise to identify forages that they purchased and made available to farmers. This has complemented the forage work undertaken in Kitui County by the AVCD program. The county animal health and livestock production personnel have also remained at the center of AVCD activity implementation – training farmers, supervising dissemination of various improved forages and coordinating the breeding and ECF vaccination activities.

In the drought tolerant crops WAOs are engaged in monitoring grain and seed production activities in the mandate wards to ensure that GAPs were applied by the producers. In addition, WAOs participate in all Agri-business TOTs and each will be expected to train as many producers as possible

In the root crops value chains, the project is working closely with county government in the establishment of potato cooperative societies in all mandate counties. In addition, a concept note on introduction of dual purposed potatoes has been develop jointly with Kisii University. This concept note borrows from the activities of AVCD and focuses on dual-purpose sweetpotato varieties for silage and the OFSP varieties for their beta-carotene.

13 SUBSEQUENT YEARS'S WORK PLAN

In addition to routine program management, monitoring and evaluation, communication and knowledge management, and coordination activities, the program management secretariat will continue to support the establishment of milk chilling plants; and organize end of project workshops. The value chain components will continue to implement the work plan as detailed in the Annual Work plan and budget on activities as summarized below.

Being the third year of implementation, the project will endeavor to achieve set targets as well as undertaking efforts to ensure sustainability of the project benefits, and strengthening local institutional structures for continued delivery of services. Focus will

also be on market development as this is a key driver of transformation along the value chain. The activities planned for the FY2018 under each value chain and output are summarized here below:

Livestock Value Chains:

- **Output 1.1: Improved market management through co-management model (CMM) facilitating 15 stakeholder forums and supporting 30 LMAs:** In partnership with AHADI, the project will support respective counties to develop legislative frameworks, to enhanced market performance. Under this activity, AHADI will offer its experts to facilitate the finalization of the livestock sales yard bills across the 5 counties, as part of legally anchoring adoption of appropriate market management model.
- **Output 1.2: Enhance market vibrancy by promoting access for 5000 women and youth on business literacy skills and linking them to appropriate financial institutions:** In the third year, the project will continue training of selected women and youth entrepreneurs on business literacy skills, including book keeping and record keeping, as well as mainstreaming nutrition education. In addition, the project will link the trained entrepreneurs to the Government managed development funds that include: Youth Development Fund, Women Development Fund and the Uwezo Fund, as well as other financial institutions, who run appropriate products.
- **Output 1.3: Increase in prevalence and use of market information systems to directly reach 25,000 traders and producers:** The activities planned for the second year have virtually been accomplished and a prototype of mobile based livestock marketing information platform referred to as KAZNET. A prototype mobile data collection application and a related back-end database, task design and delivery, and data analysis web platform has been developed and is operational. The third years' activities will focus on further development to do with additional functionality developed and related work on coordinating stakeholders and development of the necessary institutional frameworks to support sustainable scaling.
- **Output 2.1: Enhanced livestock value chain through improvement in the availability of and access to fodder and forage:** Activities under this output will focus on enhancing governance and management rights for fodder production and range management working in collaboration with NRT, AHADI, TUPADO, the respective county government department and other stakeholders, including PREG partners.
- **Output 2.2: Improved surveillance and control of diseases for increased livestock production and trade:** Five sub-activities that aim to consolidate and scale-up achievements made on disease surveillance and control are planned for the year. In view of the success of this activity, similar approach will be rolled out in all counties.
- **Output 2.3: Improved productivity through better herd management and Innovative Community-Based Breeding (ICBB) of small ruminants working with 5000 producers from 15 markets:** This is an activity that is of long-term in nature, hence the project will continue to promote behaviour change and reorient producers' mind-set towards the management and rearing of animals for improving their incomes and livelihoods. To ensure sustainability of introduced technologies, and to develop the county capacity to scale innovations, a Training of Trainers (ToT) will be implemented for both national, county and private sector partners alongside capacitating the Core Innovation Groups (CIG) already established within each county. Through the ToT, it is anticipated that a larger number of communities will benefit from new knowledge and practices for improving productivity and marketing of their livestock.
- **Output 3.1: Improved accesses to diverse and quality food and change in nutrition related behavior, through increased home consumption of milk with 10% increase among children in 60,000 households' regularly consuming milk throughout the year:** Under the BCC activities in nutrition, the project will promote better hygiene and milk safety, but also selected basic milk value addition technologies, including milk/food preservation methods. In the spirit of layering, sequencing and integration, deliberate effort has been made to collaborate with Kenya RAPID. The key areas that have been identified for partnership include agri-nutrition ToTs at the sub county level, training on milk hygiene and preservation and community nutrition sensitization and behavior change initiatives across actors along the livestock value chain and key actors within Kenya RAPID such as the water committee members.
- **Output 3.2: Improved consumption of nutrient rich foods by women, with a 10% increase in regular consumption of milk and meat by women of childbearing age in 60,000 households:** For this output, the project will reach out to communities to promote the use of maternal and child health care services to increase demand for these services within communities. In addition, the project will sensitize women on the available energy saving technologies such as energy saving stoves and fireless cookers and link them to market opportunities and income generating activities to increase their incomes.

Dairy Value Chain:

- **Output 1.1 Enhanced stakeholder capacity via innovative extension approaches and business training:** The dairy value chain component has already recruited community livestock extension volunteers (PFTs, VBAs and agro-vet agents) as part of rolling out a grassroots extension support system. These agents have been trained on farmer-farmer extension approach and have been empowered to offer basic training to members of their networks/villages.
- **Output 1.2 DBHs and/or innovative agro-vet models implemented for improved access to inputs and services:** *The project will intensify these initiatives and ensure that the innovations reach more farmers through supporting investments in customer centric retail strategies by cooperative and private owned agro-vets. This will be achieved via facilitation of customer centric market oriented strategies including customer service training, agent networks and shop remodeling services. These services will promote increased retail and distribution of quality inputs and services.*
- **Output 1.3 Increased uptake of improved dairy technologies by smallholder dairy households:** Having laid the foundational structures for technology dissemination, the dairy component intensified dissemination of its flagship technologies of FTAI, ECF vaccination and improved forages during the 2nd year of project implementation. Going into the final year of implementation the project seeks to extend the reach of these technologies by embedding interventions in business models that will ensure sustainability of project gains. This will be achieved through the output of increased uptake of improved dairy technologies by small holder with specific activities on animal health and AI services, training on entrepreneurial skills; training on animal breeding; distribution of improved fodder varieties, training on FEAST, and support to livestock extension services.
- **Output 1.4 Functional multi-stakeholder platforms established for stakeholder engagement and policy dialogue:** The Dairy component will work with the counties of Migori, Kisumu, Busia and Vihiga to convene stakeholder platforms and facilitate technical groups to develop strategies for improved breeding services. The project will also enhance capacity of various value chain actors by supporting them to actively participate in the established platforms.
- **Output 2.1 Increased business orientation and gender inclusivity in producer organizations:** The project will intensify activities to enhance linkages to financial institutions.
- **Output 2.2 Increased number of private enterprises trading with farmers/farmer groups:** More emphasis will be on supporting POs to invest more in milk quality and efficient distribution under the specific output 3.1.
- **Output 2.3 Establishment of PO share capital schemes and provision of business development services:** This output will focus on emergence of saving and credit schemes, building capacity for PO and other daily business to make them financial attractive to lenders.
- **Output 3.1 Increased partnerships for aggregation and distribution of milk to enhance household access to milk:** In the third year, more emphasis will be on supporting POs to invest more in milk quality and efficient distribution.

Drought Tolerant Crops Value Chain:

- **Output 1.1: At least 120 small holder good seed producers (20 in each County) in six counties that have been trained to produce and disseminate high quality seed will be identified and linked to seed companies and seed banks.** This output will contribute to improving the availability of affordable and high quality seeds through informal sources (community seed banks) as well as formal channels (seed companies and institutional seed units) in all the production areas.
- **Output 1.2: 15 collective Producer Marketing Groups organized and trained in group dynamics and organization management to ensure sustainability.** At least twenty of trained groups (2 per Sub-county) will be linked to markets. The value chain will continue to develop a community based approach where producers participate in improved value chains through forming producer marketing groups. The already trained groups will then be linked to buyers.

- **Output 1.3: 60 extension staff in in SA2 trained in quality standards to meet market requirements and 5000 producers trained in agri-business, product quality and standards.** The value chain markets will continue to be strengthened by enhancing the knowledge and application of quality standards as per the market demand at each stage of the value chain.
- **Output 1.6: 2 seed companies, 2 institutional seed units, 76 seed stockists engaged for production and delivery of quality seed (linked to output 1.1).** This output will enable availability of certified seed of the target crops to farmers through formal seed delivery systems which will enable farmers to produce seeds and grains of nutrient dense cereals and legumes.
- **Output 1.7: 15 farmer groups already trained in using threshers and shellers to reduce drudgery linked to fabricators and financial intermediaries.** Dryland cereals and legumes production and post-harvesting processing at the farm-level is mostly handled manually. It is, therefore, important that the drudgery associated with these crops is reduced to make drought tolerant crops enterprises attractive and competitive. As women are mainly engaged in postharvest activities, mechanization will reduce drudgery and labor needs and allow for participation in more rewarding functions in the VC.
- **Output 1.9: At least 25 Community Seed Banks established for safe storage and improved seed access**
Community seed banks will provide the mechanisms to ensure affordable high quality seed production, storage and dissemination to small holder farmers. Wherever possible the existing facilities and farmers' groups will be targeted to establish the seed banks.
- **Output 1.10: At least two grains and two product market outlets (food, feed and malting) identified and developed targeting National, Regional and International markets.** This output employs a whole value chain development approach intended to link smallholder farmers to markets. In the year 2016-17 the main activity has been to understand the policy and regulatory environment at the county and national levels to identify bottlenecks and entry points for developing grain and product markets. In 2017-18 there will be need for some rapid assessment work or scoping studies to fill information gaps and to identify market participant's needs and link them to opportunities.
- **Output 2.1: Value Chain market value chains analyzed and upgrading strategies for small holder farmers developed.** This output will enhance understanding on the structure and functioning of drought tolerant crops value chains and enable to develop strategies to link smallholder farmers to markets.
- **Output 2.2: 20 processors trained in rapid testing procedures for aflatoxin contamination detection.** In groundnut and the dryland cereals the contamination with aflatoxin caused by a fungus (*Aspergillus flavus*) can hinder access to regional and international markets. Aflatoxin contamination is also a health risk, especially if the products are consumed by young children; it contributes to stunting and interferes with the immune system. The project will build capacity of market actors to deal with aflatoxin management in value chains.
- **Output 4.2: 12,000 youth and children reached with dietary diversity messages and sensitized on the nutritive value of drought tolerant crops.** The project has completed the exercise of developing BCC messages, which have been translated into Swahili; and brochures have already been distributed in Tharaka Nithi and Makena. In the third year (2017/8), brochures will be distributed in Elgeyo Marakwet, Siaya and Busia. Furthermore, the project will work with women in the counties to develop songs, tunes and jingles around these messages to be sang during awareness activities or for radio programs. In addition, nutrition activities, will use radio messages, school events, health dispensaries, etc. to sensitize the population on nutrition issues.

Potato Value Chain:

- **Output 1.1 Early generation seed production (minitubers, cuttings and first/second generation field tubers) increased by at least 200 tons annually:** With the production of early generation seed from cuttings continuing, it is projected to exceed the annual target of 200 tons. DSMs will multiply seed from cuttings, and after 2-3 generations sell directly to farmers. Investing in rooted cuttings for seed production does not require much land and offers high profit margins. The component intends to engage youth in this activity. Around 50 to 100 farmers will be trialed to assess their ability to save seed on farm from cuttings.
- **Output 1.2 At least 150 decentralized seed multipliers (DSM) developed to annually produce sufficient seed potato for 2,000 ha and obtain gross margins of 1,500 USD/ha:** Regular access to starter material is the weak

link in establishing decentralized seed production. Outstanding DSMs will be upgraded to seed merchants to sustain the system by bringing certified seed sources closer to them. Licenses will be issued at the cooperative level so that many seed multipliers can access them and produce certified seed. During cooperative business skills training and business plan development, a module specific on seed potato business will be given to the seed committee. Cost-sharing investments in seed storage will continue.

- **Output 2.1: Smallholder potato farmers obtain gross margins of at least \$1,132/ha through using quality seed potato:** After the first season of farmers' use of quality seed produced by seed multipliers, farmer yields doubled compared with the use of traditional seed, averaging 19.2 and 9.4 t/ha, respectively. As a result, gross margins increased 300 percent the baseline of \$720 US/ha. Interventions to support seed systems have reduced the distance farmers travel to purchase quality seed from the baseline of 88 to 3km. In this output WAOs will continue to be the main point of interaction with rural farming households.
- **Output 2.2 Farmer capacity built to produce at least 25% of their seed needs through saving quality seed potato on-farm:** The farmers trained throughout the project also received training on saving seed on-farm. When the WAOs verify application of hilling (output 2.1), they will also verify if applying technologies related to saving quality seed on farm. To further support options for saving seed on-farm, 100 target pilot farmers will receive 50 to 100 cuttings to multiply seed on-farm in small seed beds.
- **Output 3.1. Organized and coordinated market information for seed potato suppliers and ware potato market prices developed and implemented:** Awareness will be created about the ICT platform-Viazi Soko developed by NPCK. Information will assist seed merchants to make informed decisions on the varieties demanded most by farmers and from which counties. NPCK will send bulk messages to registered users to share important potato information.
- **Output 3.2 At least 500 farmers linked to formal and informal markets:** One potato cooperative in Uasin Gishu will initially operate under the Ainabkoi Dairy Cooperative Society, which already is operational. The second cooperative society in the county will be formed in Matharu to cover Chagaiya and Timboroa/Tarakwa areas. Youth groups (six already identified and trained on potato learning farms) will be supported to engage in potato processing. Two sets of processing equipment for producing chips and crisps will be purchased and rotated among groups to enable them to earn capital to purchase their own equipment. To encourage the youth groups, the best performing youth group will receive a set of processing equipment. Mapping markets, transport networks and input suppliers will be undertaken to identify market opportunities in Eldoret, Isiolo and Kisumu to link the potato cooperatives to input suppliers and markets.
- **Outputs 4. Mainstream potato as a component of agricultural nutrition interventions:** Trained County and sub-county level nutrition staff will train CHVs to provide nutrition messaging to project VC-related beneficiaries. CHVs will use tools common to all VCs, along with potato VC-specific nutrition tools. The CHVs will link with WAOS to ensure that at least 2,000 households that receive nutrition messaging benefit children under 2 years are reached.

Orange Fleshed Sweet Potatoes Value Chain:

- **Output 1:1: Increase productivity and production of OFSP among 65,000 smallholder households:** In the third year, at least 120 lead root producers will be trained as trainers on good agronomic practices, harvesting, and postharvest handling and support will be provided to 43 vine multipliers to operate as a business. Contract farming with private sector companies will be developed to improve access to markets and the target is 10 contracts between traders and farmers. To ensure regular supply of OFSP vines, 8 multipliers will be provided with irrigation facilities and trained on their effective use. Farmers will also be supported to do off season production of OFSP especially on wetlands.
- **Output 2.1: OFSP and vitamin A material integrated into nutrition education and nutrition counseling at health centers and schools, capacity strengthened among technical staff and community groups:** In the planning period, at least 500 CHVs will be trained on the training aids. These CHVs are expected to train a total of 10,000 child care givers of children under 2 years and pregnant women. In addition, 5,000 households

will be provided with OFSP nutrition counselling. Emphasis will be on attaining informed behavior change that OFSP is a versatile, healthy food that can contribute to reduction of vitamin A deficiency and food security.

- **Output 2.2: Options for diversified OFSP utilization, such as complementary baby food, adapted and scaled up and capacity strengthened for 18,000 households:** In this output storage promotional activities at selected supermarkets and other outlets will be conducted. In addition to at least 16 community based promotional events and cooking demonstrations and nutrition education in at least 20 open air markets to create demand and promote consumption of for OFSP will be carried out.
- **Output 3.1: At least 3 technologies and practices to improve root storage adapted and disseminated:** Two solar powered technologies that were tested will be scaled up to store roots and avail them throughout the year to ensure continuous supply of roots that is critical in sustaining household consumption and reduced post-harvest losses. Demonstrations of household storage techniques will be held in 8 Sub counties.
- **Output 3.2: Gross margins and market availability of OFSP roots increased by at least 15% through the strengthening of selected OFSP market chains, including to commercial processors:** To further strengthen marketing of OFSP, a firm will be engaged to undertake promotions and consumer education to increase demand for OFSP and related products. Farmer organization will be strengthened through collective marketing/aggregation in four sub-counties including provision of support to cooperatives and registered farmer groups to engage in contract farming with buyers. At least 3 farmer-trader forums will be conducted for market linkages targeting at least 8 contracts and train at least 20 Hotels/ Restaurants and 30 medium/small bakeries on integration of OFSP in products and trendy recipes.



14 FINANCIAL REPORT

The program has an approved budget of \$ 16,008,690 for executing the first year (2015/2016) and second year (2016/2017) work plan activities with allocations for each value chain and line item as shown in table 7. As at 30th September 2017 the overall program expenditure was US dollars, 15,635,392 which is a burn rate of 98%. The burn rate is within the expected range and corresponds with the performance of the program in the implementation period. The Livestock Component overall burn rate was at 95%. The Program Management Secretariat had a burn rate of 80%, Dairy Value chain burn rate was at 101%, the Root Crops and Drought Tolerant Crops Value Chains' burn rates were 99% and 111% respectively as shown in the summary report below. The over expenditure in dairy value chain is because one of the partners was late for report during the first year, hence the report was captured in the 2nd year. The drought tolerant crops value chains team has procured seed in advance; hence the over expenditure will be deducted from the third-year budget.

Table 7. Financial Report

ILRI		CGIAR		PROGRAM FINANCIAL REPORT																				
ORGANIZATION NAME:				International Livestock Research Institute (ILRI)																				
PROGRAM:				Feed the Future - Accelerated Value Chain Development in Kenya																				
CURRENT REPORTING PERIOD:				From: 1-Jul-2017				To: 30-Sep-2017																
CUMULATIVE REPORTING PERIOD:				From: 1-Oct-2015				To: 30-Sep-2017																
SECTION A: INCOME																								
DISBURSEMENTS	EXPECTED AMOUNT (USD)			ACTUAL RECEIPTS FROM ILRI (USD)								UNDISBURSED AMOUNT				% RECEIVED								
	CA			Total Received as of Previous Report		Actual Received in Current Period		Total Received as of Current Report				UA = CA - TC				%R = TC/CA								
	CA			RP		RC		TC = RP + RC				UA = CA - TC				%R = TC/CA								
Disbursements from USAID	25,000,000			15,530,000		-		15,530,000				9,470,000				62%								
SECTION B: EXPENDITURE																								
Reporting Lines	Value Chain																TOTALS							
	PMS				Dairy				Livestock				Root Crop				Drought Tolerant Crop							
	Amount Budgeted	Actual Spent	Balance	Burn Rate	Amount Budgeted	Actual Spent	Balance	Burn Rate	Amount Budgeted	Actual Spent	Balance	Burn Rate	Amount Budgeted	Actual Spent	Balance	Burn Rate	Amount Budgeted	Actual Spent	Balance	Burn Rate	Amount Budgeted	Actual Spent	Balance	Burn Rate
Personnel Costs	906,517	875,834	30,683	97%	628,831	619,134	9,697	98%	1,332,213	1,259,400	72,813	95%	557,475	589,876	(32,401)	106%	606,663	606,664	(1)	100%	4,031,698	3,950,907	80,791	98%
Development Partners	-	-	-	0%	988,729	1,024,127	(35,398)	104%	972,027	774,896	197,132	80%	544,072	495,538	48,533	91%	501,796	438,632	63,165	87%	3,006,624	2,733,192	273,432	91%
Supplies & Services	942,957	590,312	352,645	63%	828,876	816,639	12,237	99%	2,095,824	2,209,171	(113,348)	105%	812,764	830,853	(18,089)	102%	1,227,893	1,517,400	(289,507)	124%	5,908,314	5,964,376	(56,062)	101%
Equipment	-	-	-	0%	-	-	-	0%	-	-	-	0%	77,249	72,884	4,365	94%	90,000	91,832	(1,832)	0%	167,249	164,716	2,533	98%
Operational Travel	75,946	71,487	4,459	94%	113,979	160,712	(46,733)	141%	220,676	191,711	28,965	87%	28,122	34,692	(6,570)	123%	147,793	185,182	(37,389)	125%	586,516	643,784	(57,268)	110%
Institutional Overheads	288,813	230,295	58,518	80%	428,880	390,704	38,176	91%	693,111	637,287	55,824	92%	330,502	301,989	28,512	91%	314,378	367,721	(53,343)	117%	2,055,684	1,927,997	127,687	94%
Lead centre passthrough	-	-	-	0%	-	-	-	0%	-	-	-	0%	117,509	105,376	12,133	90%	135,095	145,043	(9,948)	107%	252,604	250,419	2,185	99%
GRAND TOTAL	2,214,232	1,767,927	446,305	80%	2,989,295	3,011,316	(22,022)	101%	5,313,852	5,072,465	241,387	95%	2,467,693	2,431,209	36,483	99%	3,023,619	3,352,473	(328,855)	111%	16,008,690	15,635,392	373,299	98%
SECTION C: FUND BALANCE																								
										UNSPENT DISBURSEMENTS (USD)				(105,392)										

Figure 1. Expenditure visa vis Budget Chart

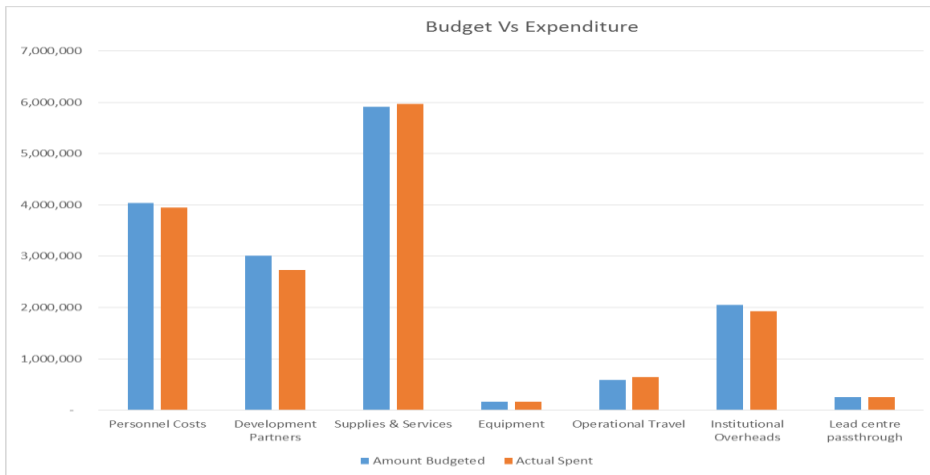


Table 8. Cash Flow Report and Financial Projections (Pipeline Burn-Rate)

ORGANIZATION NAME:		International Livestock Research Institute(LRI)													
PROGRAM:		Feed the Future - AVCD													
CUMULATIVE REPORTING PERIOD:		1-Oct-2015		To: 30-Sep-2017											
Budget Category	Period:	Period:	October 2015 to March 2017										CUMULATIVE	BUDGET	% Spent
	Original Total Budget Estimates	Obligated Amount	Quarter 1 Actual Expenditure	Quarter 2 Actual Expenditure	Quarter 3 Actual Expenditure	Quarter 4 Actual Expenditure	Year 2 Quarter 1 Actual Expenditure	Year 2 Quarter 2 Actual Expenditure	Year 2 Quarter 3 Actual Expenditure	Year 2 Quarter 4 Actual Expenditure	Year 3 Quarter 1 Projected Expenditure	Oct 2015-Sept 2017	BALANCE		
	Oct 2015 - Sept 2018	Oct 2015 - Sept 2017	Oct 2015 - Dec 2015	Jan 2016 - March 2016	April 2016 - June 2016	July 2016 - Sept 2016	Oct 2016-Dec 2016	Jan 2017-March 2017	April 2017-June 2017	July 2017-Sept 2017	Oct 2017-Dec 2017				
Personnel Costs	\$ 6,462,683	\$ 4,031,696	\$ 188,228	\$ 384,262	\$ 493,011	\$ 639,776	\$ 527,826	\$ 597,536	\$ 565,753	\$ 579,256	\$ 653,646	\$ 4,001,304	\$ 30,394	98%	
Development Partners	\$ 7,582,511	\$ 3,006,624	\$ -	\$ 10,046	\$ 191,739	\$ 509,460	\$ 472,927	\$ 129,753	\$ 897,753	\$ 521,513	\$ 497,779	\$ 2,733,192	\$ 273,432	91%	
Supplies & Services	\$ 6,374,969	\$ 5,908,314	\$ 157,568	\$ 319,900	\$ 678,294	\$ 1,320,079	\$ 953,213	\$ 535,696	\$ 1,020,930	\$ 713,203	\$ 783,167	\$ 5,964,376	\$ (56,062)	101%	
Equipment	\$ 504,696	\$ 167,249	\$ 289	\$ 71,874	\$ 651	\$ -	\$ 6,988	\$ 70	\$ 84,843	\$ -	\$ 9,464	\$ 164,716	\$ 2,533	98%	
Operational Travel	\$ 949,413	\$ 586,516	\$ 17,337	\$ 58,645	\$ 128,882	\$ 110,271	\$ 87,649	\$ 68,960	\$ 70,188	\$ 89,117	\$ 45,247	\$ 643,784	\$ (57,268)	110%	
Institutional Overheads	\$ 2,921,760	\$ 2,055,684	\$ 44,777	\$ 135,075	\$ 219,010	\$ 418,172	\$ 389,028	\$ 183,661	\$ 387,706	\$ 271,962	\$ 307,434	\$ 1,927,997	\$ 127,687	94%	
Lead centre passthrough	\$ 203,968	\$ 252,604	\$ 2,079	\$ 35,726	\$ 12,612	\$ 16,722	\$ 14,281	\$ 17,304	\$ 17,954	\$ 13,467	\$ 39,683	\$ 250,419	\$ 2,185	99%	
TOTAL COSTS	25,000,000	16,008,690	410,278	1,015,530	1,724,199	3,014,480	2,451,912	1,532,983	3,045,128	2,188,518	2,336,421	15,685,789	322,902	98%	

Table 9: Budget Details

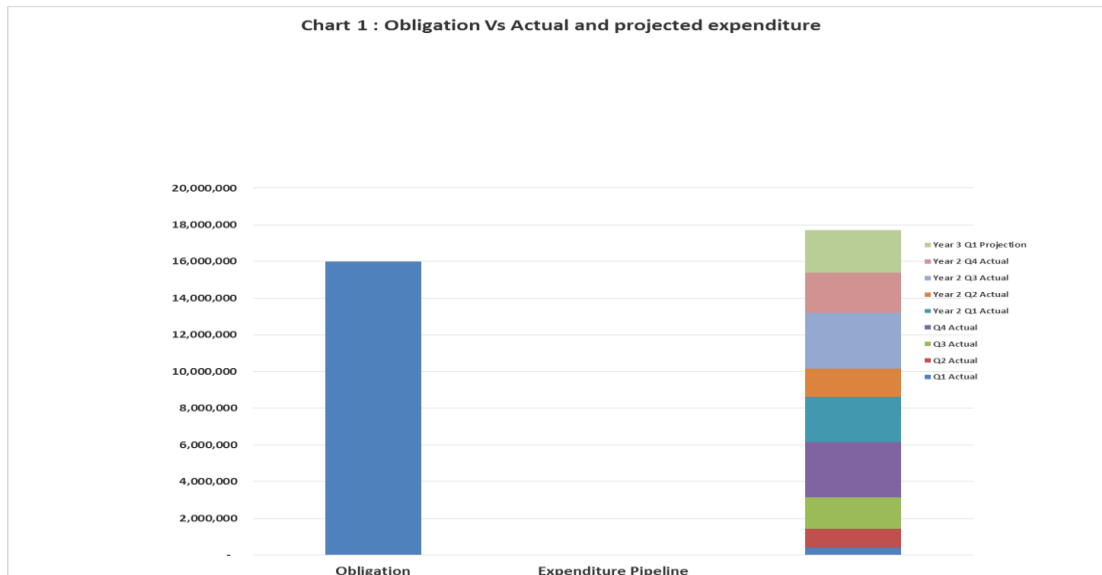
T.E.C.: \$ 25,000,000

Obligation: \$ 16,008,690

Cumulative Expenditure: \$ 15,635,392

Obligation	1st Quarter Actual Expenditure	2nd Quarter Actual Expenditure	3rd Quarter Actual Expenditure	4th Quarter Actual Expenditure	Year 2 1st Quarter Actual Expenditure	Year 2 2nd Quarter Actual Expenditure	Year 2 3rd Quarter Actual Expenditure	Year 2 4th Quarter Actual Expenditure	Year 3 1st Quarter Projected Expenditure
Total: 16,008,690	410,278	1,015,530	1,724,199	3,014,480	2,451,912	1,532,983	3,045,128	2,188,518	2,336,421
Personnel Costs	188,228	384,262	493,011	639,776	527,826	597,538	565,753	579,256	653,646
Development Partners	0	10,048	191,739	509,460	472,927	129,753	897,753	521,513	497,779
Supplies & Services	157,568	319,900	678,294	1,320,079	953,213	535,696	1,020,930	713,203	783,167
Equipment	289	71,874	651	0	6,988	70	84,843	0	9,464
Operational Travel	17,337	58,645	128,882	110,271	87,649	68,960	70,188	89,117	45,247
Institutional Overheads	44,777	135,075	219,010	418,172	389,028	183,661	387,706	271,962	307,434
Lead centre passthrough	2,079	35,726	12,612	16,722	14,281	17,304	17,954	13,467	39,683

Figure 2: Obligations Visa Vis Actual Expenditure Chart



Budget Nots

Personnel	Personnel costs have been consistent, and are projected to remain the same in the coming quarter.
Sub-grants/ Collaborators	Sub-grant costs have been low in the last 3 quarters, but have seen an increase in the last 2 quarters due to an increase in activities.
Field Costs, Supplies & Services	Field costs, supplies and services have increased due to an increase in activities.
Operational Travel	Travel costs have also increased.
Institutional Overheads	This will remain the same over the project period (15%)

ANNEX 1. SUCCESS STORIES

The power of semen: better semen, better calves, better lives - Quinter and Charles Migot's story: Facilitating access to improved semen services for small-scale farmers in Homa Bay County

By Muthoni U. Njiru

For Quinter Awour the birth of a new calf is the beginning of her investment future. Quinter is a member of *Tang Ber* Women Group, based in Kotieno sub location, Homa bay County, for the last 7 years she has participated in the table banking group but has always envisioned the group as a collective force for pooling resources to change their economic positions. "All the money we earn we use it in the home, we want to start investing in businesses for the future of our children," shared Quinter.

"With the birth of new improved calves to the community. We are excited about collective dairying, growing improved fodder, poultry keeping and rearing dairy goats" Quinter stated, Things are changing for the group.

Their new interests come from a community program that is kick starting dairy farming in the area. Homa Bay County has favorable conditions for dairy production characterized by suitable agro-climatic condition and higher product prices owing to demand for milk that far outstrips local supply. Yet this potential remains unexploited due to inappropriate breeds of cattle kept by majority of households. The community participated in a USAID funded mass insemination program which subsidized the cost of artificial insemination, through a rapid breeding intervention called Fixed Time Artificial Insemination (FTAI). This activity availed hormone treatment, quality seed semen and trained AI veterinary services that synchronized a large group of cows belonging to smallholder households. The intention is to rapidly increase number of improved dairy cows that can crowd in dairy businesses – inputs supply and services, to reduce the cost of dairy production.



Quinter Migot (left) stands adjacent to Omollo, Kotieno sub location veterinarian who administered the FTAI services that encouraged change to the Tang Ber Womens group. Photo credit AVCD/ M. Njiru

Quinter and her husband Charles jumped at the chance to access an improved dairy calf. This new intervention was an alternative to their previous breeding option where they looked for a low level improved bull to mate their animals. "Getting improved semen was not easy, you needed a lot of money to go all the way to Kisii just to get someone who had the semen" Charles commented, "I just don't have that money." he continued.



Charles and Quinter Migot display their newly born improved calf Photo credit AVCD/ M. Njiru

After the 10-day hormone treatment, followed by insemination at a subsidized cost of Ksh. 500, compared to the market rate of Ksh. 2,500 to 3,000 one of their two cows presented for the breeding program conceived. "I just sold the other animal that didn't conceive, I had a family emergency and it was only producing less than 5 litres a day" lamented Charles. But now, with the new training on livestock husbandry and business training, Charles and Quinter are planning to profit from their new calf. They are excited about their new future with AI and plan to use the revenues/profits from increased milk yields to invest in fodder plots for personal and commercial use.

"Now that we will have access to these services, we will invest again in AI services. When our cow is ready to be served again, we are willing to pay because we have seen that improved semen is better than our traditional ways, look at this calf, just beautiful!" said Quinter.

Quinter's women group are excited for the future in fodder bulking and milk production. Things are going to change for Kotieno location. Like other families, Charles and Quinter want the best for their children. "We

have a two and half acre parcel of land, next time you visit you will see how my farm will have changed. We will have more animals and will grow more food" highlighted Charles.

Rent a womb, the power to sharing resources to build the livelihoods of a community
By Muthoni U. Njiru

Amongst the Luo, community is highly emphasized. Cultural and social attributes encourage joint development and support for those bound by blood or association. Selvin Odhiambo, wife and mother of 6, sought the assistance of her neighbor and relative, Bernardus Agumba. To take part in the USAID-funded subsidized breeding program, Bernardus Agumba agreed to lend one of his 4 cows to Selvin for her to start up her dairy farming. With four healthy dairy animals, Bernardus felt the need to support his neighbor in whatever way possible. The cow has now benefited from the USAID-funded subsidized breeding program, delivering a female calf that will allow Selvin to produce milk for her home.

“Selvin, is more than a relative, she is my friend her 6 kids need milk daily and this will help her achieve this,” shared Bernardus, “her husband and my friend Odhiambo, have to look for school fees and buying a cow would be too difficult, due to limitation resources and the heavy burden of 6 children, this can change things for them.”

In April 2017, Selvin received a healthy cross bred calf from her neighbor’s cow after a successful pregnancy from Fixed Time Artificial Insemination (FTAI). The sheer excitement in her eyes displays how Bernardus’s generosity has opened a new opportunity for her and her family.

“By leveraging and supporting existing cultural platforms, farmers will help themselves become more food and income secure. Our program will not only increase productivity in the community but will improve the livelihoods of these house

holds” commented James Rao, team leader of the Feed the Future Kenya Accelerated Value Chain Development Program, that supported the local insemination program.



Bernardus Agumba with his cow, stands with Selvin Odhiambo his neighbor and relative. Photo credit AVCD/

With the availability of quality veterinary services, and access to “shared” animals, communities can assist each other. For instance, if one farmer has several dairy animals but only has the financial ability to serve one or two animals, the farmer can allow their relative or friend to use one his/her cow to benefit from the breeding opportunity presented by the USAID-funded program.

Traditionally this was a way of spreading risk, if hardship or tragedy befell one’s herd some of the cows shared/lent to friends or relatives would be spared, thus giving a chance for the farmer to restart his/her livestock rearing enterprise.

“This calf will help us, and I will benefit from the milk from this calf in one way or another,” said Bernardus.

“My boy Hilary, has made the calf his friend because he is excited to learn how to milk the gold that will change his future,” explained Selvin, “My children thank the American people for helping us get this improved calf.”

As we move forward more development programs need to leverage on existing cultural and social platforms that can perpetuate our efforts of change. Farmers have local knowledge, but limited resources, we can provide necessary support that can help them help themselves, this is the future of development.

Village Based Dairy Advisor Priscilla Ouma launches a 'restore milk campaign'

By FIPS AFRICA- FTF-USAID-AVCD-DVC Partner

Priscilla Ouma is such an inspiration and proof that when you give women farmers a few tools, the entire community benefits. Through her hard work, the wind of change is blowing across the village and soon farmers in Muyeye B will be milk rich.

Farmers are proud of Priscilla's efforts to ensure that every farmer produces enough quality milk for consumption and sale. Priscilla has earned a lot of respect for disseminating clean planting materials of improved fodder grasses to all households in her village.

She is a Village Based Dairy Advisor (VBDA) who has been trained on growing fodder crops and fodder conservation techniques such as hay making, silage making and management of crop residues like maize stover – while also providing extension advice. Priscilla is also an agent of input suppliers. Farm Input Promotions Africa (FIPS-Africa) under the dairy component of Feed the Future Kenya Accelerated Value Chain Development Program (AVCD) has recruited and trained 138 self-employed VBDA's like Priscilla in five counties of Siaya, Busia, Vihiga, Kisumu and Homabay.



VBDA Priscilla Ouma of Busia County in her expansion plot of napier planted in tumbukiza holes. She has scaled up from 80 tumbukiza holes planted in March 2016 to current 200 tumbukiza holes. PHOTO: Raymond Jumah/FIPS-Africa

According to Priscilla, farmers keep cows because their forefathers had cattle, but they do not really know how to get the best out of them. Before the beginning of the project, average milk production in Muyeye B was less than a litre a day. Today this has changed...

Farmers believed they needed large ranch-like land to become dairy farmers. "I never knew that managing my small land area could be profitable. I now have the knowledge of how to keep dairy cows with better management" says Rosemary Maloba, one of Priscilla's farmer's. Priscilla introduced me to new grasses that I was not growing before. She gave me 300 splits of brachiaria and 20 stems of napier and advised me on how to plan my land. I used to believe that only ranchers with high grade breeds needed to plant fodder," she explains.

In December 2016, there was no grass to feed cattle but brachiaria and napier survived. "I believe napier survived because we planted them in tumbukiza holes filled with manure and brachiaria survived because it is suited for this area. Many bought grass for their animals but I had enough brachiaria and napier to feed my cattle," she says.



FIPS VBDA Priscilla Ouma attending to her pure bred, Ayrshire bull calf. When the calf matures, it will improve the local breeds in Muyeye B village. Photo: Raymond Jumah/FIPS-Africa

Looking ahead, Rosemary will sell two of her local cows and buy one cross breed for milk. She knows the local cows will not produce enough milk. "I see a brighter future, through the knowledge I have gained from my VBDA, am sure I will triple my milk production," she says.

In the same village, Priscilla's farmer Prudence Akinyi did not know that simple and seemingly unimportant factors like clean housing and proper feeding reduces milk production. She has now learned from Priscilla that her cow needs a clean and comfortable unit lest it be prone to diseases. She also now understands that if the cow falls sick because of unclean housing, then milk production will decrease. This is also expected if the cow doesn't eat enough good and quality feed.

She says, "I have learnt how to take better care of my cow itself—because it is the one that produces milk. I have introduced napier, brachiaria and occasionally have added mineral salts to its feed. Because of these changes, I was surprised when I got 3 litres of milk from my local cow at peak time; two litres in the morning and one in the evening."

Previously, Prudence's cow was only producing a half a litre in the morning and another half in the evening. Rosemary and Prudence are just an example of hundreds of small holder farmers who are learning from the VBDA's in the dairy project. This season, Priscilla has reached 89 farmers with fodder planting materials including napier cuttings, disodium and Brachiaria splits. She has also been advising these farmers on better husbandry. "I want my village to produce enough fodder for our cows and surplus for sale to farmers who cannot produce," said Priscilla. So far, approximately 11,000 farmers have received improved varieties of brachiaria, napier, disodium and sweet potato.

"Thanks to the knowledge I have gained through the AVCD project, I am now a teacher and a producer of fodder, I am helping farmers in the village as I also secure enough income and food for my family from my work."

From grass to glass, knowledge to upgrade: How Village- Based Dairy Advisors are transforming smallholder systems in Kenya

By FIPS-AFRICA – FTF-USAID-AVCD-DVC Partners

Just through feeding her cow on Brachiaria grass and proper maintenance, a smallholder farmer in western Kenya has improved her milk yield more than two-fold.



Lilian Ochieng from Usaha village in Siaya County cleaning her cow's udder in preparation for milking (photo credit: FIPS/ Raymond Jumah)

It's about 5:30 pm and Lilian Ochieng just heard her cows' loud moo — a sign that they want to be milked- Lilian confidently heads toward her cow pen.

Lilian, a smallholder in Siaya County in the western part of Kenya, puts down the bucket, guides one of her dairy cows to the milking pen and sits on a stool beside it. She washes her hands, then the cow's udder with warm disinfected water after which she dries the udder with a clean towel. She starts milking the cow as her last-born son watches on, maybe to learn a thing or two.

"This is the very cow that used to produce as low as five litres a day. Today I milk up to 13 litres a day," she proudly says as she gently handles her cross- Guernsey dairy cow.

In 2014 when the cow calved, the farmer milked twice, at 6:30 am and 5:30 pm getting only 3 litres and 2 litres respectively.

"Before I didn't routinely have my cow's health checked, I only invited

the veterinarian when I had some extra money in my pocket or when I realized it had been long since it had been checked," she explains. Back then, Lilian's cow would take 24 months between calving¹, instead of the expected 12 months² that a properly managed cow takes.

"I never paid that much attention to my dairy cow, all I knew was that it needed to have a shed, feed on Napier grass and drink water once a day. There was no day I ever bought mineral salts for my dairy cows," she says.

Many farmers in western Kenya commonly complain that they invest in dairy cows with huge expectations of increased milk productivity, only to milk far less than they expect. So, what is Lilian's secret that has seen her milk production increase more than two-fold to 13 litres a day?

AVCD VBDA Lilian Ochieng from Usaha village, Gem Sub County in Siaya County chopping the fodder grass brachiaria into smaller pieces to minimize waste

"The secret lies in proper feeding with improved fodder and supplements such as mineral salts as well as deworming, tick control and proper housing," explains the smallholder farmer.

"I learnt this when I was trained as a Village-Based Dairy Advisor (VBDA), and now I am reaping the benefits!"

Leveraging peer learning among smallholders

The VBDA model is a private-sector led extension approach based on trained and commercially-oriented village dairy business advisors providing extension advice, while also acting as agents of input suppliers. This model not only maximizes on the power of knowledge sharing among farmers but also empowers famers to intentionally reach out to others and extend their knowledge. Over 128 self-employed VBDA's, including Lilian, have been recruited and trained in four counties of Siaya, Busia, Vihiga and Homabay.

This approach made accessible improved fodder varieties- such Brachiaria, disease-free Napier varieties, *Desmodium* and *Caliandra*- to the VBDA's who also share the planting materials with other farmers.

"As a VBDA, I reach more than 100 farmers in a season. I provide them with planting material for fodder crops and offer spraying services to control the ticks. I also link the farmers with veterinary service providers so that they can also increase their milk production like me."

VBDA's have also empowered farmers to plant dual-purpose maize varieties which upon maturity provide both grain for the household and fodder for the cattle.

Lilian keeps two dairy cows and a calf, on her 1-acre farm in Usaha village, Sidindi Ward in Siaya County. One of the dairy cows is incalf and not providing milk. She is hopeful that with her new knowledge her farm's milk production will reach its full potential.



¹ 15 months to come on heat plus 9 months of pregnancy

² 3 months to come on heat plus 9 months of pregnancy

Out of the 13 litres of milk Lilian gets per day, she uses 4 litres to feed her calf, 3 litres for her home and sells the rest to farmers within the village. She records a total of KES 360 (USD 3.60) a day from selling the remaining 6 litres at KES 60 per litre and saves most of the money for school fees and for treatment of the cattle.

Farm Inputs Promotions Africa (FIPS-Africa) is an implementing partner in the dairy component of the Feed the Future Kenya Accelerated Value Chain Development Program (AVCD) whose goal is to increase milk production and productivity and to improve on household nutrition across 9 counties in Kenya.

Improving knowledge base for animal disease surveillance in pastoralist systems in Kenya
By Dorine Odongo

Livestock keepers admiring illustrations from a training manual (photo credit: ILRI)

Among the numerous challenges that pastoralists face in their livestock production systems, animal diseases greatly affect not just their livestock productivity, but also their livelihoods.

While pastoralists may have some knowledge on endemic livestock diseases that they have gained through historical exposure, in many circumstances their understanding on the causes of some of the diseases and methods of control are erroneous and detrimental. Huge losses from livestock diseases are incurred due to use of traditional methods of treatment and control, such as removal of lymph nodes, misuse of veterinary drugs and misconceptions about vaccination campaigns.

Due to nomadic nature of pastoralists systems, there is no consistent access to animal health service providers. Against this backdrop, the



International Livestock Research Institute (ILRI) in collaboration with the county governments in the north-eastern region of Kenya is working to equip pastoralists with skills on animal disease surveillance. Under the livestock component of the Feed the Future Kenya Accelerated Value Chain Development (AVCD) program, ILRI is implementing a three – tier train – a – trainer model to train veterinarians and community disease reporters on the symptoms of prevalent livestock diseases. The objective of this training model is to improve the knowledge base among the value chain actors on the diseases, their symptoms and how they are described at different levels. Using tailored manuals with pictures and illustrations for ease of recognition of these diseases, disease surveillance champions have been trained as trainers and trainers, who in turn have trained more than 1100 livestock keepers in Turkana county.



In addition to building the knowledge base, the three-tier train-a-trainer module will reinforce the existing a surveillance and disease control network involving the county veterinarians, community surveillance champions and the producers and market actors.

This model has also facilitated interaction and linkages between community disease reporters, county government and livestock producers for improved disease surveillance and reporting. In addition, the model is building the capacity livestock producers to demand quality veterinary services.

Ms Paulina Natuko (standing) a Disease Surveillance Champion facilitating livestock disease recognition training for livestock producers in Napiekar, Turkana county (photo credit: ILRI)