



MID-TERM EVALUATION OF THE FEED ENHANCEMENT FOR ETHIOPIAN DEVELOPMENT PROJECT PHASE II (FEED II)

Final Report



Expanding Opportunities Worldwide

SUBMITTED TO: ACDI/VOCA

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ACRONYMS AND ABBREVIATIONS

ATA	Agriculture Transformation Agency
CFM	Concentrated Feed Manufacturing
CSA	Central Statistical Agency
DA	Development Agent
DC	District of Columbia
EC	Ethiopian Calendar
ETB	Ethiopian Birr
FEED	Feed Enhancement for Ethiopian Development Project
FGDs	Focus Group Discussions
GTP	Growth and Transformation Plan
ILRI	International Livestock Research Institute
KGs	Kilograms
LMD	Livestock Market Development
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
SHF	Smallholder Farmers
SNNPR	Southern Nations, Nationalities and Peoples State
ToT	Training of Trainers
USDA	United States Department of Agriculture
%	Percent
&	And
e.g.	Example

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1. BACKGROUND

1.1. Introduction

Ethiopia has the largest livestock population in Africa, and raising livestock is a major livelihood activity and source of income for a majority of the population. However, livestock productivity is one of the lowest in the world largely due to livestock feed resources being inadequate in both quantity and quality. The Feed Enhancement for Ethiopian Development Project – Phase II (FEED II) has been funded by the United States Department of Agriculture (USDA) Food for Progress Program and has been implemented by ACDI/VOCA since September 2013. The project is a three-year intervention designed to increase livestock productivity through developing the animal feed sector.

FEED II field implementation began with an intensive baseline survey conducted in February and April 2014 to set benchmarks for outcome level indicators against which progress could be measured and the impact of the project assessed. Following the baseline survey, the project launched implementation in four regional states of the country (Amhara, Oromia, SNNPR and Tigray).

The ultimate goal of FEED II is to increase the incomes of Ethiopian smallholder livestock producers by improving access to, and use of consistent, affordable, high quality animal feed that can support greater livestock productivity and efficiency. To sustainably increase the incomes of Ethiopian smallholder farmers in project target areas, FEED II aims to increase the productivity of livestock and poultry by 15% by developing the animal feed sector and expand trade of agricultural products in the livestock and poultry sector by 15%. These objectives are to be achieved through four Intermediate Results (IRs), which address availability, access, knowledge about and utilization of feed resources.

FEED II project implementation covers four regions – Amhara, Tigray, Oromia and SNNPR – where over 80% of the country's livestock population resides. Within these regions, the project works in 39 woredas and 186 kebeles. It also works with a total of cooperative unions, which are the key entry and scalability points through which the project is implemented.

As FEED II is now over halfway through project implementation, ACDI/VOCA contracted ICOS Consulting PLC to conduct design and conduct a mid-term evaluation of the project.

This report presents the findings of the FEED II project mid-term evaluation that was conducted in the months of October and November 2015.

1.2. Objectives of the Evaluation

The midterm performance evaluation is part of the project formative process intended to provide an independent examination of the overall project progress and constraints related to implementation and effectiveness of the project interventions. It is also to draw lessons and generate recommendations for changes in programmatic approach and interventions to meet outcome and impact level targets. The specific purposes of the mid-term evaluation are to:

- i. Review and take stock of the implementation environment;
- ii. Assess the effectiveness and efficiency of implementation approaches and methods;
- iii. Assess whether targeted beneficiaries are receiving services and benefiting as expected;
- iv. Assess whether the project is on track to meet its goals and objectives;
- v. Assess the relevance of approaches and activities in relation to the goal and objectives of the project;
- vi. Review the project-level results framework and assumptions;
- vii. Identify measures/mechanisms for sustainability put in place by the project;
- viii. Document initial lessons learned; and
- ix. Recommend modifications or corrective actions that may be necessary in order to achieve targets and goals.

1.3. Evaluation Methodology

The mid-term evaluation of the FEED II project was conducted in a participatory and consultative manner based on the standard evaluation criteria such as relevance, effectiveness, efficiency, sustainability and lessons learned. The key evaluation questions that the mid-term evaluation addressed under each evaluation criteria and other evaluation tasks can be seen in the Terms of Reference presented in Annex 6. Three woredas from each region (12 in total representing close to 31% of the total) were visited for the mid-term evaluation. A multi-stage sampling technique was applied in the selection of project unions, woredas, kebeles and primary cooperatives and smallholder farmers. The sampling process started with the selection of cooperative unions using purposive sampling technique and in consultation with ACDI/VOCA. Those three FEED II unions that implemented everything including feed manufacturing were included in the sample. Eight of the 12 FEED I unions that reside around the selected FEED II unions and project woredas were also visited by the field team. The list of selected FEED II and I unions is presented in Annexes 4 and 5. Following the selection of FEED II unions, three woredas were selected under the Unions randomly. The list of these selected 12 woredas is presented in Annex 4. Two project kebeles were selected under each sample project woreda (in total 24 kebeles) by applying purposive sampling technique and in consultation with woreda level focal

persons. In each of the selected kebeles, the evaluation team consulted smallholder farmers and Development Agents (DAs) and other relevant stakeholders. A systematic sampling technique was applied to select direct beneficiary smallholder farmers. Two group discussions were conducted with beneficiary small holder farmers of each selected kebele: one with men beneficiaries and another with women. The evaluation team also identified and consulted some indirect beneficiaries that were followers of model farmers.

The mid-term evaluation was predominantly qualitative though some attempts were made to support it with some quantitative findings. Both primary and secondary sources of data were consulted. The evaluation team reviewed key secondary documents, including FEED II project documentations; national and regional policy and strategy documents; statistical reports, and other relevant. Primary data was gathered through interview from 133 key informants from several stakeholders, including USDA, project staff, relevant government offices from federal to local government levels and others. Forty-eight focus group discussions (FGDs) involving 217 women and 239 men smallholder farmers were also conducted (discussions with men and women farmers held separately). The evaluation team also conducted observations to see the status of nursery sites, feed manufacturing activities at unions and backyard production initiatives of farmers. Some success or case stories were also documented. Finally, each field team deployed to each intervention regions made presentations to share preliminary findings and observations with ACDI/VOCA regional staff, representatives from government, unions and other stakeholders. The qualitative data was analyzed thematically. Any quantitative primary data and others that were captured from secondary documents were presented to supplement and complement qualitative findings.

2. RESULTS AND DISCUSSIONS

In this section of the report, the findings of the mid-term evaluation are presented based on the standard evaluation criteria such as effectiveness, relevance, efficiency, sustainability and so on.

2.1. Effectiveness

The progress made against the project goals and objectives as well as each of the four intermediate results areas or outcomes are presented in this sub-section of the report.

2.1.1. Progress Against Project Goals and Objectives

The ultimate goal of FEED II is to increase the incomes of Ethiopian smallholder livestock producers by improving access to, and use of consistent, affordable, high quality animal

feed that can support greater livestock productivity and efficiency. To sustainably increase the incomes of Ethiopian smallholder farmers in project target areas, FEED II aims to i) increase the productivity of livestock and poultry by 15% by developing the animal feed sector; and ii) expand trade of agricultural products in the livestock and poultry sector by 15%. These objectives are to be achieved through four Intermediate Results (IRs), which address availability, access, knowledge about and utilization of feed resources. Although project achievements to date on the two objectives and four intermediate results have not been measured through survey at this stage, progress made so far on the objectives and result areas is presented below based mainly on analysis of qualitative data.

One of the objectives of the project was to increase productivity of livestock and poultry by 15%. Percent increase in unit productivity of fattened cattle, poultry and milk were the three indicators that were identified to measure progress on this objective.

Many stakeholders indicated that the project's contribution to increased livestock productivity and income of farmers is yet to come. They argue that livestock development and productivity improvement initiatives take time to bear fruits. As a result, they argued that it is too early to evaluate the impact of the project on income and productivity considering the fact that the project was implemented for the last two years. "Success of the activity in terms of farmers' revenue increment is yet to come," a key informant from Guagusa Woreda Livestock Office, Amhara Region said. Nevertheless they agree that the foundation work has been undertaken successfully which will increase livestock productivity of farmers.

As much as the number of stakeholders that believe that measuring the project's impact on livestock productivity is too early to talk about, there are many others that already witnessed improvements in productivity. A key informant from Tigray Region Livestock Department was quoted as saying "The farmers have achieved increments in dairy production which is attributed to the project implementation. More specifically, the farmers' use of Alfalfa feed contributed to improvements in milk production." Another key informant from Machakel Woreda Livestock Development and Animal Health Office, Amhara Region, also said "Although it is inappropriate to judge the project's impact on productivity in such a short period, we have observed that some farmers have achieved an increase in milk yield as a result of feeding improved forages." An official from Farta Woreda Agricultural Office also indicated that he observed milk yield increment from 6 to 10 liter/day/cow as a result of feeding cows with dairy concentrate ration. Similarly, a development agent from Daga Temben Woreda said that due to improved feeding practice, farmers have obtained 2 litters of additional milk per day.

Smallholder farmers that participated in group discussions also reported that the project has already increased their livestock productivity. Farmers from Soyama kebele in Becho Woreda (Oromia Region), for example, indicated that project intervention increased their milk production, improved body condition of their animals and reduced fattening period. Some quantitative data gathered from beneficiary farmers that participated in FGDs also corroborated qualitative findings. As shown in Table 1 below, compared with the baseline milk productivity of 1.53 liters per cow per day, a notable improvement was observed during the past three years as evidenced by a per cow productivity of 4 liters at the time of the mid-term evaluation. The reported average milk per cow was also considerably higher than the national average 1.32 liters per cow per day milk yield reported in the 2012/13 Agricultural Sample Survey (CSA, 2013)¹. In addition, smallholder farmers seem also to have increased their livestock headcount. Poultry holdings per household, for example, increased from 5.75 at baseline to 9.1 at the time of the mid-term evaluation. Sheep and goat holdings has also increased from less than 4.5 at baseline to 6.8 at mid-term evaluation. Cattle holdings increased from 4.3 at baseline to 5.0 at mid-term evaluation time. It is, however, important to note that smallholder farmers with financial capacity and access in some areas have already started to reduce the number of their livestock by replacing local breeds with improved cross-breeds so as to improve their productivity.

Table 1: Livestock ownership and milk productivity

Region	Description	N	Number of Poultry	Number of sheep and goat	Number of cattle	Average number of Liters of Milk Produced per Cow per Day
Tigray	N	114	114	114	114	58
	Average		13.5	15.3	5.8	3.1
Oromia	N	110	110	110	110	85
	Average		6.5	4.0	5.5	4.1
Amhara	N	108	106	107	108	60
	Average		6.0	3.9	5.5	2.8
SNNP	N	126	123	122	126	107
	Average		9.8	4.1	3.4	5.4
National	N	458	453	453	458	310
	Average		9.1	6.8	5.0	4.1

Source: Small survey administered on smallholder farmers that participated in FGDs

¹ Central Statistical Agency (CSA). Agricultural Sample Survey: Report on Livestock and Livestock Characteristics (Private Peasant Holdings). Volume II. 2012/13 [2005 E.C.]

Many stakeholders also stated that farmers that have been engaged in animal fattening earned more income and improved their livelihood. Some smallholder farmers that participated in one of the FGDs from Medego Kebele of Laelay Maychew Woreda reported that the project helped them increase their per-cow milk production by 3 liters. Some of them also managed to get a profit of Birr 1000 to 3000 within three months of fattening activity. Two smallholder farmers from the same woreda also reported that they managed to deposit Birr 10,000 from its poultry production.

The project's impact of livestock productivity was not also restricted to model farmers or direct beneficiaries. There were indications that such productivity improvements were also experienced by follower farmers. Some follower farmers that adopted technologies and techniques transferred by their model farmers were able to increase their productivity. A follower farmer who lives in Soyama kebele in Becho Woreda (Oromia Region) indicated that milk yield of his cow increased when he starts using improved forage. He produces about 8 liters milk yield per day from his cow, sells 5 liters to the nearest town and uses the rest 3 liters milk for home consumption.

The case story presented below may showcase how the project support turned the life of a woman farmer around in SNNPR.

Almaz, who is 42 years old and lives in Chenchu Woreda, SNNP region, is the one of women smallholder farmers that achieved outstanding performance within a short period of time following FEED II project support. What makes Almaz different from most women in her village is her conviction towards pursuing a better economic life. Unlike the women in her village, she works closely with the agricultural extension workers, listens to their advice, is open to learning new ways of farming and applies with confidence in terms of getting better products as the result of the new agricultural techniques and technology. This has transformed her life for good and made her a role model for all the women in her village. Almaz used to have very small income which she generated by selling crops and fruits.



Almaz

The main assistances provided to Almaz like other beneficiaries included training, technical support, and improved forage seed and seedlings. She also attended experience sharing visit organized by the project which was an opportunity for her to see the best practices and success achieved by other smallholder farmers. Having received the above technical and capacity building support, Almaz started planting animal feeds in her 200 m² crop land. She used to feed her cows by investing Birr 100 per day on average. After planting the improved forage, she was able to save the money that she used to spend to buy animal feeds and managed to generate Birr 19,700 income from surplus feed.



Alamaz's improved forage plantation site

Almaz sold the local cows and bought improved breeds. Having one improved cow rather than 3 local cows, according to her, is advantageous as it saves animal feed and space while getting similar amount of milk. Almaz acquired five improved cows. She gets 20 liter per day per cow (100 liters from 5 cows). At a selling price Birr 13 for one liter of milk, she earns Birr 1300 per day from sale of milk. Almaz was also recognized as the best model smallholder farmer.

While many stakeholders agree that the project has started increasing livestock productivity, there are also other stakeholders that argue that the improvement was negligible. The major reasons mentioned by these stakeholders revolved around the fact that smallholder farmers still rely on local breeds that provide limited opportunities to improve their productivity. As a result, their use of improved animal feeds and feeding techniques has not increased their productivity. Besides, a considerable number of smallholder farmers that experienced increased productivity following the project support indicated that their lack of access to central markets to sell their livestock products at reasonable prices didn't allow them to increase their income. To quote some key informants:

"The amount of milk the cows yield per liters per day has not improved yet. Unless hybrid or cross-breed cows are made available to the farmers, it would be difficult to improve productivity even though more is being done on the forage production. However, fattening is going very well and many farmers are increasingly engaging in it." A development Agent at Negassa Kebele in Guto Gida Woreda, Oromia Region.

"We have managed to produce an additional milk of 3 liters/cow. Unfortunately, however, there is no market for our products. Some of us that are engaged in animal fattening are also being challenged by the current drought, which forced everybody to be a seller that brought down the price." Smallholder farmers that participated in group discussion from Rewyan Kebele, Kafta Humera Woreda, Tigray Region).

INTERMEDIATE RESULT-1: Improved quality of land and water resources

Under the first result area, the project targeted to cover 6,000 hectares of land to forage, half of it on degraded land with the aim to improve quality of land. Project progress reports showed that the project has managed to cover 2,624.4 hectares of land to forage up until September 2015 without including plot of land covered by nursery sites established on degraded land that often cover 1.5 to 3 hectares of land. The reported figure consisted of communal land that were eroded or otherwise degraded, which included rehabilitation of 100 hectares of hill side in SNNPR; forage plantations and rehabilitation of 70 hectares of gully and eroded land Amhara region; and forage plantation in 75 hectares of communal grazing land in Tigray region.

In those project areas where the degraded land rehabilitation was implemented, key informants indicated that the planting initiative has served dual purposes: rehabilitating degraded land and providing quality feed to nearby farmers. A development agent from Chenchu woreda (SNNPR), for example, considered the project very successful in supporting smallholder farmers to rehabilitate degraded land. According to him, apart from planting forage, the project has also built fences around degraded land to reduce further degradation that could be caused by animals, which, in some areas, halted soil erosion. To quote some key informants:

"The project identified a highly degraded land dissected with gullies for reclamation by planting selected forage plants that helped halt soil erosion and at the same time provide animal fodder for cut-and carry uses by the community. This activity was successfully implemented and the achievement in terms of recuperating the degraded land and fodder development was magnificent. The rehabilitated land is now serving as a model to scale up the approach in other degraded areas." Official from Machakel Woreda Agriculture Office, Amhara Region.

"In the past two years about 16.7 hectare of degraded land in the four kebeles has been covered with improved forage plants. As a result, the condition of the land has improved, and the forage plant is protecting soil erosion and further degradation has stopped in the area. But more effort is needed to cover more such land in forage." Government Official from Dalocha Woreda Animal Production and Forage Development Office, SNNP Region.

The project's efforts to rehabilitate degraded land through forage planting was undertaken by organizing farmers to build soil conservation structures; providing seeds and planting materials of different fodder species that were planted along the conservation structures; and organizing experience exchange visits to other areas with successful similar activities. The training provided by the project has also increased farmers' awareness on land protection from degradation. Some farmers have even made terraces in order to protect their land from soil erosion. Beneficiary farmers near the degraded land selected for rehabilitation have been increasingly participating in conservation activities. They have also been benefiting from the forage grown at degraded lands in their areas. As the forage developed at degraded lands are providing additional animal feed for nearby farmers, it is contributing to the decrease in grazing pressure on existing pastures and rangelands. To quote some key informants:

"Assisted by the project, organized farmers have built soil conservation structures on a degraded area of about 4 hectares. Half of the area has been planted with selected forage species such as Napier and Desho grass so as to stabilize conservation structures and at the same time provide animal feed. Farmers have started to clip these grasses that they share and feed their animals kept tethered at home." Machakel Woreda Livestock Development and Animal Health Head, Amhara Region.

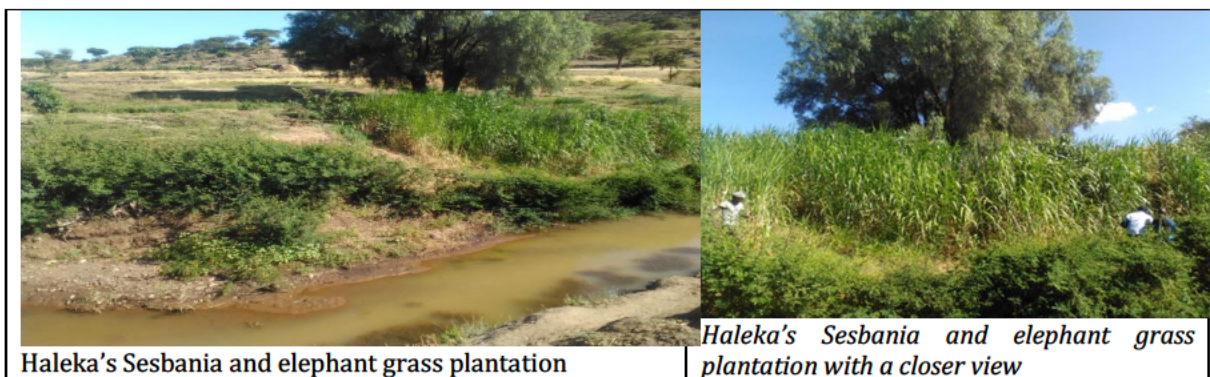
“Two beneficiary kebeles are mountainous and has degraded places. The farmers in this area have started utilizing the degraded land for forage development. As many of the selected farmers are not situated in mountainous places, however, the performance in improving degraded land by the farmers is limited.” Experts from Kedida Gamela Woreda Livestock and Food Process and Forage Development Office, SNNPR)

As part of its aim to improve quality of land, the project has also been facilitating sustainable forage production at smallholder farmers’ lands. Indeed, forage production at smallholder farmers’ backyards and mainlands accounted for a larger proportion of the 2,624.4 hectares of land covered to forage up until September 2015 through the project support. Considerable number of farmers indicated that availability of animal feed has increased over the past two years due to their engagement in improved forage production at their lands. The increased animal feed that was made possible with the project’s support has helped them conserve forage during a time of year when it is plentiful for feeding at a later time when feed is in short supply. Many farmers indicated that the use of improved forage has increased their livestock productivity. Apart from providing additional forage, farmers’ increased engagement in improved forage plantation in their backyard and sometimes in their main land has also contributed to improvements in the quality of land through reduction in soil erosion and other mechanisms. This was also widely recognized by stakeholders across the intervention areas. A key informant from Daga Temben Woreda Agriculture Office, Tigray Region, for example was quoted as saying:

“As rehabilitation of degraded lands required a lot of resources, the project didn’t implement any activities on degraded land in our area. But the project indirectly supported the improvement of degraded land by facilitating the planting of different forage crops at farmers’ backyard and crop land.”

The case story presented below could also illustrate how the project helped a farmer to produce improved forage while rehabilitating his land.

<i>Haleka Habtu is one of the beneficiaries of the FEED II project where he received forage seeds and vegetative materials in addition to the trainings on how to grow them. He lives in Laelay Maychew woreda, Medego kebele in Tigray region. On the basis of the trainings and material supports obtained from FEED II project, he planted the forage seeds and vegetative materials. The training provided by the project also helped Haleka learn how to grow more productive forages in his backyard. As his land was near the small river (as shown in the pictures below), the soil erosion around the river bank/side was a big problem.</i>	<i>Right after the training from FEED II project, he planted forage seeds like Alfalfa, Sesbania, Elephant grass, Desho grass and Cowpea on the river bank. Apart from reducing soil erosion, the forage is serving as a best substitute to other animal feeds. He also found the forage highly productive to fatten cattle. He also noticed that the forage plants protected his land from further degradation/soil erosion that used to be the case especially during the rainy season.</i>
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Considering the fact that the less than 50% achievement made by the project during the first two years of implementation on the first intermediate result area, it can be said that it would be less likely for the project to achieve the three years target. The project's intervention on degraded land rehabilitation was not also evenly implemented across the project woredas/kebeles, which might be due to unavailability of degraded land in some areas, high resource requirements of degraded land rehabilitation, and other related issues. As degraded land rehabilitation is undertaken on communal lands, the project had to also engage in lengthy consultations with the community and other stakeholders, which might also have contributed to the slow progress. In sum, while the evaluation team recognizes that the foundation work undertaken by the project may accelerate its performance on the result area, much needs to be done to achieve the target in the remaining project period.

Intermediate Result-2: Improved/Increased use of agricultural techniques and technologies

Under the second result area, the project aimed to increase use of agricultural techniques and technologies by farmers and unions through the development of feed ingredient supply chain, feed manufacturing enterprises and sustainable forage production. The findings of the mid-term evaluation are presented below under each of these major initiatives.

2.1. Feed ingredient supply chain development

The project planned to increase availability of improved inputs by developing the feed ingredient supply chain. In this regard, the project provided in-kind and/or cash grants disbursed to feed in-gradient supply chain actors. Technical assistance was also provided to 15 (out of the overall three years target of 20) feed ingredient supply enterprises and other input and service providers. The project has also trained 18 mechanics drawn from universities and unions to repair feed manufacturing equipment.

The project has also strengthened the feed ingredient supply chain and service sector by

supporting local manufacturers to develop their capacity to manufacture, maintain and repair various types of equipment commonly used in the processing of livestock feed. In this regard, the project technically supported and granted three (out of the three target of four) manufacturers to design and manufacture prototype feed manufacturing equipment. Prototypes were also manufactured by the grantees. Grantees were also very appreciative of the project support. They indicated that the support has helped them to build their capacity and manufacture machines. One of the grantees consulted for the mid-term evaluation also stated his readiness to take more order for the feed manufacturing machines from the project and other stakeholders. The grantee is also planning to strengthen its capacity by collaborating with other companies.

FEED II project has also trained 18 (above the three years target of 16) mechanics drawn from universities and unions to repair feed manufacturing equipment. The training was considered vital by unions and other stakeholders to ensure availability of maintenance skills that they needed for their feed manufacturing machines. Involvement of universities in the training was also a good strategy to ensure continued supply of such training services in the future. Many unions, however, still fear that they may not be able to keep trained mechanics due to staff turnover. Hence, continued access to such training services is suggested. Future training initiatives may need to consider involvement of technical and vocational training colleges from the project intervention areas for sustained access to such training services.

Linkages between private sector feed ingredient suppliers and feed manufacturing enterprises were also created with the project support. Unions consulted for the mid-term evaluation indicated that the established linkage enabled them have access to regular supply of ingredients. As a result of the strengthened input supply system, production and productivity of manufactured feed has increased. Nevertheless, the cost of ingredients has remained high which also forced unions to offer their formulated at higher prices that are unaffordable to most farmers. Besides, although there were improvements in supply, feed manufacturing plants are still being challenged by unavailability of ingredients that they need for feed formulation. Unions may also need to be supported to replace existing expensive ingredients used for formulated feed production with locally available and cheaper inputs.

As part of the ingredient supply chain development initiative, FEED II provided capacity building support for Ethiopian Animal Feed Industry Association and Veterinary Drug and Animal Feed Administration and Control Authority so that they could deliver the required services to the feed sector. The project also strengthened feed quality control and standards enforcement mechanisms by providing training and supporting staff of the Veterinary Drug and Animal Feed Administration and Control Authority, and Ethiopian Animal Feed Association to participate in the American Annual Feed Administration Conference that was held in Atlanta, United States, which was found supportive to regulate the qualities of animal feeds in the country. The project has also been supporting the Ethiopian Meat and Dairy Technology Institute to collect, analyze and distribute transaction data from feed and livestock industries.

2.2. Feed manufacturing enterprise development

Baseline findings showed that farmers rarely used factory formulated or concentrated animal feed. Lack of access and availability as well as high cost of such feed were the factors behind the limited utilization. Against this backdrop, the project exerted much effort to create access to, increase availability and improve affordability of manufactured feed by supporting cooperative unions to establish and/or expand feed manufacturing enterprises as described in the previous section.

FEED II project targeted to establish 12 new union-owned feed manufacturing plants. Accordingly, FEED II signed agreements with the new 12 unions to establish feed manufacturing enterprises. FEED II also signed grant agreements with the existing 12 feed manufacturing unions that were established under the FEED I project to help them expand their businesses.

The project provided training to 30 staff drawn from FEED II Unions to establish and operate feed manufacturing enterprises. The training topics covered included commercial feed manufacturing and feed formulation, business plan development and recordkeeping. FEED II also facilitated and organized both International and local experience sharing visits to 30 and 102, respectively, participants drawn from unions, government line offices. FEED II Unions were also provided or are to be provided with grants for feed manufacturing equipment, transportation to their sites, installation, shed construction and training of mechanics.

Until September 2015, the FEED II project has established four new feed manufacturing enterprises at four cooperative unions. In addition, establishment of feed manufacturing plants at six other unions were in progress while it was at early stage for the other two. The fact that establishment of the feed manufacturing plants at FEED II unions is at different stages was also observed by the evaluation team. In some areas such as Bekoji and Woliso (Oromia region), the construction of the shade/building that will house the manufacturing machinery is 40% to 50% completed. In Guto Gida and Gibe Didesa Unions in Oromia region, and Admas Union in Amhara region, the shade construction has been completed and installation of the machinery was being or expected to be undertaken at the time of the field visit. The construction of shade is also yet to start in one of the unions in SNNPR visited by the evaluation team.

Figure 2: Shades construction status at three FEED II unions in Oromia Region



FEED II has also continued capacitating the feed manufacturing enterprises established with the FEED I project support. FEED II also signed grant agreements with the existing 12 feed manufacturing unions that were established under the FEED I project to help them expand their businesses. The project also provided technical support in business plan development and marketing. Management and other staff of unions received training on different topics and participated in experience sharing visits organized by the project. The project facilitated business to business workshops for feed manufacturing unions to help them promote their products to their existing and potential customers.

Through the FEED II project support, FEED I Unions were also able to increase their capacity utilization. Daily production has increased considerably during the past two years. Daily feed production at Enderta Union (Tigray region), for example, has increased from 42 quintals per day two years ago to 120 quintals per day at present. Licha union has also managed to increase its daily feed production from 20 quintals per day to 80 quintals at present. "Under Feed I the production was less than 30% percent of actual capacity. At present the daily production on average reached 80 quintals. FEED II project played important roles in facilitating access to ingredients and creating awareness among farmers and other stakeholders on manufactured products. The mill is now able to manufacture various feeds," feed manufacturing unit manager, Sidama Eltu Union, SNNPR, said. The recent drought experienced by the country has also created greater demand for concentrated feed, which is expected to increase their revenue and profit from feed production. Attracted by the growing demand, many unions expressed their desire to expand their plant capacity. Wonji Union's (Oromia Region) feed production, for example, has approved purchase of better manufacturing machine that can produce 20 quintals per hour as presented in Box 1 below.

Box 1: Wonji Union, Oromia Region

The Wonji Area Sugar Cane Growers' Cooperatives Union has a total of about 26,000 smallholder members registered under 32 primary cooperatives. They have about ETB 17 million capital. Moreover the union has 7000 hectares of land for sugar cane production. The Union is engaged in animal feed formulation and distribution, agricultural input distribution, buying and selling of crops to surrounding market with fair price to stabilize the market. The manufacturing unit of the Union has been working on ration formulation for dairy, fattening and poultry. The feed mill is formulated from wheat bran, cotton seed, limestone, salt, molasses, noug cake, maize, vitamin and minerals.



Formulated feed

The technical, sales and profit of the enterprise has increased due to support of FEED II in terms of training, grant and market linkage. The feed manufacturing unit currently produces about 111,000 kg per month, up from about 45,000 kg per month before two years. The formulated feed at feed manufacturing unit is also used as source of feed for fattening farm of the union.

The union has budgeted ETB one million to purchase better manufacturing machine which can produce 2000 kg per hour. The unions have strong financial and human capacity to sustain the feed manufacturing and increase the involvement of the union in feed business. They have a computer data base in which cost of input, cost of production, revenue and profit are stored and analyzed.



Feed manufacturing expansion project shade construction

Some of FEED I unions supported by FEED II project visited by the evaluation team reported that they made a profit from their feed manufacturing business. As shown in Table 2 below, average monthly profit made by FEED I unions ranged from Birr 8,000 to Birr 80,000.

Table 2: Daily production and monthly profit of FEED I Unions Visited by the Evaluation Team

Name of union	Daily Production (in quintals)		Current Monthly Profit	Customers
	Before Two Years	At present		
Wonji ²	17	42	Not provided	Small holder farmers, surrounding urban dairy and fattening farms, commercial dairy and fattening farms from different area and non-member primary cooperatives. It has two retail shops as well.
Ambo	NA	NA	NA	NA
Wodera	12	80-100	20,650	Dairy production cooperatives are the main customers followed by agricultural R and D institutions and primary cooperatives.
Merkeb	48	110	8,000	Union shareholder farmers, research institutions, milk producers- individuals and cooperatives, those engaged in fattening activities.
Sidama Eltu	20	80	32,000	Union members and non-embers, private milk processors, government research centers, and cattle fattening enterprises
Licha	20	80	50,000 to 80,000	Farmers, private commercial enterprises, government institutions such as agricultural research centers
Wolwalo	20-35	75	67,500	Dairy production cooperatives and individual farmers that are reached through primary cooperatives.
Enderta	42	120	21,000 ³	Different unions, primary cooperatives, smallholder farmers, private commercial dairy farms and institutions such as Wukro TVET and Tigray Development Association.

Source: Union and feed manufacturing plant managers

The project also linked these unions with suppliers of ingredients and customers of formulated feed. Unions were supported to raise awareness and demonstrate concentrated feed to potential users of the concentrated feed. As a result, awareness on and recognition of manufactured feed is increasing from time to time due to various demonstration and popularization activities of the project. Moreover, the FEED II project has supported FEED I unions to expand their customer base. There have also been positive changes in distribution channels used by unions. Enderta Union Manager and feed manufacturing unit manager, for example, said “Before the support of FEED II project, the market channels for selling of manufactured feed were very limited. FEED II project created market demand by

² The daily production capacity of the feed manufacturing plant at Wonji Union was calculated by dividing the monthly production data obtained in kilograms (45,000KGs per month production before two years and 111,000 KGs per month production at present) by 26 assumed working days per month (excluding Sundays).

³ This was determined by dividing the Birr 500,000 profit generated by the union during the past two years by the number of months (24).

linking our union with other new unions and buyers.” An Official of Tigray Region Cooperative Promotion Agency was also quoted as saying:

“The unions used to be operating below capacity due to lack of good promotion activities when they started production. Some produced feed stayed for longer periods of time in store due to lack of market and awareness. Currently, the problem of the market is solved due to promotion activities undertaken with the help of FEED II project. The unions also started advertising their products to various stakeholders to solve the market problem.”

The FEED I unions channel a portion of their manufactured feed through their member primary cooperatives. In addition, unions sell their feed products to private commercial enterprises, research institutions, and others stakeholders from their store. Some Unions such as Wodera Multipurpose Farmers’ Cooperative Union have also offered credit facilities for primary cooperatives and delivers their feed products directly to some clients that make larger orders. The fact that unions are working with their member primary cooperatives to channel their feed products is an encouraging development to make the product accessible to farmers. Overall, however, marketing of feed is still mainly limited to the place of production.

The project has also helped many of the FEED I unions to diversify their feed production to be used for various types of livestock. As a result, some unions that used to focus on production of feed for fattening and dairy production are now able to produce feed for poultry production. FEED II Unions that have started concentrated feed production also maintain proper records pertaining to their feed manufacturing business.

The project has undertaken commendable work in creating farmers’ awareness about formulated feed. Most farmers consulted for the mid-term evaluation confirmed their awareness and expressed their strong desire to buy and use them. Indeed, many farmers stated that they are looking forward to buying the formulated feed from their respective unions when they start production, which also shows awareness about the source of formulated feed. Women smallholder farmers that participated in one of the FGDs conducted in Guto Gida Woreda (Oromia region) said, “We are aware of concentrated animal feed but we do not have access to this product. We are expecting supply from the feed processing enterprise established at the union in the near future.” This shows that the project was successful in creating awareness so that farmers would be able to use the formulated feed when they have the capacity to do so. Even so, overall market awareness about the values of using formulated feed is still a challenge though demand for feed is currently increasing due mainly to shortage of feed brought about by the drought.

Although the project has increased actual and potential feed manufacturing capacity in the project areas, data gathered from smallholder farmers and key informants revealed that much has not changed in terms of accessibility, affordability and availability of concentrated feed in the project areas. Smallholder farmers that participated in many of the

FGDs stated that use of concentrated feed has remained limited due to lack of access and high price. Farmers from Lemat kebele in Dega Temben Woreda (Tigray Region), for example, stated that as feed shortage is a critical problem in the area, some of them have been using concentrated feed. However, they considered the feed inaccessible and unaffordable to most farmers. Development agents from Tigray region also had similar assessments. “The use of concentrated feeds has been very limited since it is not accessible in the nearby areas and it is not affordable to farmers. Farmers that tried to buy such feed had to get it from Mekele (regional capital city),” DA of one of the Kebeles in Dega Temben Woreda, Tigray Region, said. These views of the smallholder farmers and the DA were also the views of most farmers and other stakeholders consulted by the evaluation team.

The fact that FEED I unions have limited production capacity and FEED II unions have not started production is probably the major reasons that farmers were not able to access such feed. Availability and access to concentrated feed for farmers in the target areas is, however, expected to increase when all the unions in which feed manufacturing enterprises are established start production and expand their distribution mechanisms. In other words, the project has increased current and potential availability of formulated feed through the establishment of feed manufacturing plants at cooperative unions. The fact that the feed manufacturing plants are established at unions has also paved the way for improved access to such feed by farmers in the future. Some improvement in accessibility of such feed were also observed as some of the FEED I unions supported by the FEED II project have started distributing their feed products to smallholder farmers through their primary cooperatives.

The price of concentrated feed has remained too high for most farmers to afford. Indeed, the price of concentrated feed has almost doubled during the past two years. A key informant from Licha Union, for example, stated that the per-quintal price of concentrated feed has increased from Birr 380 in 2013 to Birr 500 in 2015. In some areas, a quintal of concentrated feed is being sold for over Birr 600. As a result, most smallholder farmers cannot afford to buy feed produced by the unions. The high price was largely associated with the high ingredient costs that are beyond the control of the project as well as unions to influence. The price of inputs is also increasing from time to time.

Many farmers and key informants indicated that adoption of formulated feed may not go well even when it is accessible unless the feed is offered at much lower prices and/or mechanisms are created to link farmers with central markets to sell their livestock products at better prices. A key informant from Enderta Multipurpose Cooperative Union said “The price of the feed is relatively high, as a result, most smallholder farmers cannot afford to buy the feed produced by the union, which is also due to the high price of ingredients. The farmers cannot afford the feed mainly due to lack of appropriate market to sell their dairy products.” This suggests that increased livestock productivity through use of better animal feeds or other technologies may not translate into increased income of farmers. A farmer from Yewula kebele in Machakel woreda was quoted as saying “Market value of milk is too low to cover cost of production. For example a liter of milk is sold at

local market for six Birr while the same quantity of bottled water is worth 12 Birr.” Discouraged by the local market prices, smallholder farmers in some areas rather used their livestock products such as milk for home consumption. The fact that unions’ feed manufacturing plants have limited production capacity even when they operate at full capacity may not also allow them to achieve economies of scale and reduce their cost of production that could finally be passed on to farmers in the form of lower selling price.

2.3. Sustainable Forage Development



Sustainable forage production was one of top priorities of the project in the past two years with the aim to increase livestock productivity. In this regard, the project has supported the establishment/development of 14 (out of the three year target of 16) union-based forage nurseries that produce seeds and seedlings for improved forage production. The project assisted the establishment/development of the nursery sites with training, and technical assistance as well as provision of parent seed and seedlings. Moreover, the project supplied financial and in-kind supports for constructing fences and store. It also provided tools, irrigation pump, accessories and others necessary for cultivation. It is also the project that pays the salary or provides top-ups for the site staff. Furthermore, the project capacitated 95 union staff and government extension agents on nursery management. It also organized domestic learning exchange visits for 164 forage production stakeholders.

Some nurseries have now become sources of seeds and seedling, thus reducing the dependency on the project and government. Many stakeholders appreciated the project’s effort to build local capacity to produce improved forage seeds and seedlings. The woreda governments are also the ones that are running the nursery sites which is vital for their sustainability. Indeed, some of the nursery sites that the project has been supporting were established by the government several years ago. However, the nursery sites are situated in a small plot of land. Most stakeholders consulted for the mid-term evaluation indicated that the sites have very limited capacity to meet the growing demand for forage seeds owing to the increased awareness created by the project. Hence, the need to expand the existing nursery sites while establishing new ones in various woredas and kebeles has been strongly suggested by stakeholders for sustainable improved forage development.

“The nursery site is providing forage seeds to farmers free of charge with the aim to create awareness on the need to use improved varieties. It is meeting some 20 percent of their current demand. The site is cultivating seeds on 1.5 hectare of land for the four beneficiary kebeles which is inadequate. Up to 5 hectare of land is needed to cover the demand of the whole beneficiaries. As the seeds are provided for free with the aim of creating awareness, we cannot talk about affordability. However, in addressing sustainability the intervention needs adequate financial support from including the government, as well as assigning of a permanent staff at woreda level who has the capacity to fully supervise the activity. Moreover, strong and continuous awareness creation activity on farmers needs to be made to make them obtain the seed on payment.” DA of Burka Dilaba Kebele in Dalocha Kebele, SNNPR.

Most of the nursery sites visited by the evaluation team are under unions while their operation is managed by livestock/forage experts from the woreda agriculture and/or

livestock agency offices. A nursery site manager or other government staff are managing the sites with technical and financial support from the project. The role of unions in nursery operation and management is very limited though there were some variations. Recognizing the limited involvement of unions in nursery activities, some woreda governments even started to allocate budget for the site. A key informant from Machakel Woreda (Amhara region) was quoted as saying “...as the Union does not know what is going on at the nursery site. Realizing the impending problem, the Woreda Agriculture Office has allocated a budget to run the nursery activities.” The fact that many nursery sites are located far away from the unions was identified as a factor behind the limited involvement of unions in nursery management. Unions may not also be strongly motivated to involve in nursery site operations as they may not directly benefit from it, at least for the time being, as many of the nursery sites that have started production have been distributing their produces to farmers free of charge. There are, however, exceptions. The nursery site under Ambericho union in SNNPR is one of those exceptions that have started generating income by selling seeds and seedlings to the project itself as illustrated below.

<p><i>The nursery site under Ambericho Union in SNNPR was established in June 2014 on three hectares of land provided by the kebele. It obtained the seed from the project through Ambericho union. The site has been distributing the seed free of charge to the beneficiary farmers. But it also sold to ACDI/VOCA for its operation in Gurage zone and Sidama zone. The nursery site sold forage seeds and seedlings to the project and generated Birr 80 thousand, of which the Union got Birr 16,000.</i></p>	
<p><i>The site was established through the financial and technical support provided by the project. Nine laborers are employed and are paid by the project. The project provided variety of seeds that were suitable for the area/location. The major challenge to the nursery site is the shortage of water. According to the site manager, farmers have high demand for the product. As many of the farmers in the woreda own improved livestock breed, they have high demand for the feed, which is beyond the capacity of the nursery site.</i></p>	

Although unions are not that involved in the affairs of nursery sites, most of them seem to see the potential of nursery sites to improve availability of improved forage to farmers over the long term. They expressed strong interest to embrace and support the nursery sites when the project phases out. The training provided by the project to union staff on nursery site management has also enhanced their capacity to manage nursery sites. A nursery site manager of Guto Gida Woreda Nursery Site (Oromia Region), for example, said “I gained practical and theoretical knowledge on the preparation and production of forage seeds. Moreover, I am now able to identify which seed is better adapted to which weather condition and ecological system of the woreda.” However, several stakeholders, including union staff and managers, argued that unions lack technical capacity to manage the nurseries and ensure their continuation. Some of the Unions consulted for the evaluation also acknowledged their limitations and even suggested additional support to further strengthen their capacity in forage development. Considering the capacity gaps and limited

involvement of unions in the affairs of nursery sites, some key informants also suggested the need to either strengthen unions to have all the necessary capacities needed to fully own and run the sites or hand over to the woreda agriculture offices by ensuring that the government commits some budget and staff to run the nursery sites.

Regional variations were observed in regards to the capacity and operation of nursery sites. In Oromia, Amhara and SNNPR areas, some nursery sites were found relatively in better position to produce forage seeds and seedlings. Some farmers in those areas have sourced their forage seeds from the nurseries free of charge. In Oromia region, smaller nursery sites were even replicated around farmers training centers to serve as demonstration sites and produce additional seed and seedlings to meet the ever growing demand for such materials.

Ghibe Dedessa Union Nursery Site nursery site is found about 8km away from Nekemte City. According to site manager, the nursery site receives inputs from the Ghibe Dedessa Union (supplied by the project). Among these inputs fertilizers, different kinds of forage seeds and working equipment (water pump) are some of them. The project also provided financial, training and technical supports to the site manager. At the time of visit, the site has not started selling seeds/seedlings to customers. As a result, no revenue is recorded. But it multiplied and distributed small amount of seeds to the farmers through the Development Agents.



Rhodes Grass

The nursery site is being managed by the woreda livestock agency. Currently, farmers are users of seeds and seedlings produced at the site. It currently uses the project's vehicle to distribute its produces. The nursery site also lacks store to keep the produced seeds, and equipment such as Pick axe or "Doma", Shovel or "Akafa" are found in small numbers. According to the nursery site manager, the demand for the seeds and seedlings produced by the site is high and growing from time to time that the nursery site cannot satisfy.





Rhodes and Desho Grass

In Tigray region, the two nursery sites visited by the evaluation team have not started producing and/or distributing seeds and seedlings to farmers. There are also some nursery sites in the other three regions that have not started production. The quality of parent forage seeds supplied by the project to some nursery sites was identified as one factor that delayed production and distribution of seeds in some areas. In one of the nursery sites, it was learned that the Alfalfa seed planted at the site for around ten months has not reached for harvesting although it was expected to do so in four months' time. Some of the forage seeds like pigeon pea were not also found as productive as expected in some project areas. Shortage of water has also been another major challenge to produce seeds and seedlings at nursery sites. Lack of sustainable source of income to the nursery sites and shortage of seed supply in the market are other major challenges to sustain the nursery sites. In one of the unions visited by the evaluation team, employees of the nursery site have not been paid their salaries for over three months.

As part of its sustainable forage development initiative, the project has also planned to support establishment of 28 forage related enterprises to engage in commercial forage production. Progress reports showed that the project (until September 2015) has screened and shortlisted potential grantees, and signed agreement with four enterprises to establish commercial forage production related enterprises. Three more enterprises were also in pipeline to sign agreement. These commercial enterprises are expected to contribute to increased and sustainable forage production in the country. Although the evaluation team recognizes the work undertaken by the project, however, progress made to achieve the target set on this output indicator has been slow and would require strengthened effort to achieve it.

FEED II project has also facilitated sustainable forage development by supporting improved forage production at smallholder farmers' backyards and mainlands. This was undertaken by providing training, seeds and seedlings, and technical support. Until September 2015, progress reports showed that the project trained 20,211 (27.9% female) smallholder farmers on sustainable forage development. These farmers were reached through provision of training of trainers to 107 government extension agents and other relevant experts on forage plot establishment and maintenance. Woreda forage experts and extension agents have also been providing on-site technical support for farmers in the plantation of their forage seeds and planting materials. Project progress reports also showed that the FEED II project procured and distributed 40,503 kilograms (KGs) seeds and 2,015,850 seedlings during the first one and a half years of its implementation. Target smallholder farmers have received different improved forage varieties that included Elephant grass, Desho grass, Rhodes, Alfalfa, Fodder beat, Oats, Vetch and Sesbania.

As presented under Intermediate Result Area 1 of this report, the project has facilitated improved forage development in 2,624.4 hectares of land until in the first half of the project implementation period. Data gathered through interviews and observations from farmers and other stakeholders showed that farmers have planted improved forage varieties in their backyard and, in some cases, in their main crop land. Women farmers that participated in one of the FGDs from Chench Woreda (SNNPR) said "We have applied all the knowledge and skills that we gained from the training and experience sharing visits organized by the project. We have already started feeding our cows with mixed feed and planted improved forage on our land." Smallholder farmers (both male and female) from Lemat kebele in Dega Temben Woreda (Tigray Region) also stated that they have been applying the skills and knowledge that they obtained through the project to improve their forage development practices. The farmers planted different forage species at their backyard and started feeding their animals. Many farmers also indicated that the milk yield performance of dairy cows has increased when improved forage was fed. Animals are also said to have become healthier. As a result, the income from sale of livestock products has increased after intervention. The case story presented below further illustrates some of these trends.

<p>Mr. Tafesse Binchamo, 55, from Zato Shodela Kebele in Kedida Gamela Woreda (SNNPR), is married and have five kids. He completed 10th grade education and is farming on a 0.75 hectare of land. Prior to FEED II intervention, he used to allocate all of his land to crop production. He also used to feed his six cattle (all are improved breeds) using the available small grazing land as well as by providing crop residue, leaves of fruits, and purchased industrial by-products particularly furishka and noug cake. He recalled that the feed was not enough and, as a result, milk productivity was about 4 to 5 liters per cow per day.</p>	
<p>He was one of the first round trainees of the project. Since he was very much convinced, he decided to allocate half of his crop land to forage production and started to grow seven feed varieties. He was able to feed his cattle the improved feed and immediately obtained better results. He now, on average, gets 16 liters of milk per cow per day and sales milk, butter, and cheese in addition to the increased home consumption. He has even sold surplus forage he produced to others. The additional income obtained through the improved operation helped him buy more household assets and pay school expenses of his children. Encouraged by the improved result, he has a plan to engage in cattle fattening and more diary production activities in the future.</p>	

Some farmers have cultivated the different seed varieties on their main crop land. Among different varieties of forage plants, those that have high biomass such as elephant grasses are widely cultivated in the different project areas visited by the evaluation team. However, the adaptation of some forage plants such as Rhodes grass in some areas was poor, though delays in plantation might have contributed to that. Some farmers argued that the project has promoted limited forage varieties, which didn't give them the opportunity to select those varieties that are suitable to their land. Even so, the increased awareness about improved forage has motivated many farmers to give due attention to animal feed and allocate more plots of land for forage production. Some farmers have also expressed their interest to multiply and supply improved forage seeds to the market. Indeed, few of them have already produced surplus improved forage seeds and generated income by selling the surplus to other organizations. An official from Machakel Woreda Agriculture and Rural Development Office said "Some farmers have multiplied planting materials and sold for a good sum of money. For example, a farmer who participated in farmer-to-farmer experience sharing visits multiplied Desho grass and sold root splits for Birr 15,000 to a non-governmental organization (NGO)."

"We have applied what we learned. We learned how to establish improved forages, and feed with improved feed trough that we constructed. We have realized that feeding improved forages increases milk yield. To some extent our cows increased milk yield when we fed them improved forages. Milk yield increase recorded from 1.5 liter to 2 liters per cow per day. There is also reduction in wastage of feedstuff as a result of using improved feed troughs. However, the amount of forage we produce on small plots is not adequate to cover feed demand. We have shortage of forage seed and land, and there is lack of water for irrigation. There is also lack of productive dairy and poultry breeds." Smallholder farmers from Askuna Kebele in Guagusa-Shikudad Woreda (Amhara Region).

“Our livelihood is directly dependent on livestock. Our land is used for food crops production. Moreover, the productivity of the available pasture land is very poor and the main source of feed was crop residue which is poor in terms of quality. As a result there was a shortage of animal feed in our kebele. Our knowledge on improved animal feeding and management was also not satisfactory. Since the project implementation, however, we have started cultivating and scaling up the production of improved forage and obtained additional source of feed. We now give better attention for animal feeding, housing, cleaning and health management. As a result the productivity and body condition of the animals improved. The milk yield increased by 2-3 KGs per cow per day, mortality (of animals) has declined and market price of the animals increased due to improvement in their body condition. Our income from livestock is also increasing.” (Smallholder farmers from Dosho Kebele in Tiyo Woreda of Oromia Region).

Improved forage cultivated by farmers is also serving as additional source of feed for livestock in many areas. Some farmers store the feed for dry season feeding and multiply the seed for next season. Smallholder farmers from Negassa Kebele in Guto Gida Woreda (Oromia Region) that participated in one of the group discussions, for example, reported that they learned detailed procedure on improved forage production such as land preparation, harvesting, storage and feeding. They have also received and cultivated different variety of forage plants. The cultivated improved forage has reduced shortage of livestock feed and served as additional source of feed to the farmers.

Ruko Herato, 35, is married and a mother of six children. She lives in Dalocha Woreda in SNNPR. She has not attended any formal education. As a rural woman she is responsible for the whole household activities as well as managing the cattle, backyard cropping, and assisting her husband in farming activities. Prior to attending the FEED II training she did not have any idea about the various types of feeds and the way livestock needs to be fed. She was one of the female farmers trained in the first round on forage preparation, feeding management, and record keeping. She was very convinced about the benefits of improved feed preparation and feeding management put forward in the training. Hence, she immediately applied the knowledge and skills that she gained from training. She planted the forage seed in her backyard-an area estimated to be one-tenth of a hectare. She applied both mono cropping and inter-cropping with sorghum. Through better feeding technique of the harvested forage, she was able to fatten four cattle and sold them for Birr 33,000. She claimed that due to the improved forage preparation and feeding technique, she was able to get a great return which was more than three times of what she would have earned with the traditional approach.



The project has been largely distributing forage seeds and planting materials through unions and woreda agriculture offices starting from the second year of the project implementation. However, there were also cases where the project distributed forage seeds and seedlings directly through development agents bypassing unions and woreda agriculture offices. This, according to the key informants, created difficulties to some woredas to fully keep track of project activities. There are also no strong mechanisms to ensure DA's accountability as to whether they distributed the seeds and materials to the

farmers. It is true that DAs get the signature of farmers when they provide the seeds and planting materials and provide a copy of that to the woreda agriculture office. However, mechanisms to verify whether the DAs have fully distributed the seeds and materials they took from the woreda to the farmers have remained weak. The evaluation team didn't also see the value added from involvement of unions in seed distribution as they are not playing any roles in facilitating and tracking whether the feed has reached to the farmers.

The project has successfully increased farmers' awareness of improved forage development and created greater demand. Although the project is not expected to supply seeds needed by all farmers, the shortage of the seeds and planting materials, however, has remained the major concern of most farmers to engage in sustainable forage development. Model farmers also rarely reproduce their own forage seeds and share some with follower farmers. Some key informants argued that farmers might not have been well educated to reproduce their own seed based on the seeds distributed by the project for the first time. This is not, however, to deny the fact that some farmers have managed to produce seeds that went beyond their need and generated additional income. Some even suggested the need for the project to buy their seeds and supply to other farmers that have not received any seed. The fact that some seeds such as Alfalfa are more expensive seems to have encouraged some farmers sell the seeds rather than share their produces with other farmers for free. In some areas, farmers were not also able to grow the forage that they planted as the land was not suitable. In other drought affected areas, the planted forage seeds did not grow at all due to lack of rain. To make matters worse, it is often inaccessible and expensive for farmers to buy improved forage seeds from the market. Delays in distribution of forage seeds and planting materials was also identified as another challenge for farmers to grow forage and reproduce their own seeds. There are also others in areas such as Humera (Tigray) where some farmers didn't even get any forage seeds. These challenges have urged farmers to expect or request additional seeds and planting materials from the project.

"The project has been providing forage seeds to farmers free of charge with the aim of creating awareness on the need to use improved varieties. Farmers have received on average 1 to 2 kgs of seed, which is not enough to apply it on a larger plot of land. For example, as much as 10 kg is needed to cover a quarter of hectare. The nursery site is also producing and distributing forage seeds to farmers in the project kebeles though it is not enough." DA of Burka Dilaba Kebele in Dalocha Kebele, SNNPR.

Adoption of improved forage cultivation and other practices was also observed among some follower farmers though the transfer of technology and skills to follower farmers was generally considered slow by many stakeholders. Some follower farmers are increasingly adopting the technologies and techniques transferred by their model farmers, which improved their animal feed, and increased their livestock productivity and income. The case stories presented below are about follower farmers that have adopted technologies and techniques promoted by the project through their model farmers.

Ashenafi Kebede, a follower farmer who lives in Soyama kebele in Becho Woreda (Oromia Region), has gained skills and knowledge from his friend model farmer Belay Aseffa by cultivating different forage plants with him. He learned about land preparation for forage cultivation, seed and seedling management, harvesting and storage of forage plant and crop residue, silage making and urea-molasses treatment and efficient way of feeding animals. He has also received seeds and seedling of forage plants like Alfalfa, Desho grass, elephant grass and fodder beat and cultivated at backyard and cropland area. He said that the biomass of these forage plant is high and he is feeding his crossbred cows and local animals through cut and carry of green feed. In addition, he stores some amount of feed in hay shade for dry season.

He reported that the milk yield of his crossbreed cow has increased when he fed improved forage and practice better animal management. As a result, he has started selling milk, butter and cheese to the nearest town. In addition, he is producing additional milk for home consumption. The field team also observed forage plant and dairy production farm of the farmer. There are different forage varieties in the backyard of this farmer. He feeds his cows through cut and carry and direct grazing although direct grazing could significantly affect the future productivity of these improved plants. He has one high-grade dairy cow found in excellent condition which was also kept in good house. The owner said that the milk yield performance of this cow increased when he starts using improved forage. He produce about 8 kg milk yield per day from this cow, sell 5 liters to the nearest town and use the rest 3 liters milk for home consumption. The farmer stated that there is market problem for milk and he suggested small-scale milk processing machines to process milk in to butter and cheese so that the shelf life of the product can be extended.

Yohannes Keshamo lives in Kedida Gamela (SNNPR). The skill and knowledge was acquired through observation of the operation of the lead farmer. Improved seed was obtained from the lead farmer, the farmer training center, and the nursery site. Lack of feed and the subsequent poor milk production has influenced the decision to learn the new skill. It was performed through observation and discussion with the model farmer. The farmer adopted improved forage production, animal feeding, and construction and use of feeding trough techniques.



Yohannes on his cultivated backyard forage

The follower farmer indicated that he more than doubled his milk production, fattened cattle, and fast growth of livestock. He said that knowledge is very important and would be good if more farmers get access to such training and observation.

2.4. Overall adoption and application of new techniques or technologies introduced by the project

The FEED II project aims to train a total of 26,463 farmers with an anticipated 70% adoption rate of one or more agricultural techniques and technologies by trainees. Since the launching of project in April 2014 up until September 2015, FEED II project, according to progress reports, has trained over 20,211 (27.9% women) farmers to establish and maintain sustainable forage plots. Training was also provided to 12,826 farmers on improved farm management practices as well as animal feeding and nutrition. The project also procured and distributed forage seeds and other planting materials. Moreover, experience sharing visits were organized for representatives of farmers, unions,

cooperatives, government experts and other stakeholders. The training was cascaded to farmers through the provision of training of trainers (ToT) to government experts and other stakeholders. Agricultural extension agents and woreda livestock experts have also been providing on-site technical support to farmers.

Data gathered from farmers and other stakeholders has revealed that target groups are increasingly applying their knowledge and adopting associated technologies. Most farmers that participated in group discussions indicated that they at least have adopted one technology promoted by the project. However, key informants' views on the rate of adoption vary considerably in the different intervention areas. While some key informants such as DAs in few areas said that the adoption is in its initial stages, most others indicated that level of adoption was high. Adoption of a particular type of technology also seems to differ by gender. While women tended to adopt technologies relating to poultry and dairy production, forage development and animal feeding practices, men were more likely to apply fattening techniques and technologies. Adoption of forage technologies was considered limited among those farmers that produce cash crops or have less reliance on livestock.

The "model farmer" approach utilized by the project was also found effective to expand the reach of its training and technologies. Through farmer-to-farmer experience sharing visits the nearby farmers are also increasingly adopting the techniques and technologies promoted by the project. The one-to-three or one-to-five (even sometimes one-to-ten) approach is facilitating the transfer. A development agent from one of the kebeles visited in SNNPR, for example, indicated that around 60% of the model farmers have transferred their knowledge and skills to other follower farmers. The follower farmers' rate of adoption is also expected to increase when model farmers fully experience the benefits. However, the rate of knowledge and technology transfer to follower farmers was found generally slow.

The training of trainers (ToT) approach was also found very appropriate and effective to build local capacity and ensure the provision of sustained access to techniques and technologies promoted by the project. Several government experts, union staff and other stakeholders were capacitated. To quote key some key informants:

"The TOT approach at different level is the best strategy to sustain the intervention impacts. The TOT, participatory approach adopted by the project, and the experience sharing visits organized and conducted for beneficiaries, government and union staff were important to sustain project activities and results. On top of that, strong sense of ownership has been created." Head of Chenchu Woreda Agricultural and Rural Development Office, SNNPR.

"The ToT provided by the project was effective and is an approach that we support. The training provided by the project changed the attitude of farmers as evidenced by their allocation of valuable arable land to forage. The adoption rate of agricultural technologies is pretty fast." (Amhara Region Livestock Development Agency Head).

Several factors have hindered model and follower farmers' adoption of techniques and technologies promoted by the project. These include shortage of improved forage seeds and seedlings; distribution of less adaptable forage seeds; limitations in timely distribution of forage seeds; inaccessibility and unaffordability of formulated feed; lack of market for dairy products; high poultry mortality; unavailability of improved dairy and poultry breeds; dependency syndrome among some farmers; land shortage; lack of capital; lack of integrated package of agricultural technologies; drought and lack of access to water; weak follow-up and on-site support; and others.

Some limitations identified in relation to the organization and management of individual training sessions also hindered technology adoption. The major weakness identified by many stakeholders was the delays between training sessions that often led to planting of forage seeds after the raining season is almost gone. As the gap between training sessions widens, some farmers tended to forget the skills and knowledge they gained from the previous training sessions. The delay in delivery of some training has also resulted in late planting of forage. Stakeholders also advised the need for participatory training schedule preparation to synchronize their respective plans and reduce potential delays. The need to undertake post-training evaluation to measure its effectiveness was also another weakness identified to the project by most stakeholders. Besides, the inadequate follow-up and supervision after the delivery of the training sessions was consistently mentioned as a key limitation to the project. Some smallholder farmers also complained about the time allocated for the trainings. They indicated that two to three days are not enough for them to understand and conceptualize the skills. Use of local language in the delivery of training was also suggested by some key informants and farmers.

Intermediate Result-3: Improve farm management

Results from the baseline survey indicated that 64 percent of respondents did not have any idea which livestock and poultry feed ingredient reduces the incidence of milk fever and soft egg shells, respectively. A third of respondents did not know on what basis the decision should be made in selecting the best business for investment. Baseline survey results also indicated that, improved practices such as recordkeeping, baling, urea treatment of crop residues, and supplementation with urea molasses lick blocks; silage making and feeding factory formulated feed were rarely used.

The project implemented several activities to promote on-farm feeding practices. Progress reports showed that the project provided training of trainers (ToT) for 452 (out of the 700 three years target) government livestock experts, union staff and extension agents in improved farm management practices as well as livestock nutrition and feeding management, business plan development, and record keeping. Following the TOT, FEED II project provided on the same topic to 12,826 (48% of the three years target) smallholder

farmers until September 2015. The training sessions included theoretical/classroom sessions and practical demonstration and field visits. The practical sessions included feeding trough construction, silage making and urea treatment. Project progress reports also showed that 120 smallholder farmers have participated in domestic exchange visits.

The findings of the mid-term evaluation has also revealed that farmers use cut and carry system to feed green forage plants that they planted in their backyard or main land and store some amount for dry season feeding. They have also started better way of storing crop residue to reduce wastage and maintain quality by keeping in shelter to avoid direct exposure to sun. Smallholder farmers from Soyama Kebele (Becho Woreda, Oromia Region) that participated in FGDs indicated that they have cultivated the improved forage seed varieties provided by the project on the backyard and main crop lands, and use cut and carry system to feed green forage plants and store some for dry season feeding. Women smallholder farmers from Lemat Kebele (Tigray Region) also indicated that they have implemented zero grazing after the project intervention. They also practice stall feeding and feed three times per day. The farmers are also feeding straws by mixing green forage.

Many farmers consulted for the mid-term evaluation also indicated that the project has improved their knowledge of modern animal feed management and animal production. Their attitude has changed in favor of improved forage utilization and feeding techniques and the trend is encouraging. There were noticeable improvements in animal feeding and management such as construction and use of improved feeder troughs and regularly conserving forage as hay. Construction and use of improved feeding troughs has also reduced wastage of feeds. Farmers are also increasingly giving more attention to animal feeding, housing, cleaning and health management. "We learned how to feed with improved feed trough that we constructed. As a result, there was reduction of feed wastage. We have observed an increase in the milk yield of our cows due to improved feeds and feeding techniques," smallholder farmers from Askuna Kebele in Guagusa-Shikudad Woreda, Amhara Region, said.

Farmers' increased awareness and knowledge on poultry and livestock nutrition and animal management has encouraged them to take important decisions such as replacing local breeds with improved ones and keeping a small number of cattle and chicken. Some farmers that participated in group discussions reported that they sold their local breed cattle and chickens and replaced them with improved ones. As a result, their milk and egg production and productivity has increased. "We have replaced local chickens with improved breeds that give one egg per day which is better than the local chicken that often give one egg in three days," farmers from Gete Kutiyo Kebele in Dalocha Woreda, SNNPR, said. An official from Chench Agricultural and Rural Development Office also said that there was increased tendency of smallholder farmers to use improved hybrid cows rather

than having many local cows which he considered an unexpected positive outcome of the project. However, there is serious shortage of improved cattle and poultry breeds in the project woredas. An Official from Tiyo Woreda Livestock Development Agency (Oromia Region) considered lack of improved dairy cattle and absence of NGOs' working on dairy cattle improvement a major challenge to technology transfer and adoption. The majority of farmers consulted for the evaluation suggested importance of integrating dairy cattle genetic improvement activities in the animal feed technology packages promoted by the project in order to bring about significant changes in their income and livelihood

One of the beneficiaries of the project from Tiyo Woreda (Oromia Region) received improved chicken breeds from the agricultural research center. The project provided the beneficiary with Alfalfa seed that the farmer cultivated and used to feed poultry as depicted in the picture.



In sum, data gathered from smallholder farmers and other stakeholders revealed that many farmers have adopted some of the on-farm feeding techniques promoted by the project. Indeed, many stakeholders identified animal feeding management as the second most adopted technology next to improved forage development. Even so, there were better adoption of some techniques over others introduced by the project. Many farmers practiced the knowledge they gained through the project such as construction of improved trough, urea-molasses treatment and silage making activities. They have started feeding their animal through cut and carry system rather than communal grazing. However they could not continue urea-molasses treatment and silage making practices due to shortage of inputs. Shortage of inputs for animal feed preparation such as plastic sheet for silage making were identified as a challenge to technology adoption. Because of unavailability of molasses, farmers in many areas were not also able to practice urea treatment. This might indicate that some of the knowledge and technologies shown to farmers cannot be sustainable. Record keeping was the least practiced technique promoted by the project. “The adoption rate of record keeping and business planning is very low,” Official from Tiyo Woreda Livestock Development Agency was quoted as saying. Other project resource persons also indicated that record keeping for technical and farm management activities has not been going on as expected despite continued efforts.

In terms of achieving the targets set for indicators identified to measure progress on the third result area, the project has been progressing well in regards to training of government extension agents trained in improved farm management practices as well as

animal feeding and nutrition (by training 452 out of the three years target of 700, which is 65% rate of achievement). Close to half (48%) of the target number of farmers were also trained in improved farm management practices as well as animal feeding and nutrition during the first one and a half years of implementation. However, progress made on the rest of the indicators such as number of farmers that benefited from domestic experience sharing visits (36%), and number of media outreach products developed and distributed has been slow or negligible.

Intermediate Result-4: Improved management of buyer/seller groups within the trade sector

Under the fourth result area, the project's progress and achievement is presented focusing on formulated feed, and expansion of feedlot, poultry, dairy and fattening enterprises.

4.1. Formulated feed

As explained under the second result area, the project has increased the actual and potential supply of formulated feed during the past two years. As depicted in Figure 1 below, there was remarkable increase in concentrated feed production during the past two years. In 2013 (baseline), total production of concentrated feed by union-owned feed manufacturing enterprises was 25,918.73 quintals. Comparison of the baseline with quantity of concentrated feed manufactured in the first three quarters of 2015 alone shows that feed manufacturing has almost doubled reaching 51,542.47 quintals. The sharp increase in 2015 may be mainly due to the high demand for such feed due to serious shortage of feed caused by the drought in many areas. The full year production in 2015 is expected to be much larger as demand for manufactured feed is increasing from time to time.

Figure 1: Unions Feed Enterprises CFM Trends (2011 to 2015)



The grants and capacity building support provided by the FEED II project was instrumental to the increased capacity utilization. The increased production of formulated feed at FEED I unions is also a testimony that the union-owned feed manufacturing enterprises have applied improved management practices promoted by the project. Linkages established by feed manufacturing enterprises with input suppliers and formulated feed customers has also increased trade in the animal feed sector. Most FEED I unions were able to increase their feed production capacity utilization by regularly buying ingredients from suppliers. Linkages established with feed customers have also increased demand for and sale of formulated feed, and diversified customer base of FEED I unions.

4.2. Introduction and Expansion of Feedlot, Poultry and Dairy Enterprises

FEED II project has targeted to establish 30 feedlot, poultry or dairy enterprises over the project period. This was meant to be achieved by providing training to cooperatives and union staff in business management, and improved nutrition and feeding practices. The project also planned to organize experience sharing visits. Provision of in-kind and cash grants was also the other activity identified to expand feedlot, poultry and dairy enterprises.

The project's progress in introducing and expanding 30 feedlot, poultry or dairy enterprises has been slow. It is true that the project undertook some important preparatory works such as announcing a request for application to invite potential and interested enterprises to apply for grants, and screening and selecting applicants. Up until

September 30, 2015, progress reports showed that the project signed agreement with six such enterprises while five were in progress. Monitoring reports also showed that 165 (out of the 420 three years target) feedlot, poultry or dairy enterprise stakeholders benefited from domestic learning exchange visits. The project put off training of 92 cooperative and union staff in business planning and improved nutrition and feeding practices to the third year of its implementation.

Considering the progress made so far, it may be difficult for the project to achieve the target set under this result area. But the fact that important preparatory activities have been taken care of in the past may facilitate the process of establishing or expanding feedlot, poultry and dairy enterprises. The evaluation team also found the activity very important considering the fact that the lack of market for livestock products is a major problem experienced by most farmers in all project woredas. The establishment and expansion of these enterprises could create linkage for farmers with central markets so that they can sell their livestock products at better prices. Doing so will also facilitate technology adoption such as use of concentrated feed, and other improved animal feeding practices promoted by the project. The evaluation team also observed strong interest from some livestock and poultry enterprises/cooperatives to work with the project. Some of them are involved in collecting raw milk from farmers/members and selling to other processors or mass consumers such as universities.

Crosscutting Issues: Gender

The FEED II project took gender as a cross-cutting issue. It aims to ensure that at least 30% of its beneficiaries are women. Gender disaggregated data has also been gathered to track progress towards the target. Analysis of progress reports revealed that, on average, close to 29% of the project beneficiary smallholder farmers were women. The project also supported livestock enterprises in which women are members or fully own the enterprises.

In many project woredas visited by the evaluation team, the participation of women has increased remarkably during the second year of project implementation. Women beneficiaries were more involved in dairy and poultry production while their involvement in animal fattening and other activities was considered low. They were also considered successful in dairy and poultry production. Women also have better participation in forage development and improved feeding management. “We observed that the performance of women participants on feed preparation and utilization was better than men,” an expert from Dalocha Woreda Agriculture Office, SNNPR, said. As women are growing improved forage varieties in their backyards, the amount of time they used to spend for livestock feed collection is reduced. A key informant from Farta Woreda Agriculture office was quoted as

saying “Women have concern for animal welfare. Besides they have realized that forage produced from the backyard reduces their work load.” In addition, participation in the project has also increased women’s engagement in income generating activities.

In some project woredas visited by the evaluation team, there was a tendency to focus on women from women-headed households. Women from men-headed households were not given much attention particularly during the first year of implementation. Some project kebeles even mentioned the unavailability of adequate number of women-headed households as a reason for not being able to increase the number of women beneficiaries as much as they wanted. The need to involve women from men-headed households is currently getting attention. “The participation of women in the first year was low which was due to unavailability of female headed households in selected villages. But in the second year of project implementation the number increased considerably by mobilizing the community and involving married women too,” the head of Guto Gida Woreda Livestock Development Office (Oromia Region) said. Indeed, the participation of women from men-headed households is facilitating adoption of technologies promoted by the project. Men smallholder farmers from Gete Kutiyo Kebele in Dalocha Woreda (SNNPR) that participated in group discussions, for example, said:

“Before women (our wives) participated in the training offered by project, they didn’t agree with what we do about decreasing the number of our livestock, purchasing of improved breeds and growing improved forage. But after the training they have become very active and supportive of the improved practices. Besides, they are better than men in practicing their knowledge and producing better results.”

Some government officials suggested the need to reconsider the target set to further increase women participation. An official from Amhara Region Livestock Development Agency, for example, said “The project needs to revise the target it sets for women participation. We hope that it takes gender issues seriously and increases the percentage allocated for women participation. I believe that the fact that the 30% target for women participation is a hindering factor.” Given that women are in charge of the major household and farming activities in many areas, reconsidering the 30% project’s target may be appropriate so as to ensure that its skills and technology transfer are being provided to the right person (women) in the household. Besides, the project’s standardized approach to women’s participation may need to be revisited considering some variations among regions on the roles of women. In other words, there may be a need to conduct context specific gender analysis for each region taking into account livestock and poultry holding/ownership customs and caregiving norms in the areas.

Participation of women, however, is being challenged by several factors. Women's work load and responsibilities at home such as child care, cooking and cleaning has remained a big challenge for them to participate in the project. Norms and traditions are still hindering full participation of women in training, experience exchange visits and other project activities. Husbands have remained dominant and, as a result, women have little role in important decision making processes such as selling fattened animals, entering into loan agreements and use of income generated by the household. In some areas, women also fear that owning expensive farm assets such as cross-breed cows would be risky as their animals could be stolen. Some women that participated in group discussions also indicated that their neighbors have become a hindrance to their participation in the project. Neighbors consider women participation in the project a waste of time. This attitude of neighbors has also challenged knowledge and skills transfer as their followers, who are often their neighbors, don't take them seriously. This may suggest the importance of wider community awareness. Limited economic capacity of women is also another factor that hindered their participation in the project as they have weak resource ownership and financial capacity to buy necessary agricultural equipment and improved livestock breeds. Women particularly from women-headed households often rent out their land to other male farmers. Besides, women generally have limited ownership of land and other productive assets, which also constrained their adoption of technology and techniques promoted by the project.

"We encouraged women's participation in the training and lobbied for gender equality to overcome any opposition they face from their husbands is overcome. However, after training, some women have had difficulty to implement forage technologies. This is because land owned by female-headed households is often rented out on product share basis to men who have limited or no land of their own. As a result, those women do not have decision making power on what to plant on the land as the tenants are the ones that make the decision. Tenants also usually choose food crops that can be consumed by humans rather than animals. This has affected adoption of technologies by women." (Official from Machakel Woreda Agriculture Office, Amhara region).

Male dominated culture seems also to have influenced development agents' decision in selecting beneficiaries of the project as they sometimes unintentionally incline towards men. The place in which the training is delivered has also challenged the participation of women in project activities. Women tended not to attend or participate in training sessions that are conducted far away from their areas of residence. In addition, some women indicated that they were not able to attend training sessions as all their children are in school.

Crosscutting Issues: Contribution to the Feed the Future Initiative

Ethiopia is a focus country of Feed the Future, the U.S. Government's global hunger and food security initiative. Through Feed the Future, the United States is supporting Ethiopia's own priorities for agriculture-based economic growth by strengthening strategic crops, agricultural commodities and livestock value chains, promoting private sector engagement, increasing access to credit, targeting relevant research and development efforts for inputs such as seeds and fertilizers, and improving market access. Under Feed the Future, the U.S. also strengthens its overall approach by integrating activities and initiatives that address cross-cutting issues of nutrition, climate change, private sector development, humanitarian assistance, governance and gender.

FEED II project is highly aligned with many of the goals, objectives and activities of USAID Ethiopia Feed the Future initiatives. In particular, the FEED II project was found highly contributory to the livestock and dairy component of the Feed the Future initiative with which the US government is supporting the Government of Ethiopia's Agricultural Growth Plan (AGP) by improving smallholder incomes and nutritional status through investments in selected livestock value chains. Feed the Future initiative under its AGP-Livestock Market Development aims to generate increased productivity and competitiveness of livestock value chains, benefiting both male and female smallholders. Improving animal feed is one of the strategies identified by the program to improve smallholder income. The goals and objectives of FEED II project focus on improving smallholders' income by increasing their livestock productivity and trade in the livestock sector. The project has been promoting improved agricultural techniques and technologies and capacitating smallholder farmers to improve their livestock productivity. Many farmers have adopted those techniques and technologies and managed to increase their livestock production (dairy, fattening, poultry and so on). Farmers have grown improved forage feed in their backyard, improved their animal feeding and management practices, and increasingly replaced local breeds with improved breeds which are key elements of the livestock value chain development. FEED II has increased availability of improved animal feed and strengthened the animal feed sector by supporting and capacitating the different actors ranging from government to smallholder farmers and their cooperatives to associations to the private sector. The project has also supported the establishment and operation of formulated animal feed manufacturing at cooperative unions to increase availability, access and affordability of such improved feeds to smallholder farmers. It has also supported the establishment of improved forage nursery sites in the different intervention areas to build local capacity and ensure availability of improved seeds and seedlings to smallholder farmers.

Through the Feed the Future, the United States is supporting Ethiopia's AGP-Livestock Market Development with the aim to address adaptation to climate change—especially in areas with rainfall deficits—by introducing activities and practices to protect livelihoods in

the livestock sector. In this regard, FEED II project was engaged in rehabilitating degraded land by planting improved forage seeds that not only rehabilitated the land and reduced further degradation but also increased availability of improved animal feed to nearby communities. Forage trees planted at smallholders' backyards and some nursery sites established with the project support are also on degraded lands that contribute to land quality improvement and sustainable management of the environment.

2.2. Relevance

Ethiopia has a significant number of livestock. Estimates made by the Central Statistical Agency based on its 2012/13 Agricultural Sample Survey⁴ showed that Ethiopia has a total cattle population of about 53.99 million. The report also showed that about 25.5 million sheep and 24.06 million goats are also estimated to be found in the country. The total poultry population at country level is estimated to be about 50.38 million. Although the country has a huge number of livestock headcount, livestock productivity, however, has remained very low. A shortage of affordable and nutritious feed is one of the major constraints for Ethiopia's livestock sector. Use of improved forage and concentrated feeds is very low. According to 2012/13 survey findings, green fodder (grazing) is the major type of feed (about 57.49 percent) followed by crops residue that is 29.61 percent. Hay and by-products were also used as animal feeds that comprise about 7.05 and 0.91 percent of the total feeds, respectively. Moreover, very small amount of improved feed (only 0.22 percent) was used as animal feed and other types of feed that accounted for about 4.72 percent were also used in the country. Own holdings are the major source of all types of feeds for the majority of the holders during the reference period. The major part of the livestock feed (78%) comes from the natural pasture.

According to the 2015-2020 Ethiopia Livestock Master Plan⁵, the high cost and low availability of good quality animal feed from forage and fodder is one of the major constraints, if not the most critical constraint, to increasing productivity of livestock in dairy farms and feedlots, improved family and specialized poultry, and smallholder mixed crop-livestock and extensive livestock production systems. In light of this, the government's overall strategy for the agriculture sector as indicated in the first and second Growth and Transformation Plan (GTP I & II) is boosting livestock productivity of smallholder farmers. The government has also developed a five-year strategic roadmap with a vision to increase the number and productivity of livestock in the next five years (2016-2020). Limited access to land for production of forage seed and forage; inadequate and poor access to quality forage seed and cuttings; and poor extension and training for planted forage were identified as major challenges to realize the vision. To address these

⁴ Central Statistical Agency (CSA). Agricultural Sample Survey: Report on Livestock and Livestock Characteristics (Private Peasant Holdings). Volume II. 2012/13 [2005 E.C.]

⁵ International Livestock Research Institute (ILRI). 2015. Ethiopia Livestock Master Plan: Roadmaps for Growth and Transformation (2015-2020)

challenges, the government plans for policy interventions to make land available to investors for forage seed and forage production; establishment of a forage seed industry; and forage seed production and certification. The FEED II project was also designed and implemented to address the challenges to livestock productivity in the project woredas as identified in the national roadmap. In recognition of its alignment with government policies and strategies, the federal and regional government agencies also signed cooperation agreement with the project.

The 2015-2020 Ethiopia Livestock Master Plan also recognized shortage and unavailability of quality purchased concentrate feed and roughage; and lack of effective feed quality control and standards enforcement mechanisms as critical specific challenges to dairy productivity and strategized to deal with the challenges by making land available for commercial forage production by investors; enforcing feed quality standards, quality monitoring and control; promoting the establishment of flour mills to make more concentrate ingredients available; and promoting domestic production of cooking oil to replace the importation of cooking oil, and limiting or banning the exportation of oilseeds that affect availability of concentrate feeds. In this regard, the FEED II project was also found well aligned and highly relevant to the execution these government strategies. The project supported the establishment and expansion of feed manufacturing at cooperative unions, which will have substantial contribution to livestock production and productivity in the regions. Regions such as Amhara have also enacted proclamation against free grazing. As improved forage supply is a necessary condition for the proclamation to meet its objectives, the project fills some percentage of the feed deficit created by the proclamation against free grazing. "Feed scarcity being the major constraint to livestock productivity in the region, FEED II Project activities are supportive of the government initiative and policy on this issue," an Official from Amhara Region Livestock Development Agency said.

The woredas in which the project is being implemented were also considered appropriate as they are among those woredas with higher potential for dairy production. Most importantly, livestock being the major source of livelihood for most smallholder farmers in the project woredas, the project was well received by farmers. Poor livestock productivity and limited availability of animal feed were among the biggest challenges of target beneficiary farmers. Smallholder farmers from Becho Woreda said "Livestock is a source of food, draught power and income for farmers in the area. There was scarcity of animal feed due to shortage of land and poor quality of available feed (crop residue). Thus, the project support is in line with our priority needs." Considering smallholder farmers' limited access to land for production of forage seed and forage, the project promoted backyard forage cultivation, and equipped farmers with the knowledge and skills needed to improve their forage growing systems. The project also provided improved seeds and vegetative materials to model farmers that helped them understand the value of using improved forage and obtain additional sources of feed. The capacity building support provided to the farmers has also enabled them to utilize their feed efficiently and properly feed and manage their animals. Alongside the promotion of improved forage at smallholder farmers, the project has also established forage nursery sites that are being and will serve as sources of forage seed and seedlings to model and follower farmers over the long-term.

2.3. Sustainability

Sustainability was considered both in the project design and implementation. The TOT training delivery approach, for example, can be considered an appropriate strategy to sustain the intervention results. The project has built strong local capacity particularly at region, woreda and local government levels. Indeed, it was those government staff that participated in ToTs that ultimately cascaded the training to smallholder farmers. This shows that local capacity has been enhanced to ensure continued provision of activities and services started by the project. Besides, the project trained relatively larger number of farmers that could influence even other smallholder farmers to practice the agricultural technologies and techniques promoted by the project.

The fact that the project was implemented in a participatory manner has also enhanced ownership among beneficiaries and government counterparts. Indeed, the project was implemented using the existing government structure. This has increased their ownership and desire to sustain project activities and outcomes. Increasing livestock productivity of smallholder farmers is one of the priorities of the government. In most government offices visited by the evaluation team, officials demonstrated commitment to provide the necessary support to sustain project activities over the long-term. A DA from one of the project kebeles in Amhara Region was quoted as saying:

“I cannot predict the sustainability of activities especially at smallholder farmer level. At institutional level, however, sustaining the project activities as they are is not a problem. Most of the project activities are basically government activities for so long in the past, the difference being the approach, intensity of implementation and finance allocations. This implies that the activities will continue by the Woreda Agriculture Development Office.”

Sustainability of project activities and results, however, may vary by type of project activity or result. Many stakeholders indicated that project activities such as manufacturing of concentrate feed, improved forage development, animal feeding practices, improved poultry and fattening production are more likely to be sustainable. Farmers are increasingly demonstrating adoption of many improved technologies promoted by the project by planting improved forage seeds in their backyard, engaging in dairy, fattening and poultry production. An expert from Daga Tembern Woreda (Tigray Region) was quoted as saying “Forage growing system, improved fattening, dairy and poultry productions are more sustainable and transferable than others.”

Some stakeholders argued that some project activities such as dairy production and record-keeping initiated/supported by the project may not be as sustainable as others. The fact that local breeds are not able to respond much to improvements in their feed is becoming a disincentive for some farmers to sustain their improved forage development activities. In addition, lack of market to sell dairy products at reasonable prices is also another factor that is challenging farmers engaged in dairy production. An official from Guagusa Woreda Livestock Development and Animal Health Office, for example, said “In

the absence of improved cattle breeds, dairy production activities with local breeds are least sustainable.”

The activities and services promoted by the project at cooperative unions are likely to be sustainable, though there are variations. As Unions were established to serve their farmer members, their leadership was found very committed to sustain established feed manufacturing plants so as to improve access and availability of such feed to their members. The unions that have been supported by the project have also strong financial resource capacity to sustain the feed manufacturing business. Indeed, some unions have allocated some budget to establish wheat flour manufacturing in the future so that it can supply raw material for the livestock feed enterprise. The unions have also experience in distribution agricultural input to primary cooperatives and farmers. These capacities, experiences and networks are crucial to distribute their feed outputs to the smallholder farmers and to sustain the feed plant. The production of concentrated feed through unions will also contribute to smallholder farmers’ access to animal feed when their own forage production is exhausted.

However, it is important to note that Unions that were supported by both FEED I and II projects are relatively in stronger position to sustain their feed manufacturing business and deal with the challenges. Some FEED I unions are also taking measures to expand the feed manufacturing plant to meet the growing demand. Union management has also been capacitated to better manage their feed business which would be instrumental to its sustainability. They also have the understanding that the price of concentrated feed is high and needs to be dealt with to make it affordable to their members and other smallholder farmers. In some unions, complementary plants such as flour production are being constructed that could enable them to produce feed at lower cost using the by-product of their flour plant.

FEED II unions, on the other hand, may be vulnerable to changes and challenges. Their capacity to manage their feed business has not been tested as they have not started production. As discussed elsewhere in this report, the FEED I unions were able to increase their production and profit as well as capacity to manage their business by FEED II project support. By the same token, it is likely that FEED II unions will require continued support to better sustain and expand their business. Even so, both government and unions seem to agree that the unions will be able to sustain their feed business without the project support as it capacitated them very well. Indeed, many union leaders stated that improving livestock productivity and animal feed was their Unions’ important area of intervention even before the FEED II project support. Government officials also pledged their continued support to sustain the project activities at unions. “The unions must undertake their activities properly but when they face a problem, the government will always be with them to solve their problems. When the project phases out, the government will take the responsibility to continue the union activities in a sustainable manner,” an Official from Tigray Region Cooperative Promotion and Market Development Agency said.

The fact that the project supported animal feed value chain actors and promoted linkage is believed to contribute to sustainability of some of the project activities/results. The

support provided to local feed mill manufacturers will, for example, contribute to sustainable access to such machineries probably at much lessor cost local sources. The project has also capacitated other supply chain actors in the livestock development sector. The capacity building support provided to Ethiopian Feed Industry Association, and Veterinary Drug and Animal Feed Administration and Control Authority is vital to better deal with feed quality issues and provide necessary support to unions. A sample of the feeds produced by the unions was also tested for quality. These preventive actions will contribute to sustainability of feed production at unions and mechanisms to test quality should be strengthened in the future as any issue related to the feed can challenge the continuation of feed production activities. The project has also connected unions with input suppliers and buyers. As a result, they are able to get necessary ingredients to utilize their production capacity. Moreover, efforts were exerted to link unions with some buyers and promote their feed products to potential buyers. Smallholder farmers have also been sensitized to understand the importance of using concentrated feed to improve their productivity. All these activities are paying off by increasing demand. This trend is expected to increase in the future as well.

Considering the fact smallholder farmers have small landholdings and allocate very small plot of land for forage production, the development of nursery sites apart from providing forage seed to farmers enhances multiplication and sustainable local access to forage seeds and seedlings. In some areas in Oromia region, improved forage varieties are cultivated around farmers training center (FTC) of selected kebeles. The additional site is being used as a site of demonstration for farmers and source of improved forage seeds which can reduce the burden from main nursery site. This also created much awareness about forage seeds among farmers. Most importantly, the amount of seed and seedlings that are being produced in these woredas has increased.

Sustainability of project activities and results is and will, however, be constrained by the following risks/challenges:

- i. **Unavailability and high cost of feed ingredients:** Unavailability and costly nature of inputs used to manufacture concentrated feed has remained to be a major challenge for unions to produce as much as they wanted and reduce the cost of feed to farmers. FEED II unions are also very much concerned about the unavailability and cost of ingredients. At the current formulated feed prices, most smallholder farmers are not able to buy and utilize such feeds.
- ii. **Weak livestock value chain development and narrow focus:** Many stakeholders argued that the project is too focused to adequately improve productivity and income of the smallholder farmers. One of the reasons farmers are not able to afford concentrated feed is because the price they charge for their livestock products is very low due to lack of access to markets. On the supply side, limited access to improved animal breeds did not also encourage farmers to effectively engage in forage production as well as use of concentrated feed as using those improved forage/feeds on local breeds was not found cost effective.

- iii. **Drought and limited access to water:** The current drought in Ethiopia has hampered improved forage seed production at nursery sites and smallholder farmers. As a result, farmers in some areas are not able to observe changes brought about by the improved forage seed. Besides, the fact that some nursery sites are not able to produce seed and seedlings due to lack of water could also mean that sustained access to forage seed supply will be curtailed.
- iv. **Unavailability of forage seeds and improved livestock breeds:** Unavailability of forage seed, improved cattle and poultry breeds is challenging technology adoption and sustenance of farmers' forage production activities in many areas. "Shortage of seed supply is challenging sustainability of forage production as farmers would know the benefits and sustain it as long as the supply exists," a DA from Soyema Kebele, Becho Woreda, Oromia Region, said. Lack of access to improved cattle and poultry breeds and central markets have reduced the benefit smallholder farmers could have gotten from improved forage production. To many stakeholders, the improved forage production enabled by the project would make economic sense if it is used on improved animal breeds.
- v. **Unclear ownership of nursery sites:** "The fate of the nursery site is not clear as it is in between two organizations: woreda livestock agency and the union," an Official from Tiyo Woreda Livestock Development Agency, Oromia Region, was quoted as saying. The woreda livestock agency supports the nursery site technically and the union receives budget and seeds from FEED II project and transfers that to woreda livestock agency. Unions also seem to lack interest and knowledge about the nursery sites as the sites are not generating profit and are often located far away from the unions. Hence, many stakeholders question whether nursery sites will continue in the absence of clear owner and continued project support. Even so, the government has been highly involved in nursery site management and operation. Indeed, some of the nursery sites supported by the project were established and being managed by local government bodies. In some project areas, the woreda governments have allocated some budget to sustain them.
- vi. **Weak follow-up:** Many stakeholders indicated that the project did not put much investment and effort on follow-up to facilitate adoption of technologies and techniques. To them the provision of training and materials may not guarantee achievement of desired results unless the project ensures that the farmers have put the knowledge and technologies transferred through the project into practice. The reliance of the project on government staff to undertake the regular follow-up was not found adequate to facilitate adoption of promoted techniques and technologies.

2.4. Efficiency

The FEED II project built on the learning and experiences gained from implementation of FEED I. These lessons and experiences were instrumental in making better decisions in

such areas as selection of unions for feed manufacturing and others. The project has also benefited from ACDI/VOCA's long years of experience working with unions and primary cooperatives. These learnings and experiences are believed to have contributed a lot to resource allocation efficiency.

The fact that the project utilized existing government structure and expertise to implement its activities increased its resource utilization efficiency. The project, for example, utilized development agents at community level to train and mentor large number of smallholder farmers within a short period of time. Livestock experts at woreda levels were also providing the necessary assistance to the project implementation. As a result, the project operated with limited number of staff in each region. The project does not even have project staff at woreda and community levels as it made use of the government structure and personnel. Although it has managed to achieve what it has achieved with limited manpower, however, the fact that the project has limited number of staff in each region was blamed for provision of inadequate follow-up and supervision.

The focused nature of the project also allowed coordination and resource utilization. The project also has competent staff with necessary technical skills that contributed to optimal use of resources. Some project activities such as baseline study were also undertaken internally which reduced the cost that could have been incurred if it was outsourced to external consultants.

The project sourced much of its materials from local sources. It bought the feed manufacturing mills from local workshops that it capacitated. Many stakeholders agree that the cost of feed mills could have been much higher if they were imported from abroad. The fact that FEED II project worked with unions was also considered an important source of efficiency. As unions are owned by farmers, working with them facilitated implementation and sustenance of some project activities. However, the evaluation team believes that resource utilization efficiency could have been improved if the project collaborated with other NGOs that are engaged in different agriculture value chain development areas. Overall, however, there was optimal use of project resources though there are opportunities for improvement.

2.5. Project Management and Partnership

The FEED II project was implemented with active participation of a range of its stakeholders at different levels. The project involved most of the relevant stakeholders from federal to local government and community levels. Indeed, the project was implemented based on the existing government structure. It capacitated the existing system and experts on feed enhancement. Apart from government stakeholders, the project has also involved organizations that work on livestock market development, feed production and other related development areas. These stakeholders were involved in different activities of the project ranging from project site visits to experience sharing and capacity building. The involvement of stakeholders has also facilitated project execution

and sustainability. While most stakeholders consulted by the evaluation team were happy with their involvement, there is a need to strengthen the collaboration and partnership with some federal level government agencies and NGOs implementing related programs. The project worked more with regional and local government stakeholders than some federal agencies such as the Federal Cooperatives Agency. While these federal agencies have confirmed that they participated in experience sharing activities, their involvement in other project activities was limited. Similarly, the evaluation team learned the project has not been collaborating with some NGOs that have been implementing related projects in some target woredas. In some project woreda, some NGOs have been implementing projects relating to value chain development, dairy production and similar others that the project could have partnered with to bring about greater and sustainable impact on the lives of farmers.

The project was well managed as evidenced by the results achieved. Teamwork has been widely promoted that enabled every project staff to know a lot about the project. The experience of project staff working with government and smallholder farmers has also facilitated implementation of project activities and achievement of good results. Besides, the focused-nature of the project has facilitated project implementation and coordination. Grant management of the project was also found effective and appropriate. Much of the project grant was managed by the project through mainly in-kind grants and cash grants based on completion status/progress and cost-share arrangement. The project used grant tracking tool to properly monitor its grants. The monetization process also went well, according to key informants, though the amount of resources generated from sell of the commodity (wheat) was a little less than anticipated.

2.6. Monitoring and Evaluation

The project have a well designed project document with results framework. A monitoring and evaluation operational plan with the necessary data gathering instruments was also prepared to guide M&E activities. Performance indicators are defined to ensure common understanding. Budget for project monitoring is part and parcel of the overall project budget although separate budget is allocated for baseline, midterm and end-term evaluations. Indeed, information gathered from key informants revealed that due attention to M&E was given by the management as evidenced by the competent staff and other necessary resources allocated to it. M&E. M&E activities of the project is also supported by sharepoint system. The system allowed smooth transfer of data from development agents to woreda government and then to project coordinators at regional level. The system also gathers data disaggregated by gender. Project staff was also trained, and capacity gaps identified during supportive supervision visits were also addressed. Important mechanisms are also in place to ensure data quality. Internal data quality audit was also undertaken which assessed the system and its gaps. Although minor double counting gaps were observed in farmers that participated in some training sessions particularly during the first year of project implementation, there has been much improvement with the use of softcopies.

Monitoring reports are produced at regional and project levels. Each regional coordination office puts together and submits monthly monitoring report in a timely manner that provides quantitative data and brief narrative. Project level monthly monitoring reports are then combined by the M&E team and used to produce semi-annual and other project reports. Once reporting is done, data is then entered into SharePoint system. Narrations and figures reported in the monthly monitoring reports are later validated after the names of farmers are entered into SharePoint. M&E information has also been used for decision making purposes. In sum, the data quality assurance mechanisms and ability of the system to capture, process and generate routine project information are adequate though there are areas that may need improvement. Top-down feedback mechanisms are not as strong as stakeholders expected. The project needs also to make sure that its annual work plans and progress reports are organized by objectives and result areas rather than major project activities. It is also important to assess the adequacy of regional staff to implement and monitor the project activities. Some of the indicator definitions may need to be reconsidered to ensure clarity and facilitate standardized measurement. Some indicators may also be inadequate to measure progress on some results, which may need reconsideration.

2.7. Enabling and Constraining Factors

2.7.1. Enabling factors and Opportunities

Strong government support: The project enjoyed strong government support. The implementation of project activities at grassroots level was undertaken mainly by government experts from agricultural and cooperative promotion offices. There were also cases where government provided financial support to complement project's activities relating to feed manufacturing enterprise establishment.

Favorable government policies and structures: Improving livestock productivity of smallholder farmers is one of the targets of the government to reduce poverty. Available national development strategies and programs identified fodder improvement as a major area of intervention to improve livestock productivity. The existence of favorable policies helped the project enjoy strong government support at all levels. Availability of government structure all the way from federal to community levels also facilitated project implementation. The project benefited a lot from engagement of development agents to cascade training, create awareness, mentor farmers and so on. Although the project was implemented using the existing formal government structure, many key government officials suggested the need for the project to utilize other arrangements such as clusters (e.g., dairy production clusters and fattening clusters) established to facilitate technology implementation and marketing of agricultural products. There is also development group structure called "one-to-five" at kebele level that the project could use to facilitate technology promotion and monitoring. In some regions such as Amhara, the government is in the process of distributing three million layer breed poultry chickens that the project can take advantage of to address the lack of improved poultry breeds that is being experienced by beneficiary farmers.

Presence of demonstration sites: The presence of demonstration sites in each project region was also considered another opportunity that facilitated the hands on training in such areas as forage production and livestock nutrition and management. The cooperation with research centers and universities also allowed access quality forage seeds and vegetative materials with reduced prices or free of charge in some cases.

Drought and shortage of feed: The feed shortage that resulted from the drought has increased demand for concentrated feed in many areas. Some FEED I unions have increased their production and planned to increase capacity to meet the growing demand.

Presence of farmer cooperatives and unions: The fact that cooperative unions with stronger financial and human capacity were available in the project woredas was an important opportunity to promote establishment of feed manufacturing enterprises at these appropriate and farmer-owned unions. Unions' priorities and commitment to improve livestock productivity of their member farmers was also well aligned with the project initiatives that also increased their interest to work with the project. The presence of these organized farmer groups also provided a favorable environment for awareness creation, training and distribution of forage seeds and planting materials.

2.7.2. Constraining factors

Limited supply and high cost of ingredients and other inputs: Unavailability and high cost of ingredients, and lack of adequate awareness and market for manufactured feed, the major challenges for manufacturing formulated feed and facilitating its use by farmers. Concentrated feed has also remained unavailable, expensive and inaccessible for probably the majority of the farmers. Access to and affordability of industrial by-products such as wheat bran, noug cake and molasses is limited in many project areas. Those that can be found in nearby towns were also considered poor in quality apart from being expensive. As a result, farmers trained on urea treatment were not able to apply their knowledge due to unavailability of molasses. Similarly, shortage of inputs for animal feed preparation such as plastic sheet for silage making did not allow many farmers to put their training into practice. Another common challenge identified by most farmers was the unavailability of seeds and planting materials. Many farmers and stakeholders alike stated that adoption of these new and improved technologies and techniques is being challenged as farmers would sustain what they personally experienced, which they cannot in the absence of seeds and planting materials. Improved forage seeds such as Alfalfa were also difficult to find in the market apart from being expensive. Unavailability of electric power supply has also constrained some unions from starting formulated feed production.

Charities and Societies Legal Framework: The country's legal framework for charities and societies challenged the transfer of two vehicles utilized for other projects to the FEED II project. Had the vehicles were transferred timely, according to key informants, the project could have avoided the need to buy new vehicles and rather utilized the money for programmatic activities.

Poverty and Illiteracy: Level of education and income was also found to facilitate or constrain adoption of technologies and techniques promoted by the project. Many farmers are still too poor to buy improved animal breeds and experience greater livestock productivity. Farmers' limited purchasing power has also constrained adoption and utilization of concentrated. The fact that many farmers are not that educated has also affected the transfer as well as adoption of skills and technologies. In this regard, a development agent from Burka Dilaba in Dalocha Kebele (SNNPR) said "The best performers in technology adoption were those with better resource base and

education background who were able to understand the training. The least performers were those with no or limited education and poor economic status.”

Weak follow-up and technical support: Many stakeholders seem to agree that the project did not provide adequate supervision, follow-up and technical support. The fact that the project doesn't have its own staff at woreda and local level was mainly to blame. The shortage of budget and other resources such as motor cycles at woreda agriculture offices was also blamed for not providing adequate follow-up. The inadequate follow-up and technical support has also constrained transfer and adoption of technologies and techniques to farmers. Smallholder farmers that participated in FGDs from Kafta Humera Woreda (Tigray region) were quoted as saying “There is poor follow up and coordination from the woreda agriculture office or DA. The experts usually visit the farmers only in cases when officials came from regional or federal level. The woreda experts visited our farm only this week after they heard that an evaluation team was coming.”

Limited access to markets: Absence of market for dairy products is the most pronounced challenges which hinder the farmers from adopting some technologies. In many project areas, farmers indicated that they sell their livestock products at a very low price as they sell them at nearby towns. Discouraged by the low price, some farmers use livestock products such as milk for household consumption only. As farmers sell their livestock products at cheap price, they found adoption of improved forage uneconomical. They said that increasing livestock productivity without creating market linkages cannot bring about sustainable improvement in their lives. Smallholder farmers that participated in FGDs from Laelay Maychew Woreda (Tigray Region), for example, said “The market channels for our livestock products such as milk are not yet strengthened. As a result, we are using these products only for household consumption in an extravagant way.”

Unavailability of improved animal breeds: The demand of improved dairy cattle is very high in the project intervention areas. Many farmers and other key informants consulted for the mid-term evaluation indicated that growing improved forage and developing better animal feeding practices cannot guarantee improved productivity and income. This is because return on use of improved forage on local breeds is very low. Many stakeholders argued that improved forage would be cost effective if used on improved animal breeds. Hence, in the absence of access to improved breeds, productivity improvements brought about by the use of improved forage is too small to encourage farmers adopt techniques and technologies introduced by the project.

“It is only when animal feed technology promotion activities goes with dairy cattle genetic improvement activities that the project can bring significant change to livelihood of the farmers. As the milk productivity of local breed cows is poor, it is more economical if the project accompany improved forage production system with improved animal (crossbred for dairy).” (Smallholder farmers that participated in one of the FGDs from Becho woreda in Oromia region.)

High poultry mortality: In some project areas, farmers engaged in poultry production activities stated that they are not able to benefit as much as they would due to high poultry death. Some smallholder farmers commonly stated that poor access to health services for poultries has been an impediment to effectively engage in poultry production. They suggested the need for the project to work with other actors to reduce death of poultry.

Shortage of land: Farmers have a small plot of land that they often use for crop production. This has constrained farmers' ability to grow adequate forage that could feed their animal throughout

the year. Smallholder farmers that participated in one of the group discussions from Yewula kebele in Machakel woreda (Amhara Region) said “What should be clear is that the amount of forage we produce from the tiny land is very limited to exploit the technology in a meaningful way. We just observed in a form of demonstration that improved forage does in fact increase milk yield and improve body condition of animals.” The challenge is more serious for female headed households who either have a very small plot of land by comparison or who sub-lets their lands to other men headed households that leaves them with no decision making power to decide on which crop to plant in their land.

Drought and shortage of water: As a result of the drought and shortage of water, smallholder farmers in some project areas were not able to adequately plant forage seeds at their backyard. Some nursery sites in these areas are also being challenged by shortage of water. An expert from Dalocha Woreda Animal Agriculture Office was quoted as saying “The outcome of the project would have been astonishing had it not been for the rain failure due to the current climate change.” The drought has also deflated the livestock price/value in some affected woredas as many people are interested to sell their livestock to cope with it.

Inadequate capacity and staff turnover at unions: While the availability of relatively well organized farmers cooperatives and unions was a great opportunity for the project, they did not have adequate capacity to engage in feed manufacturing. They also had high staff turnover. As a result, establishment of feed manufacturing plants in the unions took some time.

2.8. Lessons Learned

One of the lessons learnt from the project implementation is that availability and cost can curtail the adoption of an otherwise excellent technology. Availability and cost of forage seeds and planting materials as well as industrial and concentrated feeds have been shown to be critical issues that must be addressed if the technologies promoted by the project are to be adopted by most farmers.

The importance of offering integrated packages of agricultural technologies and techniques was also another key lesson drawn from the project implementation. It was learned that significant livestock productivity improvement cannot be achieved without the promotion of improved livestock breeds and availability of improved animal feed at affordable prices. Farmers that adopted improved forage and animal feeding practices were not able to get a deserving productivity from their local breeds. The fact that improved productivity cannot guarantee increased income and adoption of improved techniques and technologies was also observed from the FEED II project implementation. Many farmers that have managed to increase their livestock productivity through adoption of the project promoted techniques and technologies did not experience similar increase in their income. This was because of the fact that they have no access to appropriate markets to sell their livestock products at better prices. As a result, many farmers didn’t find the use of improved animal feeds such as concentrated feed cost effective. This calls for the need to strengthen livestock value chain development activities or collaborate with other actors that work on such areas.

Giving farmers free seedlings or seeds seems to have reduced the farmers' abilities to use other resources available at farm level, as many of them are still expecting supply of more seeds and planting material free of charge. While the evaluation team recognizes the great work undertaken by the project to create awareness and improve animal feed availability as well as quality in the target areas, the aim should be to move the farmers from the point where they are dependent on government and the project to a point where they can handle the technology with little or no intervention from outside their systems by producing their own seed and planting materials.

The fact that women in men headed households have limited decision making power has affected technology adoption in many project areas as women were not able to decide on which crop to plant in which plot of land and undertaken other activities. Even in men headed households, the non-involvement of women in the project hampered men's efforts to put their training into practice and adopt technologies promoted by the project. Hence, an important lesson learned from the project implementation was the importance of involving both husbands and wives to increase adoption of promoted techniques and technologies.

3. CONCLUSIONS AND RECOMMENDATIONS

3.1. Conclusions

Ethiopia has huge livestock resource. Livestock is a source of food and income for farmers. However, livestock productivity has been very low due to scarcity of improved dairy cattle, animal feed, and knowledge gap on modern livestock management. Cognizant of this, improving livestock productivity has been one of the key development targets of the government and priority of farmers. In light of this, the FEED II project was found well aligned with national and international development priorities and the needs of smallholder farmers.

The project is on the right track to achieve most of its objectives and targets. But there was slow progress in degraded land rehabilitation; introduction and expansion of feedlot, poultry and dairy enterprises; and establishment of commercial forage production related enterprises.

The project has strengthened the feed ingredient supply chain and service sector by supporting local manufacturers to develop their capacity to manufacture, maintain and repair various types of equipment used in the processing of livestock feed. Better linkages between private sector feed ingredient suppliers and feed manufacturing enterprises were also created with the project support.

Forage development activities undertaken on degraded land and farmers backyards or main lands through the project support has rehabilitated the land and provided quality animal feed to nearby farmers. Considering the less than 50% achievement recorded during the past two years, however, much needs to be done to achieve the target in the remaining project period. The same is also true to achieve targets set for establishment of commercial forage production related enterprises, and introduction and expansion of feedlot, poultry and dairy enterprises.

The project is on track to achieve the target set to establish/develop nursery sites. Some nurseries have now become sources of seeds and seedling, thus reducing the dependency on the project and government. However, the nursery sites are situated in a small plot of land and have limited capacity to meet the growing demand for forage seeds owing to the increased awareness created by the project.

Farmers' knowledge and adoption of many of the techniques and technologies promoted by the project is going very well. The project has successfully increased knowledge as well as adoption of improved forage development and animal feeding practices. As a result of the project intervention, availability of additional improved animal feed has improved in the project intervention areas. Farmers have also applied their knowledge and improved their animal feeding systems in such a way that provide nutritious feed, reduce feed wastage, increase their productivity. Farmers have also developed sense of ownership of the project activities and demonstrated their strong commitment to continue what has been started by the project. The transfer of knowledge and technologies by model farmers to follower farmers was, however, generally slow.

The targets set to establish 12 new union-owned feed manufacturing enterprises, and enhance the capacity of existing 12 enterprises are on track. The project has increased current and potential availability of formulated feed. The fact that the feed manufacturing plants are established at farmer-owned unions has also paved the way for improved access to such feed by farmers in the future. The project was also successful in increasing awareness and demand for formulated feed. Most farmers consulted for the mid-term evaluation confirmed their awareness and expressed their strong desire to buy and use them. However, inaccessibility and unaffordability of concentrated feeds have remained major obstacles for smallholder farmers to use them. Much change has not been observed in use of concentrated feed among beneficiary farmers. While shortage and costly nature of feed ingredients is mainly to blame for the higher price of formulated feeds, the lack of appropriate markets for farmers to sell their livestock products has also hindered use of formulated feed. Hence, if the issues of availability and cost of inputs concentrated feed are not addressed, these technologies would unlikely be adopted.

Adoption of technologies and techniques promoted by the project has improved livestock productivity and started to increase income of smallholder households. Although the project's ultimate objective of increasing income of target beneficiaries may be achieved at the end of its implementation, however, continued adoption of techniques and technologies promoted by the project may be challenged as the increased productivity achieved through the project may not be reflected in the farmers' income.

3.2. Recommendations

Based on the findings of the evaluation and conclusions made above, the following recommendations have been made.

Recommendation for intermediate result 1 to 4:

- i. Strengthen efforts to achieve the target set to develop forage on degraded land and farmers' backyards; and strengthen support to commercial forage development firms so as to accelerate implementation of planned activities and achievement of targets.
- ii. As increasing forage production may not necessarily guarantee increased livestock productivity and income, collaborate with other NGOs that implement livestock market value chain development programs to create synergy and bring about sustainable change in the livelihood of target smallholder farmers.
- iii. Strengthen support to private livestock enterprises to build their capacity to effectively buy dairy products from farmers and sell to dairy processors and the central market. Support Unions and their member primary cooperatives to engage in milk processing to serve as a bridge between agro-processors and farmers.
- iv. Strengthen efforts to move the farmers from the point where they are dependent on government and the project to a point where they can handle the technology with little or no intervention from outside their systems. Efforts, for example, should be strengthened to overcome this constraint by training and encouraging farmers and farmer groups to produce and use their own seeds.
- v. Support expansion of the existing nursery sites to meet the growing demand for forage seeds and seedlings.
- vi. Properly transfer nursery sites either to the unions or the woreda agriculture office. Considering the reality on the ground, transferring the nursery sites to the woreda government and advocating for budget allocation would be feasible and appropriate. If nurseries are to be kept under unions, the technical capacity of unions needs to be enhanced to effectively manage the nurseries.
- vii. Undertake post-training evaluation activities so as to ensure whether the capacity building activities achieved the desired purpose. Besides, training schedule needs to

be developed with the participation of the various stakeholders to reduce potential delays. It is also important to strengthen farmer-to-farmer exchange visits and hold annual farmers' day to demonstrate successful achievements of farmers so as to increase adoption.

- viii. Strengthen follow-up and technical support at smallholder farmer level to increase adoption of technologies and techniques. This may be undertaken by strengthening the regional team to closely work with woreda and kebele level government staff, and facilitating joint supervisions (with government).
- ix. Explore opportunities to make price of concentrated feed affordable and accessible to smallholder farmers. Developing mechanisms to replace costly ingredients with other local resources whenever possible may be one of the considerations. It is also vital to further strengthen linkages among the feed value chain actors.
- x. Establish mechanisms to help farmers that produce forage seeds sell their produce and earn income. This will also increase supply of forage seeds that are highly demanded by other farmers. Unions or primary cooperatives may be ideal organizations to facilitate trade of forage seeds among farmers.

Recommendations for women empowerment

- xi. Strengthen efforts to both husband and wife, consider variations in women roles in different project areas and create wider community awareness to increase women participation.

Recommendations on project management and partnership/collaboration

- xii. Strengthen collaboration with government agencies particularly at federal level by involving them in supportive supervision and sharing of information about the project's progress. In connection with this, the project needs to document the project strategies and approach, lessons learned and experiences gained so far and share that with government stakeholders at all levels and other stakeholders to inform policy and programmatic decision making, and scale up its achievements. Indeed, considering the strategic importance of the project, addressing sustainability risks and scaling up the implementation of project activities in other regions, woredas and kebeles should be given much attention in the remaining life of the project.

General recommendations for a follow-on project

- xiii. The Evaluation Team recommends that USDA provide follow-on funding for a minimum of another three years to sustain and scale up project activities and results.

ANNEXES

Annex 1) List of Key Informants Consulted

S.N	Name	Position	Region	Woreda	Town	Kebele	Telephone
1	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
2	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
5	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]	[REDACTED]
6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]	
7	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
8	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]		[REDACTED]
9	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]
10	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]
11	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]
12	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			[REDACTED]

[illegible]

[illegible]

[illegible]

S.N	Name	Position	Region	Woreda	Town	Kebele	Telephone

Annex 2)

List of Men Farmers that Participated in Group Discussions

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Annex 3) List of Women Farmers that Participated in FGDs

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Annex 4) List of Project Woredas and Unions Visited for the Mid-Term Evaluation

Regions	FEED II Unions	Zones	Woredas	Town Unions are Located
SNNPR	Ambericho	Kenbata Tenbaro	Kedida Gamela	Duramie
	Melik	Silte	Dalocha	Worabie
	Gamo Gofa	Gamo Gofa	Chencha	Arbaminch
Oromia	Liben	Soth West Shewa	Becho	Weliso
	Galema	Arsi	Tiyo/Bekoji	Bekoji
	Gibe Didesa	East Wellega	Guto Gida	Lekemt
Amhara	Admas	Awi	Kosober/Dangila	Kosober
	Gozamin	East Gojjam	Machekel	Debremarkos
	Megenagna	South Gondar	Farta	Debretabor
Tigray	Geter Adwa MCU	Central	Laelay Mychew	Adwa
	Debre Asa MCU	South East	Dega Temben	Temben
	Setit Humera	Western	Kafta-Humera	Humera

Annex 5) List of FEED I Unions Visited/Consulted

Region	Name of FEED I Union	Zone	Location
SNNP	Sidama Elito	Sidama	Hawassa
	Licha Hadiya	Hadiya	Hossana
Amhara	Merkeb	West Gojjam	Bahir Dar
	Wodera	North Shewa	Debreberhan
Oromia	Ambo	West Shewa	Ambo
	Wonji	East Shewa	Wonji
Tigray	Enderta	Southeast Tigray	Mekele
	Wolwalo	Eastern	Adigrat

Scope of Work (SoW) for Mid-Term Evaluation

ACDI/VOCA, FEED II PROJECT

June, 2015

1. Background:

Ethiopia has the largest livestock population in Africa, and raising livestock is a major livelihood activity and source of income for a majority of the population. However, livestock productivity is one of the lowest in the world largely due to livestock feed resources being inadequate in both quantity and quality. The Feed Enhancement for Ethiopian Development Project – Phase II (FEED II) is funded by the United States Department of Agriculture (USDA) Food for Progress Program and has been implemented by ACDI/VOCA since September 2013. The project is a three-year intervention designed to increase livestock productivity through developing the animal feed sector.

FEED II field implementation began with an intensive baseline survey conducted February-April 2014 to set benchmarks for outcome level indicators against which progress could be measured and the impact of the project assessed. Following the baseline survey, the project launched implementation in four regional states of the country (Amhara, Oromia, SNNPR and Tigray). FEED II is now more than halfway through project implementation and hence, ACDI/VOCA would like to invite external consulting firms to bid to design and conduct a mid-term evaluation of the project.

1.1. Project Description

1.1.1. FEED II Goal and Objectives

The ultimate goal of FEED II is to increase the incomes of Ethiopian smallholder livestock producers by improving access to, and use of consistent, affordable, high quality animal feed that can support greater livestock productivity and efficiency. To sustainably increase the incomes of Ethiopian smallholder farmers in project target areas, FEED II aims to:

- Increase the productivity of livestock and poultry by 15% by developing the animal feed sector: and
- Expand trade of agricultural products in the livestock and poultry sector by 15%.

These objectives are to be achieved through four Intermediate Results (IRs), which address availability, access, knowledge about and utilization of feed resources.

IR-1: Improved quality of land and water resources:

Results from the baseline survey indicated that 30 percent of the interviewed households cultivated an average of 101.2m² of forage land in the year preceding the survey.

During its implementation period, FEED II has worked towards improving land resources through increased forage planting to rehabilitate degraded farm lands. Areas to be planted to forage were identified by woreda livestock experts and agricultural extension agents. Moreover, backyard areas which are generally marginal, degraded land and not able to be used for crop production were used to develop forage crops. In some cases intercropping of forage with maize and other crops was done. In some cases intercropping of forage with maize and other crops was done. The project plans to plant a total of 6,000 hectares to forage, half of it on degraded land rehabilitated through forage development.

IR-2: Improved the use of agricultural techniques and technologies:

Results from the baseline survey indicated that some feed technologies were consistently practiced by FEED II beneficiaries, including cut and carry, feeding troughs to feed animals, hay making and providing easy access to water. However, improved practices such as recordkeeping, baling, urea treatment of crop residues, and supplementation with urea molasses lick blocks; silage making and feeding factory formulated feed were rarely used.

Since the launching of project field activities in April 2014, FEED II has trained over 10,000 farmers in enhanced animal feed and production technologies, including improved forage-growing systems, use of manufactured feed and improved fattening, dairy and poultry production. To support the implementation of these trainings and sustainable forage production, the project procured and distributed forage seeds and other planting materials. Moreover, experience sharing visits were conducted for representatives of farmers. Agricultural extension agents and woreda livestock experts provided onsite technical support to farmers. The project plans to train a total of 26,463 farmers during the life of the project with an anticipated 70% adoption rate of one or more agricultural techniques and technologies by trainees.

The project also created access to manufactured feed through support of agricultural cooperative unions to establish feed manufacturing enterprises. Ten of the 12 cooperative union-based feed manufacturing units in FEED II's operational regions established under FEED I

are functioning and 12 new ones established under FEED II will soon begin manufacturing livestock and poultry feed. FEED II is technically and financially supporting all these union-based feed manufacturing enterprises.

IR-3: Improve farm management:

Results from the baseline survey indicated that 64 percent of respondents did not have any idea which livestock and poultry feed ingredient reduces the incidence of milk fever and soft egg shells, respectively. The correct answer, limestone, was known by less than 5 percent of those surveyed. In addition, over 50 percent of those surveyed said that they did not know what type of information is needed to determine whether they were achieving profits or losses in their livestock activities.

To respond to this lack of knowledge, the project is developing the capacity of smallholder farmers, and demonstrating improved management of their various livestock-sector commercial activities including livestock production, forage production/conservation, manufacturing feed, and marketing of related products such as livestock, poultry, milk and feed. FEED II has been organizing trainings on livestock nutrition and feeding management, business plan development and recordkeeping. Farmers have also been participating in regional exchange visits to share experiences from model farmers.

IR-4: Improved management of buyer/seller groups within the trade sector:

The project focus for this intermediate result is on commercial enterprises, whether cooperative/union or completely private sector based, which the FEED II project helped establish and /or enhance. Results from the baselines survey indicated that there was little return on investments in the livestock sector before the project began implementation. However, FEED II is building the capacity of cooperatives and unions to improve their operational and financial management, and has been organizing trainings in business plan development, recordkeeping and marketing. It has also been facilitating business-to-business workshops to promote products and establish sustainable market linkages. All of these activities have baseline values, indicators and targets which are presented in the FEED II Performance Monitoring Plan (PMP).

In general, the FEED II project is results based in its approach and designed with a detailed conceptual framework that shows the causal relationship from lower level activities and outputs to higher level intermediate results and outcomes. FEED II envisions that increasing the availability of good quality feed complemented by improved feed management practices would bring about healthier and more productive livestock, increasing profitability and income from

livestock products and related activities for smallholders. Hence, FEED II heavily emphasizes developing the livestock and poultry feed sectors to increase incomes of smallholders.

1.2. Crosscutting Issues

FEED II considers a number of crosscutting issues during project implementation, classified as crosscutting technical and implementation themes. Crosscutting technical themes include: gender; climate change and adaptation and the Feed-the-Future initiative. Crosscutting implementation themes include: monetization, monitoring and evaluation, private sector and institutional capacity building and collaboration with other development activities and grants.

1.3. Geographic Implementation Areas and Beneficiaries of FEED II

FEED II project implementation covers four regions – Amhara, Tigray, Oromia and SNNPR – where over 80% of the country’s livestock population resides. Within these regions, the project works in 39 woredas and 186 kebeles. It also works with a total of 28 cooperative unions (12 from FEED I and 16 new ones for FEED II), which are the key entry and scalability points through which the project is implemented. In each of the regions, the project works with a total of seven unions (3 old and 4 new) and at least 27,099 direct and 162,594 indirect beneficiary, smallholder farmers across the four regions.

1.4. Purpose and Scope of the Mid-Term Evaluation (MTE)

The midterm performance evaluation is part of the project formative process intended to provide an independent examination of the overall project progress and constraints related to implementation and effectiveness of the project interventions. It is also to draw lessons and generate recommendations for changes in programmatic approach and interventions to meet outcome and impact level targets, if needed.

The purposes of the MTE are to:

- Review and take stock of the implementation environment;
- Assess the effectiveness and efficiency of implementation approaches and methods;
- Assess whether targeted beneficiaries are receiving services and benefiting as expected;
- Assess whether the project is on track to meet its goals and objectives;
- Assess the relevance of approaches and activities in relation to the goal and objectives of the project;
- Review the project-level results framework and assumptions;

- Identify measures/mechanisms for sustainability put in place by the project;
- Document initial lessons learned; and
- Recommend modifications or corrective actions that may be necessary in order to achieve targets and goals.

2. Key Mid-Term Evaluation Questions

Main evaluation questions are organized around the standard evaluation criteria of relevance, effectiveness, efficiency, impact and sustainability as follows:

Relevance:

- What development problems in Ethiopia does the FEED II project address?
- What are the assumptions and hypothesis about agricultural development problems in Ethiopia?
- Is the project design appropriate for the cultural, economic, social and political context in which it works? Is the project addressing the priority needs of the project beneficiaries?
- What is the relevance of the project within Ethiopia's policy, program and legislative environment?
- To what extent are the project activities aligned and supportive of existing government initiatives and policies or other relevant donor funded programs?
- Is the project's results framework consistent and relevant with the data/findings from project implementation to date?

Effectiveness:

- To what extent has the project measured volume and value of sales?
- Is the project on track to achieve its goals and objectives? If not, why (e.g., change in the implementation environment and /or other factors that challenge ongoing validity of the underlying assumption and results framework)?
- Are expected services and support reaching intended beneficiaries?
- Do beneficiaries continue to perceive technologies, management practices and knowledge promoted by the project as meeting needs they consider to be important and appropriate for their circumstance? What are the indications of acceptability and effectiveness of these interventions?
- Is the training approach (i.e., ToT followed by smallholder level training and exchange visits) effective and efficient? What are farmers' perceptions about the project-promoted technologies and practices?

- What unexpected results (negative or positive) have been realized and why did they occur; i.e., what lessons can be learned from these results to date?
- FEED II is endeavoring to target at least 30% women as beneficiaries, improving their knowledge and access to enhanced techniques, methodologies and financial resources that will ensure their opportunities for livelihood and income improvement are as equal to men as possible. Are women benefiting from implementation of project activities to the extent expected? If not, why?
- What are the external factors or conditions that could hinder or are hindering the achievement of the project's results? What can /could the FEED II project do to address these?
- Are there existing opportunities to enhance effectiveness and broaden impact that the project is not, but should, be taking advantage of?
- The project is aiming to establish half of its sustainable forage activities on reclaimed land, thus contributing to climate change and adaptation (CCA). Is the project making expected progress against this reclaimed land target?
- FEED II has a \$3.5 million grant fund and has thus far awarded over 100 grants to cooperative unions, private enterprises and government agencies. How effectively are grants being managed? What changes are needed, if any?
- Is the project collaborating with FtF partners and measuring results against its FtF indicators?
- What recommendations can be made so as to increase the likelihood of achieving goals and objectives on time; improve resource use, and enhance beneficial impact on beneficiaries?

Efficiency:

- Are the projects strategies/activities efficient in terms of financial and human resources in relation to their outputs and outcomes?
- Are project resources being used efficiently for implementation of project activities?
- Are results desirable, affordable, replicable, sustainable and scalable?
- Is FEED II cooperating /collaborating with other development activities to try to optimally use resources and maximize impacts?

Sustainability:

- What steps has the project taken to address the sustainability of the project activities?
- Which project activities/ initiatives are most likely to be sustainable and transferable to relevant local institutions, communities, cooperatives, businesses before the project ends?

- Is the project able to leverage additional financial resources from the government, private sector or other projects, donors or partners? If so, please describe how this has been accomplished?
- What additional steps need to be taken in order to improve the chances for sustainability of the activities and benefits derived from the project activities?
- Do beneficiaries perceive benefits of project activities being sustainable beyond the life of the project? What factors do they see as key to sustainability?
- What recommendations can be made so as to improve chances for sustainability of activity derived benefits?

3. Mid-Term Evaluation (MTE) Methodology

The evaluation will take a retrospective and prospective approach in the process of engaging targeted respondents. It will be mainly qualitative in design and participatory in approach, but will also include a review of secondary and project monitoring data to answer some of the basic evaluation questions. Hence, the evaluation methodology will employ the following major data collection techniques.

3.1. Desk Review:

The first methodology to be used will be a desk review, which will ensure the evaluators have a good basic understanding of the project before implementing other aspects of the evaluation. Key project documents, including the proposal: cooperative agreement, PMP, semi-annual and other regular reports, training and review meeting proceedings, baseline survey report, agreements with line offices and grantees, planning and field trip reports, grants documentation and M&E database will be part of the review to help the evaluation team better understand the context in which the project operates. Information from the desk review, will also serve as the basis to design data collection instruments for the evaluation field work.

3.2. Analysis of Other Secondary Data:

This data includes project databases, feed manufacturing union sales data, forage seed distribution lists, woreda level forage and livestock data and other regional and national livestock and assessment data that can be reviewed, summarized and analyzed in relation to the evaluation questions and will provide additional context for primary data collection.

3.3. Key Informant Interviews:

The evaluation team will interview USDA representatives both in Washington, DC (via telecom) and in Ethiopia as well as implementing partners, national and local government partners, project beneficiaries (cooperatives, unions, smallholder farmers, nursery managers, ingredient

and equipment suppliers, equipment manufacturers, feed industry association, etc.) and other stakeholders. The evaluation team will develop different interview checklists to use depending on the key information to be interviewed.

3.4. Observations:

The evaluation team will visit and observe to determine the existence and functioning of feed mills and other equipment forage seed development nursery sites and backyard forage production, livestock enterprises provided by and/or developed with assistance from FEED II.

3.5. Focus Group Discussions:

The evaluation team will conduct focus group discussions in each selected site to obtain detailed, qualitative information from direct project beneficiaries on their perceptions, understanding and benefits they have derived from the project. Separate discussions will be organized with men and women to facilitate their equal and full participation in the discourse. The consulting firm will propose the methods to be used for selecting focus group participants.

3.6. Case Studies (History of Change):

The evaluation team will explore and document one or two cases as examples of project impact. These case studies will tell what happened when, to whom, and with what consequences.

Since FEED II is being implemented across four regions, the evaluation team will need to develop a sample of project sites, beneficiaries, stakeholders (key informant interviews), field observations and focus group discussions to use. Therefore, the consulting firm is expected to propose sampling/selection techniques to be used for this purpose to ensure development of accurate, relevant, confident and reliable findings and recommendations.

4. Quality Assurance

The evaluation team will develop a quality assurance mechanism to ensure the collected information and evaluation product is of the highest quality. If the expected standards are not met, the evaluations team/consulting firm will, at its own expense, make the necessary amendments to bring the evaluation products to the required quality level.

5. Evaluation Team Composition/Qualifications

The team leader is required to have strong expertise and experience in designing and conducting program evaluations. He/she must also have an agricultural and livestock

background with extensive experience in livestock, strong analytical and communication skills, extensive evaluation experience, and an understanding of the livestock value chain, including knowledge of the farmer/cooperative/union functional relationship, operational environment and feed manufacturing industry.

- MTE team leader (TL) will coordinate between program management and MTE team members and ensure the overall quality of the MTE. S/he will assure the achievement of approved evaluation plan and the rigors of the evaluation methods employed by the other team members, as well as take the lead in evaluating the overall project management, the integration of activities, and the quality and usefulness of the project M&E systems.
- The TL shall work with project management on MTE planning and logistics; assign responsibilities and provide support to the other MTE team members; and organize and facilitate team interaction.
- The TL is responsible for compiling and delivering the final report and other evaluation outputs and coordinating MTE team responses to the feedback on the draft report.
- The TL also will spearhead the process to validate the initial observations and interpretations and to plan in-country presentations to program stakeholders.
- S/he should possess strong evaluation management skills and prior experience in successfully leading evaluation teams.

It is highly desired that team members also have knowledge of Ethiopia agricultural and livestock policies, including the five-year, Growth and Transformation Plan and draft Livestock Master Plan. The team should also include a member with a gender in development or at least a sociological background.

5.1. Desired qualifications and responsibilities of the team members

The table below provides key qualification and responsibilities of the team members.

Position	Required Qualifications	Responsibilities
Team leader	<ul style="list-style-type: none"> • Significant formal education at the post graduate level in a field relevant to evaluation (e.g. program evaluation, statistics, anthropology, applied research, sociology, etc.) Applicants that do not hold a graduate degree in a related field should document relevant formal education. • Extensive experience in agricultural and livestock, including knowledge of the farmer/ cooperative/union functional relationship, operational environment and 	<ul style="list-style-type: none"> • Organize and lead the overall evaluation design and implementation; • Assure a thorough review and analysis of available secondary data by the appropriate team member(s), • Lead the selection of a purposively-selected sample of activity sites and outputs for primary data collection • Assure adequate triangulation and validation of findings; • Lead the collection and analyses of

	<p>feed manufacturing industry.</p> <ul style="list-style-type: none"> • Extensive experience using mixed methods of investigation (qualitative and quantitative) in developing countries. • Strong critical analysis and report-writing skills • Excellent verbal and written communication in English • Knowledge of the conceptual framework of food security and nutrition and experience in food security programming is highly desirable. • Previous experience working in rural Ethiopia or East Africa region will be preferred 	<p>primary and secondary data to evaluate the program's M&E processes and the integration of program sectors and activities;</p> <ul style="list-style-type: none"> • Assure that 1) final report presentation is logical and presented in a way that clearly separates findings, conclusions, and recommendations, are based on evidence presented in the report • Ensure timeliness and quality of all products/activities required to complete this evaluation • Lead the development and modification of the data collection tools, as appropriate. • Ensure that translations of forms/documentation are accurate • Submit all the documents related to the study (filled questionnaires, electronic versions of the collected data, training manual, fieldwork logs, etc.)
Technical specialists	<ul style="list-style-type: none"> • Advanced degree in a relevant academic field including agriculture, public health, nutrition, gender, natural resources management, rural development, women's studies, or conflict mitigation • Demonstrated extensive use of high level skills and methods of qualitative research and evaluation in his/her technical sector in developing countries • Previous experience working in rural Ethiopian or East Africa region will be preferred • Excellent verbal and written communication in English required 	<ul style="list-style-type: none"> • Lead the collection and analyses of primary and secondary technical data related to his/her technical field, • Prepare and respond to feedback for all sections of the MTE report related to his/her sector.

5.2. Project responsibilities

FEED II Project management will be responsible for the following:

- Facilitate meetings between the MTE team and USDA, local government, partners, beneficiaries, other stakeholders;

- Provide administrative and logistics support to the MTE team, such as scheduling appointments with stakeholders and coordinating with partners. FEED II will make available one vehicle and driver to the MTE team for the duration of the field work.
- Provide consultants with background documents, reports, data and other materials such as those listed below
- Provide available data on all components required by the MTE team, such as human resources, M&E systems and financial management structures.
- Lists of activity locations, identifying the type(s) of activities at each location, and the dates of implementation, numbers of direct and indirect beneficiaries.
- Maps showing the project area with administrative boundaries, roads, markets, food distribution points, activity sites, partner office, lodging, livelihood or ecologic zones, etc.
- Approved proposal narrative and relevant attachments and documentation of approved modifications
- All monthly, and semi-annual reports
- Annual survey reports
- Baseline report and reports from all research conducted for the project's benefit (e.g. formative research, barrier analyses, gender analyses, market analyses...)
- Project monitoring tools and manuals
- Complete M&E plan/PMP
- Login and password to access to project database and a detailed description of the data base
- Examples and lists of recipients of all types of routine monitoring reports
- A current organ gram of project staff (with names and phone numbers for incumbents and notation of vacancies) showing supervision/management lines
- Detailed Implementation plan and guidelines
- The evaluation team will review key project and other documents, including but not limited to:
 - Technical proposal
 - Cooperative agreement
 - Annual work plans
 - USDA evaluation policy
 - Grants documentation
 - Quarterly review meeting proceedings
 - ACDI/VOCA Gender Policy
 - M&E and learning operational plan
 - Gender Analysis, Strategy and Integration Plans

- Ethiopia Growth and Transformation Plan (GTP), 2010/11-2014/15, Ministry of Finance and Economic Development (MoFED) (2010).
- Ethiopia Agriculture Sector Development Plan
- Draft Ethiopia Livestock Master Plan

6. Deliverables and Timeline

The following deliverables are expected from the evaluation team:

Inception Report – This report focuses on methodological and planning aspects and will be considered the operational plan of the evaluation. It will present the evaluation methodology including data collection tools. It will also present the division of tasks amongst team members as well as a detailed timeline for the evaluation fieldwork and for a stakeholders’ consultation.

Including:

- evaluation methodology
- roles/responsibilities of each team member
- protocols and instruments for data collection and analyses
- evaluation itinerary
- statement of limitations of the methods and potential effects on results

Validation Workshop – To validate the findings of the draft report, the evaluation team will conduct validation workshops both at regional level during data collection and preliminary analysis and finally at national level. Representatives of key partners/stakeholders, including USDA, the feed industry association, union leaders, private enterprises in the sector and government representatives will take part in the workshop.

Evaluation Report- The evaluation report will present the findings, limitations, conclusions and recommendations of the evaluation as per the agreed outline of the report. Findings should be evidence-based and relevant to the evaluation objectives. The evaluation findings and conclusions should be presented for different levels of beneficiaries, including smallholder farmers, unions and other direct beneficiaries. There should be a logical flow findings to conclusions and from conclusions to recommendations. Recommendations will be action-oriented, practical and specific.

a) Comprehensive report written in English and not to exceed 35 pages excluding title page, table of contents, glossary of terms and acronyms, acknowledgements, executive summary (not more than 2 pages), photos, footnotes, endnotes and annexes, and including the following components:

- Background (brief)
- Evaluation purpose and objectives

- Evaluation methods (details may be put in annex)
 - Findings related to each key evaluation question
 - Discussion and conclusions
 - Recommendations, with prioritization based on their potential impact on project implementation and results, their feasibility in application and resource requirements.
 - Annexes
- b) Electronic files of the clean (final) qualitative (and potentially some quantitative) data collected.

Brief Evaluation Report - A two-page brief of the evaluation that will summarize the evaluation report and serve to enhance dissemination of its main findings.

Table-1: Activities, Timeline and Responsibilities

Activities	Date	Responsible
Phase I: Preparation <ul style="list-style-type: none"> • Provide introductory briefing on FEED II including expectations and requirements for the evaluation • Provide background materials for the evaluation team • Desk review, initial consultations and drafting of the inception report (including methodology, quality assurance techniques, evaluation fieldwork and detail planning) • Develop information field work (including arrangement of meetings, field visits, etc.) • Meet with USDA representatives • Present, submit and obtain approval of inception report from FEED II and HQ management 	August 2015 “ “ “ “ “ “	FEED II “ Evaluation team “ “ “ Both
Phase II: field work <ul style="list-style-type: none"> • Data collection • Interviews/discussions with key stakeholders, project site visits, etc. • Data compilation and analysis • Organize regional validation workshop for stakeholders • Receive feedback 	Aug/September 2015	Evaluation team
Phase III: Validation workshop <ul style="list-style-type: none"> • Organize regional and national validation workshops • Present preliminary findings of the mid-term evaluation • Receive feedback from stakeholders 	Late September/Early October	FEED II Evaluation team “
Phase IV: Reporting <ul style="list-style-type: none"> • Incorporate feedback from stakeholders and FEED II meeting • Develop draft evaluation report 	October 2015	Evaluation team

<ul style="list-style-type: none"> • Present draft report to FEED II • Finalize evaluation report • Develop brief evaluation report • Submit final report 		
Phase IV: Dissemination report <ul style="list-style-type: none"> • Final evaluation report dissemination • Recommendation implementation and follow-up 	October 2015	FEED II

7. Ethical Guidelines

Every member of the evaluation team must adhere to ethical guidelines as outlined in the American Evaluation Association’s Guiding Principles for Evaluators. A summary of these guidelines is provided below. A more detailed description can be found at <http://www.eval.org/p/cm/id/fid=51>

1. Systematic Inquiry: Evaluators conduct systematic, data-based inquiries.
2. Competence: the evaluation team possesses the education, abilities, skills and experience appropriate to undertake the tasks proposed in the evaluation. Evaluators practice within the limits of their professional training and competence, and decline to conduct evaluations that fall substantially outside those limits. The evaluation team collectively demonstrates cultural competence.
3. Integrity/Honesty: Evaluators display honesty and integrity in their own behavior, and attempt to ensure the honesty and integrity of the entire evaluation process.
4. Respect for People: evaluators respect the security; dignity and self-worth of respondents, program participants, clients, and other evaluation stakeholders, evaluators regard informed consent for participation in evaluation and inform participants and clients about the scope and limits of confidentiality.
5. Responsibilities for General and Public Welfare: Evaluators articulate and take into account the diversity of general and public interests and values that may be related to the evaluation.
6. Required Content of the Proposal

The consulting firm’s proposal must include, but is not limited to the following sections and information:

- Background- this should include a description of the firm and details of its expertise and experience in carrying out similar evaluation activities.
- Comments/Suggestions on the SoW – particularly if the firm feels there are aspects that need to be changed for them to implement and exceptionally good evaluation.
- Evaluation Methodology

- Evaluation Approach
- Techniques Employed in Selection of Sites, Participants and Key Informants
- Compilation and Analysis Techniques
- Proposed timeframe for the overall evaluation process, including validation workshop
- Presentation Outline for the Validation Workshop
- Outline of the final Midterm Evaluation Report
- Cost of the Evaluation, excluding Validation Workshop
- Evaluation Team Composition, including Descriptions of Credentials and CVs of proposed Members

8. Instruction for Proposal Preparation

The selection committee made up of staff from ACDI/VOCA will evaluate the Offerors based upon their written technical and cost proposals. Each section will be evaluated according to the criteria for evaluations below. Offerors are expected to examine the specifications and all instructions in the SOW. Failure to do so is at the Offeror's risk. Interested Offerors must provide the following:

8.1. Capability and Technical Experience statement

Demonstrate capabilities and technical experience by providing the following: (Illustrative only; insert detail and page numbers for any item selected)

- a. Organization Overview: 1 page description of firm;
- b. Capabilities Statement: 1 page description of relevant capacities and experience;
- c. Three past Performance references from similar evaluations
- d. Project Approach: a detailed proposal explaining how the firm intends to achieve the expectations set forth in section II (the attached SOW documents), including specifications of any data collection equipment required. This proposal should include the following:
 - Evaluation approach
 - Proposed methodology
 - Detailed implementation plan
 - Outline of activities/task to be completed

8.2. Project Staffing

Identify the project staffing and the time each will spend on this activity. Include no more than a half-page bio-sketch for each individual considered essential for the successful implementation of this contract. Staff proposed must possess the required qualification and be able to conduct the responsibilities outlined in the SOWs. The Team leader should be

responsible of overseeing the implementation of both of the SOWs in order to ensure consistency in implementation of methodology and reporting of findings. The Team Leader should have significant formal education at the post graduate level in a field relevant to evaluation, extensive experience using mixed methods of investigation and leading performance evaluations. The Technical Specialists should have an advanced degree in a relevant academic field and demonstrated experience using high level skills and methods of qualitative research and evaluation in their technical sector in developing countries.

8.3. Cost Proposal

Offerors will submit a proposed budget and budget notes with their proposals in a separate, sealed envelope (or separate file, if submitting via email) labeled “Budget Proposal.” **Separate budgets and detailed budget notes should be prepared for each of the SOWs in the templates provided.** The proposed budgets will have sufficient detail to allow evaluation of elements of costs proposed. The budget line items in the attached template are included as examples. The Offeror should adapt the line items to most accurately reflect the costs included in their proposal. Budgets should be submitted in the currency in which your organization is located and will be paid; please label your budget with the name of the currency. ACDI/VOCA reserves the right to request any additional information to support detailed cost and price. The budget notes should provide a narrative breakdown of all costs included in the budget. Offerors must indicate if their budget includes or excludes any Value Added Tax (Vat),

8.4. References

Please include three client references and contact information. References should have worked with your organization within the past two years in connection with the countries or regions (and if possible, subject matter) applicable to this RFP.

9. Solicitation Process

Once the SOW is advertised to both international and local audiences on different Monitoring and Evaluation websites including the American Evaluation Associations’ website, the Offerors must prepare a formal proposal as indicated in section 8 and sent to the contact person at ACDI/VOCA. The submitted proposals will be reviewed against the criteria for evaluation defined below and rated on their ability to satisfy the requirements stated in this SOW document. a preferred offeror will be chosen and formally notified. ACDI/VOCA will be negotiating and the selected Offeror, if endorsed will begin work on the mid-term evaluation.

Table- 2 Proposal evaluation Criteria

Evaluation Criteria	Maximum Score
Approach, Strategy, Methodology	25
Key Staff and Quality Control Mechanisms	25
Company Capabilities	20
Past Performance/References	20
Experience/Presences of Offeror in Region of Country	10
Cost Proposal (Reasonable and Complete)	-