CGIAR 2019 Annual Reporting Template

Ethiopia Priority Country Program

Ethiopia
2019 Annual Report

The Livestock CRP partners and ILRI programs have agreed to take responsibility for implementing the CRP agenda and have aligned certain bilateral project activities and/or have been provided W1/W2 funding to support that work. The Livestock CRP priority countries are intended to serve as the CRP 'field laboratories' where the flagships can test their products and take them to scale and contribute to designing integrated livestock interventions. The priority country projects have been allocated W1/W2 funding both from the PMU and from flagships to conduct their activities.

The purpose of this report is twofold:

(i) To ensure Flagship Leaders are aware of the progress achieved by the partner /program/priority country project and individual staff so it can be appropriately reflected in the flagship reports; and

(ii) To provide a record of accountability for the funding allocated to the partner/program/ priority country project. The focus is on capturing achievements in the reporting year and their significance rather than describing ongoing activities and future intentions.

The report has 3 parts:

(i) Part A provides an overview of progress made by the partner/program/country project in terms of both implementing flagship activities and advancing the CRP's engagement with partners/programs.

(ii) Part B follows the overall CGIAR Annual Reporting Template and gathers any relevant achievements or issues related to each section that could be highlighted in the flagship and overall CRP reports.

(iii) Part C is a traffic light report on the 2019 POWB deliverables that the partner institution or program committed to achieve as the basis for the Program Partner Agreement (PPA), or the deliverables that the priority country team committed to in their Activity Sheets.

There is some duplication between Part B and Part C, but it is important to provide a record of achievement against the partner's contractual commitment and to make this readily available to the flagship leaders.

Please complete all boxes in the template, indicating N/A if there is nothing to report

Write in clear language that is understandable to a non-specialist reader with no prior knowledge of the CRP and explain all acronyms

Country: Ethiopia

Project Name: SmaRT-Ethiopia

Country Coordinator Name: Barbara Rischkowsky and Aynalem Haile

List of W1/W2 funded CRP staff (and location) by flagship

Please include all staff members with 5% or more of their time allocated to the CRP. If the staff member is involved in priority country project work, indicate the country or countries in the last column

Staff name	Institution (CIAT/ILRI/ ICARDA/SLU)	Job title	Duty station (country)	Flagship affiliation (Genetics/Health/ Feeds & Forages/ Environment/LLAFS)	Priority country involvement (Ethiopia/ Tanzania/ Uganda/ Vietnam)
Aynalem Haile	ICARDA	SR Breeding & Genetics/Co-coordinator	Ethiopia	Genetics (focal person)	Ethiopia
Joram Mwacharo	ICARDA	SR Geneticist	Ethiopia	Genetics/ Health	Ethiopia
Mourad Rekik	ICARDA	SR Production	Ethiopia	Genetics/ Health (focal person)	Ethiopia
Tesfaye Getachew Mengistu	ICARDA	Coordinator Genetics	Ethiopia	Genetics	Ethiopia
Barbara Rischkowsky	ICARDA	Director, Resilient Agricultural Livelihood Systems	Ethiopia	Genetics/LLAFS (focal person)	Ethiopia
Jane Wamatu	ICARDA	Animal Nutritionist	Ethiopia	Feeds & Forages (focal person)	Ethiopia
Girma Tesfahun Kassie	ICARDA	Agricultural Market Economist	Morocco	LLFAS	Ethiopia
Wole Kinati (NRS)	ICARDA	Research Associate - Gender	Ethiopia	LLFAS	Ethiopia
Woinishet Asnake (NRS)	ICARDA	Research Officer-Economics	Ethiopia	LLFAS	Ethiopia
Abiro Tigabie (NRS)	ICARDA	Research Officer-Economics	Ethiopia	LLFAS	Ethiopia
Barbara Wieland	ILRI	Principal Scientist - Herd health	Ethiopia	Health	Ethiopia
Mesfin Mekonnen	ILRI	Research Associate	Ethiopia	Health	Ethiopia
Melkamu Derseh	ILRI	Scientist - Animal Nutrition	Ethiopia	Feed & Forages	Ethiopia

Solomon Mwendia	CIAT	Tropical Forages	Kenya	Feeds & Forages	Ethiopia
An Notenbaert	CIAT	Tropical Forages	Kenya	Environment	Ethiopia
Jessica Mukiri	CIAT	Research Associate – Tropical Forages	Kenya	Environment	Ethiopia
Jason Sircely	ILRI	Scientist - Ecosystem Ecologist	Kenya	Environment	Ethiopia
Bedasa Eba	ILRI	Research Officer-Pastoralism and Rangelands	Ethiopia	Environment	Ethiopia
Mamusha Lemma Woldegiorgis	ILRI	Research Officer - Capacity Development	Ethiopia	LLAFS/Cap dev	Ethiopia
Abdi Etafa	ILRI	Capacity Development Associate	Ethiopia	LLAFS/Cap dev	Ethiopia

PART A: Partner/Program/Country Annual Progress

A.1 Achievements

Provide an overview of 2019 achievements in advancing the CRP Livestock research agenda towards its targeted outcomes, by flagship and in the priority countries (500 words max.)

The Ethiopia country project proposal was developed based on internal meetings in Ethiopia and Kenya in March 2019 and a multi-stakeholder meeting in Ethiopia in May 2019. The country project will still be referred to as SmaRT (Small Ruminant value chain Transformation)-Ethiopia to underscore continuity of the interventions. The project proposal defines interventions included in the integrated package called SmaRT pack. A planning meeting with NARS partners of the four sites came up with a consolidated integrated implementation plan for each of the four sites and confirmed new intervention villages. This was followed up with meetings with communities in each new village in the four sites (Menz, Abergele-Sekota, Doyogena and Bonga) where participating households were identified. Multi-stakeholder platforms at community level were established by the Health team in two kebeles in Doyogena i.e. Ancha Sadicho and Hawara Arara. At the inception meeting, stakeholders discussed animal health challenges in the area and agreed on joint action plans. Formation of these platforms will be continued in the four sites and consolidated with Communities of Practice which were established to support sheep fattening. The proposal was complemented with a partner and actor landscaping study developed in a workshop with key resource persons in August 2019. It describes partners and stakeholders identified at national and local level whose support is required to achieve expected changes across the change pathway. It includes an engagement plan for identified gaps in partnerships.

Genetics FP: Implementation of CBBPs continued in seven sites in Ethiopia, including the four sites selected for SmaRT pack implementation. The dissemination of improved genetics to new villages is supported by the establishment and rapid expansion of the reproductive platform which is delivering artificial insemination and reproductive technologies to support CBBPs. Breeding programs in the new villages selected for SmaRT pack implementation were initiated with a total of 59 superior breeding sires from the CBBPs in the old target sites. Routine performance and pedigree data collection has been set up. Jointly with ILRI Health FP, a site-specific overview of the main zoonotic reproductive diseases for which improved sires should be vaccinated or screened was published. This is a significant input towards institutionalization of certification of improved rams and bucks. A consultation workshop with partners on the certification process was undertaken and this has paved way for field implementation in 2020.

Health FP: The community conversation approach, was further developed by adding new training modules on antimicrobial use and resistance and animal welfare; conversations on these two topics took place in the Menz site. To facilitate scaling of the approach, a guideline and training material targeting extension agents and veterinarians was developed and tested in a training workshop of local community facilitators, who will implement Community Conversations on the ground. Good progress was made on health interventions in SmaRT pack: A longitudinal follow up of respiratory diseases was implemented in Doyogena, Abergelle-Sekoto and Menz sites. Deworming campaigns were conducted in Menz and Bonga with collection of fecal samples pre- and post-deworming. In Bonga, coenurosis control was initiated through deworming of dogs. Vaccination for ovine pasteurollosis was conducted in Menz with pre- and post-serum sampling. In Abergele, herds were vaccinated against PPR, pasteurellosis and shoat pox. Novel models of service provisions have been identified and are being tested through new bilateral projects (HEAL and HEARD). Ongoing stakeholder consultations and taskforces on cross-sectoral regional public-private partnerships have been pivotal in the undertakings.

Feed and Forages FP: Technology adoption of youth and women in sheep fattening was supported using an entrepreneurial skills development approach through development of training modules, business models, a micro-finance assessment report and sensitization of policy enablers in Ethiopia (joint **F&F** and **LLAFS**). Targeting youth in the scaling of sheep fattening is breaking gender barriers and strengthening resolve of young women. To improve ram growth performance, evaluation of pre and post mating nutritional flushing for ewes was undertaken in Bonga and will continue for both breeding rams and ewes in other project sites in 2020. The required information for a comprehensive feeding and management calendar for Bonga, Menz and Doyogena is being captured through an on-going survey on forage production and utilization.

Environment FP: Potential environmental challenges associated with the interventions put in place by the priority country program will be assessed through ex-ante modelling with a new version of the CLEANED tool, which will build on the strengths of the current CLEANED-X and CLEANED-R tools. The development of this new CLEANED-eXtRa tool is on-track and will be ready in 2020 for deployment in collaboration with Ethiopian partners. TORs as well as training and workplans have been developed. Characterization of management systems has shown little in the way of institutional mechanisms for managing communal grasslands, highlighting the critical need for such mechanisms to prevent, arrest, and reverse grassland degradation. Grassland monitoring plots have been established to enable action research trials on restoration to proceed, from a rigorous quantitative baseline.

LLAFS FP: Empirical evidence was generated and documented on the positive impact of small ruminant market sheds (report) which can be an indispensable input to the national efforts being exerted to transform the livestock sector in general and particularly improve the livestock marketing system. The online template developed for systematic characterization of Sustainable Livestock Management (SLiM) Options based on socio-ecological contexts was tested with ten datasets from the Community-Based Breeding Program (CBBP).
A scoping study for the marketing models in Doyogena, Bonga and Abergele-Sekota was carried out to study the capabilities and production/marketing culture of value chain actors, the purchasing behavior of buyers, the characteristics and behavior of competitors and potential partners for collective action. The baseline for SmaRT pack intervention and control sites will be conducted in March 2020.

A.2 External partnerships and engagement

Describe any significant changes in external partnerships of the partner/program/country project contributing to CRP work, and any achievements in strengthening stakeholder engagement (200 words max.)

In the implementation of the SmaRT-Ethiopia project, national research partners continue to play a key role at all stages of research and benefit from and contribute to capacity development activities. In 2019, integration of public and private extension agencies into project implementation has been intensified. At the producer level, community-based actions, which are applied for disease control, breeding programs and grazing management have gained even higher importance for SmaRT pack implementation. They will be supported through community conversations as a gender transformative and training approach, community-based multi-stakeholder platforms. These platforms will build on the Community of Practice formed by the sheep fattening team and the community multi-stakeholder platforms under Health. To institutionalize certification of improved sires under **Genetics FP**, a partnership has been established with National Animal Genetics Improvement Institute (NAGI) which will be the lead institute in implementing the scheme. The engagement with AbacusBio has sped up the development of the data recording, management and analysis system for genetic improvement which benefits the rapid establishment of breeding schemes in new SmaRT pack villages. The **Health FP** works very closely with the Ministry of Agriculture to develop more accessible services for smallholders under the bilateral project HEARD which aims to transform animal health service delivery through public-private partnerships. Under **Feed & Forages FP**, Communities of Practice were initiated with an aim to garner support from regional and local administrators for an enabling environment to promote market-oriented sheep fattening. Workshops to strengthen their functionality were organized in the project sites.
Local research teams have been expanded by including natural resource management researchers to implement the new best-bet interventions on managing communal grasslands under **L&E FP**.

A.3 Internal partnership progress

Describe any significant changes during 2019 that have affected the role of the partner/program/country project in the CRP, its expectations, its commitment and its capacity to contribute. Highlight any emerging issues in the relationship with the CRP and how they are being addressed (200 words max.)

Cross centers:
SmaRT-Ethiopia brings together ILRI, CIAT and ICARDA researchers. The SmaRT team has expanded, particularly, through involvement of **L&E FP** researchers from ILRI and CIAT. An even closer collaboration compared to the past years will be required to implement the ambitious program in an integrated way.
ICARDA, ILRI and CIAT are also collaborating under **F&F** in the assessment of context specific forage options, utilization and constraints under the Ethiopia country program.
ICARDA and ILRI are jointly developing the community conversation approach to be used across FPs.

Cross FPs:
The certification process for improved sires was jointly developed by the **Genetics** and **Health** FPs.
The entrepreneurial Skills Development and scoping study on micro-finance institutions related to scaling of sheep fattening farmers and youth groups was jointly supported by **F&F** and **LLAFS**

PART B: Contributions to CRP annual report

Please highlight any achievements relevant to each section, using bullet points that can be extracted straight into the flagship reports. This is important as part of the justification for future W1/2 allocation to support CRP work by the partner/program/priority country. Refer to the Tables where relevant.

1. Key Results

1.1 Progress Towards SDGs and SLOs (sphere of interest, with research results frequently predating the CRP)

a) overall contribution of CRP towards the SRF targets, based on rigorous adoption and/or impact data. Please complete Table 1: Evidence on Progress towards SRF targets (Sphere of interest) and refer to this in the text (150 words max.)

SLO target: 100 million more farm households have adopted improved varieties, breeds, trees, and/or management practices

In the four Ethiopia-SmaRT sites, a total of 1012 households have been registered for implementing SmaRT Pack in old and new target villages, among them 164 female-headed households. The households in the four new villages has reached 196 households but needs to be increased. These households are considered as potential future adopters. The number of beneficiary smallholder farmers in Ethiopia who have taken up improved sheep fattening practices is much larger and has reached 2000.

b) any areas of learning from impact assessments which have influenced the direction of the program (100 words max.)

Assessment of the impact of smart marketing which comprises collective action and market information, revealed that trainings provided to SR producers on collective action was insufficient to bring about measurable change although there was a lot of interest. However, some soft changes were observed. This intervention would have required several more trainings and continuous investment, which would have been too cost intensive. Therefore, only the impact of provision of market information was fully analyzed (a paper is in preparation). Matching household observations from the two quantitative VC assessments (panel data) and data cleaning required much more time than originally planned, therefore, the analysis is delayed.

1.2 CRP Progress towards Outputs and Outcomes (spheres of control and influence)

1.2.1 Overall progress

Provide a brief summary narrative about how the CRP progressed towards the agreed program outcomes, highlighting (i) major pieces of work and (ii) major course corrections. Where relevant, indicate cross-flagship linkages (200 words max.)

Please complete the following tables and refer to them in the text, as appropriate:

- *Table 2: Condensed list of policy contributions*
- *Table 3: List of Outcome/ Impact Case Reports from this reporting year (Sphere of Influence)*
- *Table 4: Condensed list of innovations by stage for this reporting year*
- *Table 5: Summary of status of Planned Outcomes and Milestones (Sphere of Influence-Control)*

1.2.3 Variance from Planned Program for this year

*(a) Have any promising research areas been significantly **expanded**? If so, for each example, please explain clearly where the demand came from (e.g. promising research results, demand from partners) and where the money for expansion has come from? (100 words max.)*

Under **FP Genetics**, partners in Ethiopia made earnest requests for expansion of the reproductive platform towards more goat sites, particularly in the North (Abergelle and Sekota). This was partly funded by remaining funds from the MBoss project and funds assigned to the country program in Ethiopia. Technical backstopping for the scaling of CBBPs under the Ethiopia Livestock Sector Development Program was to be fully funded by the grant from the Ministry of Agriculture but due to contractual issues, the funding began end 2019, necessitating support from CRP funds during initial parts of the year

*(b) Have any research lines been dropped or significantly **cut back** (note that cutting research lines which do not seem to be delivering is seen by Funders and the System Organization as a sign of good management, not of failure). If so, please give specific examples and brief reasons, and if funding was reallocated to other work, explain where the money went (100 words max.)*

No research lines have been cut back or dropped but some delays were faced:
Under **Genetics,** the use of ultrasonography as a management tool in community flocks has not started due to the tight schedule towards the end of the year. This is expected to start in 2020.
Activities of the ILRI **Environment** team related to management of communal grasslands was delayed due to late access to their budget.
The gender capacity assessment of partner institutes in three sites planned to be completed in 2019 under **LLAFS** was also slightly delayed because of two reasons; the ICARDA gender researcher left to pursue PhD studies in Australia and field work in one site had to be postponed due to a (temporary) security risk. The report will be completed end March 2020.
The baseline study for the newly selected target and control village in Bonga was planned for the end of 2019 because the previous benchmarking study conducted in Bonga in spring 2019 did not include any control villages, which are different from the other three sites. However, when the overall sampling frame for the baseline was examined, it was concluded that a larger survey was necessary. It was, therefore, deemed practical to do all required survey work at the same time.

*(c) Have any Flagships or specific research areas **changed direction**? If so, please describe how and why (100 words max.)*

L&E FP is now active in the SmaRT-Ethiopia Program with two activities: 1) ex-ante assessment of environmental effects of adoption of the SmaRT Pack, and 2) testing a new best-bet on managing communal grasslands in the highlands.

1.2.4 Altmetric and Publication highlights

*a) Highlight **any non-peer reviewed publications** with an inordinate number of tweets, blog posts or other attention (100 words max.)*

At present we are not aware of any.

*b) Highlight 2 to 3 **'special' peer-reviewed publications from 2019** e.g. ones with a large number of citations/downloads, high media attention, high Altmetrics score (100 words max.)*

Genetics:
The paper Community-based breeding programmes are a viable solution for Ethiopian small ruminant genetic improvement but require public and private investments in Animal Breeding and Genetics, is one of two key publications for CBBPs . (https://hdl.handle.net/20.500.11766/10541).

Health: A joint ILRI/ICARDA paper discussing disease priorities as perceived by farmers using a mixed-methods approach has reached an Altmetrics score of 19 with over 1000 views within two months of publishing.

1.3 Cross-cutting dimensions (at CRP level)

1.3.1 Gender

*a) Using concise bullet points, list any important CRP **research findings, methods, tools, capacity development, policy changes or outcomes** in 2019 related to gender issues (150 words max.)*

- A paper analyzing women participation in CBBPs showed that men dominate sheep breeding cooperatives: More than 50% of men represented women, only 11% of women represented their spouses in the cooperatives. Women's participation in CBBPs is affected by lack of awareness and access to information on breeding cooperatives, lack of transparency on the side of the cooperative leadership, domestic work burden and gender inequalities at household level (publication submitted, expected in 2020)
- Positive deviant cases were observed: women and men farmers practicing changed gender relations against the existing normative structures (report).
- Improve involvement of women in CBBPs; gender capacity development interventions were implemented.
- The community conversation approach was successfully tested by ILRI and ICARDA in 2018 and 2019. Evidence was provided on behavior change (research brief on the role of Community Conversations in transforming gender relations and reducing zoonotic risks in the highlands of Ethiopia), and on the impact of community conversation as a gender transformative training approach. It was further developed by ILRI under the Health FP by adding new gender sensitive training modules on antimicrobial use and resistance and on animal welfare.
- Funded by Strategic gender funds in 2017/2018 the literature review related to the Ethiopia country gender assessment was published.

b) Mention any important gender findings that have influenced the direction of the CRP's work, and how things have changed (100 words max.)

Based on the changes in gender relations and work sharing achieved through the community conversations (CC), the approach was integrated as GTA intervention into SmaRT pack. CCs will be applied for awareness raising and knowledge sharing for other technical areas beyond Livestock Health.
The positive deviant cases observed in CBBPs inspired a study which identifies such cases beyond CBBPs and determines favoring conditions. Despite challenges, these cases prove that individuals have the desire to shape their own life and to challenge constraining norms. Follow-up research will explore how these individuals can serve as role models and champions in their communities towards transforming constraining gender norms.

c) Have any problems arisen in relation to gender issues or integrating gender into the CRP's research? (100 words max.)

Our national gender specialist in Ethiopia, Wole Kinati was awarded a PhD scholarship in Australia and left in October 2019. Although he will conduct his PhD field research in the Ethiopia country program, it means reduced gender capacity in the SmaRT team. Furthermore, Annet Mulema moved to the CCAFS team in Kenya, which again reduced our gender expertise. Nevertheless, this is mitigated by a joint ICARDA-ILRI appointment of a cap dev specialist, Abdi Etafa, to be supervised by Mamusha Woldegiorgis who has gender research experience and by engaging consultants with gender expertise.

1.3.2 Youth and other aspects of Social inclusion / "Leaving No-one Behind"

*a) Using concise bullet points, list any important CRP **research findings, methods, tools, capacity development, policy changes or outcomes** in 2019 related to issues of youth, social inclusion, and "leaving no-one behind", for example with the poorest groups, indigenous peoples, or disabled people, and intersectional analysis (150 words max.)*

ICARDA in partnership with the National Research Centers and the national extension have used youth as disseminators of improved sheep fattening technologies and practices in the Ethiopian highlands. 485 youth in 75 villages were organized into 44 youth groups which serve as benchmark sites for sheep farming communities for the adoption of improved market-oriented sheep fattening practices. To ensure sustainability of the entrepreneurial culture, Community of Practice teams in target sites have been formed and strengthened with knowledge and skills to enable them garner support for an enabling environment for commercialized sheep fattening from regional and local administrative offices.

b) Mention any important youth and social inclusion findings that have influenced the direction of the CRP's work, and how things have changed (100 words max.)

A combination of technical and entrepreneurial trainings provided under F&F and LLAFS FP has shown effectiveness and has led to a marked shift in mindset and attitude leaning towards commercialized sheep fattening. 85% of the youth have grown fattening ram numbers per cycle from 0-1 to more than 6 fattening rams within a period of 1.5 years. 90% of the youth are undertaking 3-4 fattening cycles per annum, with average daily gains of rams increasing between 40-67% as a result of improved fattening practices and gains in selling price of rams between 45-70%.

c) Have any problems arisen in relation to youth and social inclusion issues or integrating youth into the CRP's research? (100 words max.)

Youth groups comprise a membership of 20 males & female. To support collective action, formal registration of the groups is recommended. Nevertheless, Ethiopian by-laws currently only allow formal registration of groups/cooperatives with a minimum of 50 persons. Progress is underway to address this issue.

1.3.3 Capacity Development

Summarize key achievements and learning points in Capacity Development in 2019, cross-referencing to other data in this report (e.g. results tagged as principal for CapDev) where relevant (200 words max.)

1 PhD and 2 Master theses were completed under Genetics FP:

- Control practices of gastrointestinal nematodes and inbreeding of Ethiopian sheep managed in community-based breeding programs (PhD).
- Estrus synchronization and artificial insemination technologies in Abergelle goat on-station and on-farm conditions of Waghemira zone, Ethiopia (MSc)
- Evaluation of Artificial Insemination in Menz Sheep Following Estrus Synchronization with Progestogen and Prostaglandin-based Synchronization Protocols (MSc)

Three new master students were recruited under F&F and 12 master students under Genetics with topics related to SR breeding.

Long-term training adds value to research topics, reinforces the links with national universities in Ethiopia and builds capacity.

Four major training courses related to the implementation of project activities were offered:

- On-job training on reproductive biotechnologies and artificial insemination in goats and sheep to 11 (all male) and 10 (all male) vets and livestock specialists in Abergelle and Bonga-, respectively,
- Training on breeding data management and analysis of 60 NARS (40;7 women) in Hawassa and 20 (all male) in Addis Ababa)
- Training workshops on strengthening functionality of Communities of practice https://hdl.handle.net/20.500.11766/10807,
- Training of facilitators for community conversations, https://hdl.handle.net/10568/107025

1.3.4 Climate Change

Summarize key achievements and learning points in terms of your contributions to addressing climate change issues (200 words max.)

The **Genetics FP** in collaboration with CCAFS established community-based breeding programs in climate smart villages considering local genetics which are well adapted to local conditions.
The **Health FP** collaborated with the **Environment FP** to develop a successful project proposal which aims to quantify impact of disease infestation in small ruminants on greenhouse gas emission intensities (start January 2020).

2. Effectiveness and Efficiency

2.1 Management and governance

Describe any major changes to management, governance arrangements and practices, if any. Describe any key top-level program management challenges, if any, and how they were addressed (200 words max.)

The leadership role in ICARDA for the Ethiopia priority country program is divided into overall scientific coordination of contributions from involved partners and staff across the flagships (Barbara Rischkowsky) and coordination of implementation on the ground with national partners and continued networking (Aynalem Haile). A national coordinator (Abiro Tigabie) supports all partners in the implementation of planned interventions. Siboniso Moyo supports the country leadership through high level engagement with the Ethiopian government, effective linkage to the national research strategy and ensuring potential synergies with other CRPs through ILRI's role as the host institute for CGIAR in Ethiopia.

2.2 Partnerships

2.2.1. Highlights of External Partnerships (300 words)

Summarize any interesting highlights, value added and points to improve/ learning points from 2019 and refer where appropriate to Table 8: Key external partnerships (200 words max.)

- The engagement with Abacus Bio for Genetics speeds up the development of professional applications to support data capture and management.
- The new partnership with the Ethiopian Veterinary Association has been key to making progress in HEARD project activities towards transforming veterinary services.
- Partnership with Ethiopia National Animal Genetic Improvement Institute (NAGII) was established to work towards certification of improved sires from community-based breeding programs and to work towards harmonized animal identification systems. It was decided that NAGII will be the responsible institution for the certification of improved genetics in Ethiopia. The partnership with ICARDA to prop up formal processes has been discussed, and a MoA will be signed in 2020.

2.2.2. Cross-CGIAR Partnerships (300 words)

Summarize general points on highlights, value added and points to improve/ learning points from 2019 and refer where appropriate to Table 9: Internal Cross-CGIAR Collaborations. Any points you can include on added value of Platforms and integrating CRPs would be very useful (200 words max.)

The **Genetics** flagship is working closely with **CCAFS** to upscale community-based breeding programs (CBBP) in climate smart villages in Doyogena district in Ethiopia. Through this partnership, 3 CBBPs were established.
Studies under **LLAFS** on the impact of market sheds on market participation and earnings of SR producers and on the willingness to pay for market facilities in Ethiopia were co-funded by CRP **PIM** Inclusive and efficient value chains (FP3).
Herd health interventions, incl. capacity development efforts, often include elements of food-safety and reduction of zoonotic disease risks, hence ongoing discussion and coordination with respective **A4NH** activities and research priorities helps to increase impact and offers opportunity for cross-CRP learning.

2. 3. Intellectual Assets

(a) Have any intellectual assets been strategically managed by the CRP (together with the relevant Center) this year? E.g. taking out intellectual property rights, licensing, new innovative practices. Note that strategic management implies involvement of PMU, flagship or cluster leaders in decision making, in furtherance of the CRP Theory of Change (50 words max.)

NA

(b) Indicate any published patents and/or plant variety right applications (or equivalent) associated with intellectual assets developed in the CRP and filed by Centers and/or partners involved in the CRP, giving a name or number or link to identify them (100 words max.)

NA

(c) List any critical issues or challenges encountered in the management of intellectual assets in the context of the CRP (50 words max.)

NA

2.4 Monitoring, Evaluation, Impact Assessment and Learning (MELIA)

a) Complete Table 10: Monitoring, Evaluation, Learning and Impact Assessment and add a short narrative here to introduce the table and highlight any key points of interest (max. 50 words)

The **Health FP** conducted an assessment on the impact of community conversation as a gender transformative approach and behavior change in animal health management. Promising early behavior change was observed. Hence, it was decided to add more training modules following this approach instead of using conventional farmer trainings and to monitor long-term changes with the vision to embed the approach in the Ethiopian extension system.

b) Complete Table 11: Update on Actions Taken in Response to Relevant Evaluations

2.5 Efficiency

Describe any examples of efficiency gains and successes in 2019 and points to improve in future, providing numbers where possible. For previous examples, see 2017 CGIAR performance report, p. 45 (100 words max.)

In the early stages of implementation of SmaRT-Ethiopia, it has already become clear that efficient implementation of the program will require close collaboration and investment of sufficient time for joint planning of the teams to mainstream and plan the agreed shared activities, to contribute effectively to monitoring and evaluation activities and to avoid duplication of efforts and overload of national partners and rural communities. Timely responses to the coordinator still need to improve. Brief monthly meetings are being held to ensure better coordination, planning and sharing information. In addition, thematic meetings with specific team members are required for planning of shared activities. More time needs to be invested in identifying scientific linkages between interventions and how to study these in the given experimental set-up.

2.6 Management of Risks to Your CRP

Summarize any encountered risks and mitigation measures taken under the three following headings: programmatic, contextual and institutional risks (for more information see the CGIAR Risk Management Guidelines (100 words max.)

Under **F&F**, scaling of market-oriented sheep fattening practices and technologies depends on an enabling environment that requires input from several different government offices/departments (cooperative office, gender and youth, TEVT for training, Job creation, livestock bureau) that currently operate very independently. The established 'Communities of Practice' are beginning to make them talk to each other.
For the ambitious Ethiopia-SmaRT program and all FP activities, the unpredictable security situation (ongoing civil unrest and ethnic conflicts) in Ethiopia poses a continuous risk to timely implementation of field activities. This can be partly managed by changing scheduled visits from one to another location provided the partners are available but otherwise, it is beyond our control. To mitigate associated risks, we closely coordinate with ILRI security when planning field work.

2.7 Use of W1-2 Funding

Table 12: Examples of W1/2 Use in this reporting period (2019), and briefly elaborate below on any particularly interesting points on your use of W1/2: e.g. any important achievements and/or cross-cutting work made possible (100 words max.)

Shared activities across flagships: A SmaRT project coordinator, Abiro Tigabie, was recruited; national research partners were supported to conduct community meetings in old and new target villages in the four sites and to employ M&E enumerators for the new target villages.
Genetics FP: W1/W2 funded the kick-start of breeding programs in the new target villages through provision of improved sires from neighboring CBBPs; a workshop on institutionalization of sire certification was also funded.
Health FP: W1/W2 funds were key to continued testing of integrated animal health interventions and further development of the community conversation approach.
Feed & Forages FP: W1/W2 funds supported capacity enhancement to augment uptake of improved sheep fattening technologies which included development of a training manual, business models, and strengthening capacity of Communities of Practice. Furthermore, nutritional flushing was evaluated with an aim to develop flushing guidelines, and a survey on profiling forages conducted to better target site-specific forage production.
Environment FP: Grassland characterization and baseline measurements for grassland monitoring including training of staff and partner researchers were funded with W1/W2 as well as the preparation of ex-ante environmental impact assessment with the new CLEANED tool.
LLAFS FP: W1/W2 funds supported a scoping study related to development of marketing models in three sites. Under **LLAFS/Gender**, best practices (positive deviant cases) in gender relations and their role in overcoming gender-based constraints (GBCs) among livestock keepers in Ethiopia were studied, this approach will be refined in a PhD study with University of New England. A consultancy and related travel costs were funded to assess the gender capacity in partner institutes (partly in 2019, partly in 2020).

Annual Report Tables

Table 1: Evidence on Progress towards SRF targets (Sphere of interest)

Complete this table with any available high-quality evidence on progress that was published or made available in 2019. Do not hesitate to state, "no new evidence available this year", in column 2 if appropriate. For examples of how this information can be phrased and referenced, please see Annex Table A here in the 2017 CGIAR Annual Performance Report.

If the adoption or impact data comes from a relevant innovation or contribution of the CGIAR prior to the CRP start-up (e.g. varieties released before the CRP start-up, which for most CRPs would be approximately 2012), then please support statements with published references, as shown in the 2017 Annual Report Annex Table A above. Nearly all adoption or impact studies fall into the above category. There are a few cases in which the estimated figures for at-scale adoption or impact result from an innovation released within the current CRP period. If this is the case, then the statement must be supported by a link to an Outcome/ Impact Case Report ***Maturity Level 3****.*

SLO Target (2022)	**Brief summary of new evidence of CGIAR contribution** *[Put N/A if the specific SRF target is not applicable to your CRP. Put "No new evidence in 2018" if the target is potentially relevant, but there is no new evidence available. Spell out all acronyms.]* *Max. 150 words*	**Expected additional contribution before end of 2022** (if not already fully covered). *[Optional narrative. Evidence not required.]* *Max. 100 words*
1.1. 100 million more farm households have adopted improved varieties, breeds, trees, and/or management practices	A total of 1012 households have been registered for implementing SmaRT Pack in old and new target villages, among them 164 female-headed households. The number in the four new villages has reached 196 households but needs to be increased by additional 50. The number of direct beneficiary smallholder farmers in Ethiopia who have taken up improved sheep fattening practices is much larger and has reached 2000. 660 farmers trained (416 male/244 female) through community conversation	Spillover from direct beneficiary households (registered for SmaRT pack implementation) to neighbors and even neighboring villages is expected. Numbers of beneficiaries of improved sheep fattening will increase as Government livestock bureaus (whose officers are part of the "Community of Practice" teams) in 3 regions have expressed interest in incorporating improved & market-oriented sheep fattening into their extension programs from 2020. Once community conversation is taken up in national extension systems, 100 k can be reached
1.2. 30 million people, of which 50% are women, assisted to exit poverty		

2.1. Improve the rate of yield increase for major food staples from current <1% to 1.2-1.5% per year		
2.2. 30 million more people, of which 50% are women, meeting minimum dietary energy requirements		
2.3. 150 million more people, of which 50% are women, without deficiencies in one or more essential micronutrients		
3.1. 5% increase in water and nutrient efficiency in agroecosystems		
3.2. Reduction in 'agriculturally'-related greenhouse gas emissions by 5%		
3.3. 55 M ha degraded land area restored		
3.4. 2.5 M ha forest saved from deforestation		

Table 2: Condensed list of policy contributions in this reporting year (Sphere of Influence)

List policy contributions here. (The indicator guidance for indicator #I1 number of policies includes an explanation of what is covered under the term 'policy'.)

Title of policy, legal instrument, investment or curriculum to which CGIAR contributed (max 30 words) ***Spell out acronyms in every row***	**Description of policy, legal instrument, investment or curriculum to which CGIAR contributed (max 30 words).**	**Level of Maturity**	**Link to sub-IDOs (max. 2)**	**CGIAR cross-cutting marker scores**				**Link to OICR (obligatory if Level of Maturity is 2 or 3) or link to evidence**
				Gender	**Youth**	**Capdev**	**Climate Change**	
Training of trainer module for community conversation	In order to move towards integrating community conversation as a gender-responsive approach for extension into national systems, a curriculum for 'training of trainers' was developed and tested in 2019	1	Closed yield gaps through improved agronomic and animal husbandry practices Increased household capacity to cope with shocks	x		x		Guideline and training material

Table 3: List of Outcome/Impact Case Reports from this reporting year (Sphere of Influence)

List any Outcome/ Impact Case Reports (OICR) generated in this reporting year. The report can be for a new Outcome/ Impact Case or one previously reported that has progressed to a new level of maturity or has been updated but is at the same level of maturity. Please note that you have to use the common CGIAR outcome/impact case report template. The levels of maturity (column 2) are described in the OICR template, with examples.

Title of Outcome/ Impact Case Report (OICR)	**Maturity level**: 1, 2, or 3	**Indicate if this is:** - new outcome - updated Case- same level of maturity - updated Case- new level of maturity
Genetics: Community-based Bonga sheep breeding program cooperative is investing in social responsibilities (provided by Aynalem Haile)	1	New outcome
F&F: Improved scaling approach leading to high uptake of improved sheep fattening practices and technologies	2	New outcome

Table 4: Condensed list of innovations by stage for this reporting year

Please see indicator guidance for details of innovation descriptions, types, stages.

Title of innovation (with link if possible)	**Innovation Type**	**Stage of innovation**	**Geographic scope (with location)**
Methodological framework for implementing and upscaling CBBP	Biophysical research	3-Available for uptake	Eastern and Southern Africa
Methodological framework and field implementation of sire evaluation	Biophysical research	1-End of research phase (discovery/proof of concept)	Eastern Africa

CC training on animal welfare	Production Systems and Management Practices	2	Ethiopia
CC training on antimicrobial use and resistance	Production Systems and Management Practices	2	Ethiopia
One health units for service delivery	Production Systems and Management Practices	1	Horn of Africa
Public-Private Partnership model to link mobile clinical veterinary services with Woreda (county) veterinary office by combining public and private services.	Production Systems and Management Practices	1	Ethiopia
Public-private partnership model to facilitate private sector involvement in vaccination of production diseases and strategic parasite prevention in Ethiopia	Production Systems and Management Practices	1	Ethiopia
Community Multi-stakeholder platform established in Ethiopia to discuss how animal health inputs can be best coordinated across the community with different service providers	Production Systems and Management Practices	1	Ethiopia
Business models for sheep fattening youth groups	Production Systems and Management Practices	1	Ethiopia

Table 5: Summary of status of Planned Outcomes and Milestones (Sphere of Influence-Control)

For each outcome, outline highlights of progress, setbacks and changes of direction this year, and briefly explain how the set of milestones have contributed to current progress/direction (100 words max.). Indicate the status of milestones and include links or references for supporting evidence where appropriate.

Flagship	Outcome	Summary narrative on progress against outcome in 2019	Milestone	2019 milestone status (complete, extended, cancelled, or changed)	Evidence for completed milestones or explanation for extended, cancelled or changed
F1	Outcome 1.1: Data on livestock diversity and systems, including from a gendered lens, used to develop or refine genetic improvement and / or conservation strategies by policymakers, national research and development partners, and the private sector, in 5 CRP priority countries and other locations.		2017 extended to 2019 - Milestone 1.1.1 Increased (household survey, productivity and genomics characterization) data availability (published open-access) on livestock diversity and systems, including from a gendered lens)		
F1	Outcome 1.2 Genetic improvement strategies for improved livestock genetics implemented by national research and development partners, and the private sector in 6 CRP priority countries and other locations.		2017 extended to 2019 - Milestone 1.2.2 Breeding schemes developed and piloted in CRP priority countries		Completed for ICARDA (Aynalem) in Ethiopia: https://hdl.handle.net/20.500.11766/10541 https://hdl.handle.net/20.500.11766/10553
F1			2017 extended to 2019 - Milestone 1.2.3 Protocols in place for the collection of data for phenotypic and production systems characterisation, for genome editing and ex-situ conservation.		

F1			2019 - 1.2.4 Availability of zebu x taurine admixture SNPs chips for screening of dairy cattle crossbreed in Ethiopia and Tanzania by August 2019.		
F2	Outcome 2.1 Assessment tools for significance of animal diseases and risk maps for emergence of animal diseases are used by 100 local and national and 50 international research partners and donors to prioritise research and development interventions to reduce livestock disease risks for livestock keepers.		2019 - 2 epidemiological risk models (pig and small ruminant disease) developed, and modelling framework for assessment of PPR control and eradication defined, by end of 2018.		
F2	Outcome 2.2 Context specific herd health management packages adopted by farmers, extension and animal health workers in priority countries and other locations.		2019 - Tool to determine herd health packages for the pig value chain in Uganda developed by the end of 2018.		
F2	Outcome 2.4 National and international research partners, government agencies and the private sector use 2 novel diagnostic assays and vaccines for control of ASF,		2019 - Agreements with at least 2 private partners to commercialise improved diagnostic tests for CBPP in Kenya, Uganda, Ethiopia, Tanzania and Mali by the end of 2018.		

	CBPP, CCPP, ECF and PPR in at least 6 priority countries.				
F2	Outcome 2.5 Improved access to livestock-related health services and products for female and male livestock keepers in 4 priority countries		2019 - Market for diagnostics in Kenya, Uganda, Tanzania, Ethiopia and Mali assessed and cost effectiveness of producing thermostable PPR vaccine analysed by July 2018.		
F3	Outcome 3.1 - Local, national and international research and development partners, the private sector, decision-makers and livestock producers are able to diagnose feed constraints and opportunities and to effectively prioritize and target feed and forage interventions, resulting in: a 10% improvement in utilization of feeds and forages, a 20% increase in animal production using improved feed and forage technologies, a 10% accuracy		2019 - 3.1.2 Research and development partners, decision makers and the private sector (input suppliers) evaluate and use improved tools such as Gendered-FEAST for on-farm (one country), and feed supply demand assessment tool for regional (one priority country) and national feed assessment (one priority country). 2 partners at each scale (on-farm, regional, national).		

F3	increase for biomass and quality estimation and at least 250,000 annual visitors to global databases, repositories, interactive tools and maps and the Tropical Grasslands/Forrajes Tropicales journal website.		2019 - 3.1.6 Research partners and the private sector use refined CGIAR stationary and mobile NIRS hubs in Eastern Africa: in 1 priority country and one other country with at least on key NARS and private sector partner each in each country		
F3			2019 - 3.1.12 Access of research partners to CRP generated knowledge on forages increased through 3 issues of the Tropical Grasslands journal (January, May, September) and 1 released and updated tool (SoFT)		
F3	Outcome 3.3 - National and international research and development partners and the private sector are using CRP developed forage and rangeland resources (with enhanced traits), in 30 countries and reaching producers who plant over 2 million ha, to increase the rate of genetic gain and exploit the genetic diversity of		2019 - 3.3.2 A total of 100,000 new hectares planted in 2019 with forage hybrids in a total of at least 15 countries (calculated based on seed sales). The total area of hybrids scaled will have reached 1,000,000 hectares in 2019 and includes all hybrids scaled since 2001		

F3	forages and rangeland species to enhance stress-tolerance, biomass productivity and nutritive value.		2019 - 3.3.4 10 barley genotypes with higher biomass, higher grain yield, better tolerance to biotic and abiotic stresses disseminated to NARS partners in Morocco and Ethiopia		
F3	Outcome 3.4 - New forage and crop cultivars, superior to local (based on food, feed and fodder traits weighted according to target domains), made available by development partners, government agencies and the private sector and applied by farmers in 7 priority counties and other locations.		2019 - 3.4.1 Identified dual-purpose crops (food and feed) applied by 100,000 farmers in at least one country.	Continued in 2020	
F3	Outcome 3.5 - National and international development partners, government agencies and extension services, the private sector and community-based organisations in 3 priority countries are using CRP-related research outputs for better utilization of existing		2019 - 3.5.2 Training modules in feed processing and feeding targeting key actors in feeding, mainly women, are used by at least one national and one international development partners in at least 1 priority country		

F3	and novel feed and forage resources. This will be through (a) scalable processing technologies, (b) management strategies to conserve and rehabilitate rangelands and (c) diet formulation that increases productivity while reducing overall feed and forage costs and environment impacts.		2019 - 3.5.4 At least two scalable and gender-responsive feed production and feed processing technologies are used by national and international development partners, the private sector and community-level organizations in at least one priority country		
F3	Outcome 3.6 - Livestock producers in 3 priority countries: apply management strategies to conserve and rehabilitate rangelands and pastures while ensuring ongoing ability to produce, preserve and store feed biomass and use diets that increase productivity while reducing overall feed and forage costs and environmental impacts (with the environment and livelihoods flagships).		2019 - 3.6.1 Well adapted cactus accessions and agronomic practices made available to a total of 1000 farmers in two different agro-ecological sites in India		
F3	Outcome 3.8 - Increased delivery and uptake of feed and forage resources through proof-of-concept scaling, business model development		2019 - 3.8.2 At least 1 Inclusive business model for improved supply of forages and feed processing systems tested		

	and value-chain approaches by development partners, the private sector (feed and forage traders, feed processors) and (1 million by 2022) farmers across diverse environments in priority countries and other locations in Latin America, North and East Africa and South and Southeast Asia.		and validated in 2 countries		
F3			2019 - 3.8.6 National and international development partners and other value-chain actors pilot test at least 3 extension approaches (including at least 1 that improves women's access to information) in at least 1 country		The community conversation approach was successfully tested as a gender transformative approach and to induce behavior change in animal health management under Health FP. Hence, it was decided to add more training modules following this approach instead of using conventional farmer trainings and to monitor long-term changes with the vision to embed the approach in the Ethiopian extension system.
F3			2019 - 3.8.9 Private Sector is supporting uptake of improved forages in East Africa (2 countries): a) at least 1 seed company by working on improved availability of seeds and b) at least 1 dairy enterprise by supporting uptake of improved forage by their deliverers/milk farmers		
F3			2019 - 3.8.14 At least 1 Innovation/Multi-stakeholder Platform in at least 1 country is functioning on its own		

F4	4.1 Environmental concerns are considered in decision making across at least 10 priority countries and other locations, by national and international development partners, government agencies and extension systems, including technology developers seeking to improve cattle, small ruminant and pig production.		2019 - 4.1.2 Technology developers take environmental issues into account in their research priority setting in three countries.		
F4	4.2 Targeted solutions are used by research and development partners, across at least 10 priority countries and other locations, to increase the productivity of cattle, small ruminants and pigs in the face of ongoing environmental changes.		2019 - 4.2.1 Novel approaches for ex-ante environmental assessment are widely adopted by extension systems, development partners and government agencies in three countries to identify win-win options.		
F4	4.3 Government agencies and development partners at local and national levels across at least 10 priority countries and other locations are promoting environmental management options.		2019 - Five sustainable rangelands interventions in Kenya, Tanzania, Tunisia and Ethiopia are identified, tested and disseminated to livestock producers by the end of 2018.		

F4			2019 - 4.3.2 Quantification of environmental benefits leads to selection and further development of management options by at least one partner in three priority countries		
F4	4.4 Gender responsive environmental management options that are well adapted to Global Environmental Change are adopted by households (women and youth) in 6 countries.		2019 - Tools to enhance gender inclusion in environmental management identified: four tools identified by end of 2018 across five types of sustainable land management projects, based on a global review.		
F4	4.5 National government agencies across at least 5 priority countries design and implement key policies to improve the environmental management of livestock systems		2019 - 4.5.2 National government agencies in three priority countries use flagship outputs to improve land governance arrangements, thereby helping to reduce land degradation.		
F5	5.2 International researchers and agencies use improved livestock system modelling tools and apply them to new problems based on their mandate areas		2019 - Scenarios and modeling approaches agreed upon for integrated macro-meso analyses		

F5	5.3 Policy- or decision-makers in 4 countries use the packages developed and the evidence on the benefits of including gender equity considerations In the development of livestock projects and planning at community and national level (Ethiopia, Kenya, Nicaragua, Vietnam)		2019 - Benchmark publication on gender and livestock to identify frontiers in research and development published by December 2018.		
F5	5.4 Local or national development partners in four priority countries adopt gender-transformative and youth-supportive approaches (using the evidence from the strategic gender research done under the CRP)		2019 - 5.4.3 1 journal article submitted entitled "A retrospective on gender empowerment"		
F5	5.5 Local and national development actors, government agencies, and the private sector invest in and adopt the most successful approaches for enhancing livestock-mediated nutritional impact, including institutional arrangements and behavioural change, in 3 priority countries.		2020 - 5.5.4 Local and national development actors and government agencies adopt tailored options for nutritional impact through livestock development, including cost-effective institutional arrangements and behavioural approaches, within communities in Kenya		

F5	5.6 Livestock communities across 4 priority countries apply tested technologies, management strategies and institutional arrangements, taking the multiple functions of livestock into account		2019 - 5.6.4 Livestock communities across 2 countries (Ethiopia and Kenya) apply tested technologies and management strategies based on CRP related research		In the Ethiopian SR VC pilot sites about 1000 male- and 150 female-headed households apply at least one or more best-bet interventions developed under the umbrella of the Ethiopian SR VCT (IFAD project report; data from monitoring in 2018), the data from benchmarking is still under analysis
F5	5.7 Development partners, private sector and government agencies across 4 priority countries apply innovative institutional arrangements to enhance competitiveness and inclusiveness		2020 - 5.7.3 Development partners, private sector and government agencies in 2 priority countries apply innovative institutional arrangements to raise competitiveness and inclusiveness		

Table 8: Key external partnerships (additional to 2018)

List up to five important partnerships for 2019

Lead FP	**Brief description of partnership aims (30 words)**	**List of key partners in partnership. Do not use acronyms.**	**Main area of partnership (may choose multiple),** Research/Delivery/Policy/Capacity Development/Other, please specify _____
Genetics	Certification of improved sires from community-based breeding programs	National Animal Genetics Improvement Institute (NAGII); MoA to be signed in 2020	Delivery
Genetics	The truly professional applications to support data capture and management which were jointly developed significantly support upscaling of CBBPS	Abacus Bio	Delivery
Health	This partnership is key to implement interventions to transform and strengthen the veterinary service delivery in Ethiopia by facilitating the establishment of novel service delivery models built on public-private partnerships	Ethiopian Veterinary Association	Delivery and Policy
LLAFS	Joint supervision of PhD study *Understanding Agency, Structures (Gender Norms) and their Interaction with Development Outcomes in Livestock-Based Systems in Ethiopia: The case of Livestock (SR) Value Chain Development*	University of New England (NE), Armidale, Australia	Research and Capacity Development

Table 9: Internal Cross-CGIAR Collaborations

Include collaborations with one or more CRPs or Platforms – or with other Centers, if these are not already core partners for your CRP

Brief description of the collaboration	**Name(s) of collaborating CRP(s), Platform(s) or Center(s)**	**Optional: Value added, in a few words** e.g. scientific or efficiency benefits
Genetics: Upscale of community-based breeding programs in climate smart villages in Ethiopia	CCAFS	Additional opportunity for upscaling with a new partner and in a different context
Health: Regular interactions and discussions with researchers working on food safety and zoonotic diseases take place. Some researchers work in both CRPs, Livestock and A4NH, and help to coordinate activities across the two CRPs, and activities relevant for both CRPs are co-funded.	CRP A4NH	Herd health interventions, incl. capacity development efforts, often include elements of food-safety and reduction of zoonotic disease risks, hence ongoing discussion and coordination with respective A4NH activities and research priorities helps to increase impact and offers opportunity for cross-CRP learning.
LLAFS: Studies on impact of market sheds on market participation and earnings and willingness to pay for market facilities in Ethiopia	PIM	Co-funding (knowledge sharing and networking under PIM FP 3 (Inclusive and Efficient Value Chains)

Table 10: Monitoring, Evaluation, Learning and Impact Assessment (MELIA)

Indicate the Status of Evaluations, Impact Assessments etc. conducted in 2019 – contact Nils Teufel for guidance on types/descriptions if necessary

Studies/learning exercises in 2019	Type of study or activity	Description of activity / study	Links to MELIA publications
Impact of community conversation in Ethiopia	Survey, FGD	FGD and household interviews to capture change stories on gender dynamics at household level and animal health management	https://hdl.handle.net/10568/105817

Table 11: Update on Actions Taken in Response to Relevant Evaluations

Name of the evaluation	Recommendation number (from evaluation)	Text of recommendation (can be shortened)	Status of response to this recommendation: Completed/ Ongoing	Concrete actions taken for this recommendation (one row per action)	By whom (per action)	When (per action)	Link to evidence

Table 12: Examples of W1/2 Use in this reporting period (2019)

The objective of this table is to self-report key activities and deliverables that were funded through W1/2 in the past year.

Please give specific examples, one per row (including through set aside strategic research funds or partner funds) Max 50 words/example, but aim for 30	**Broad area of use of W1/2: Research / Delivery / Partnerships / Capacity Development / Other cross-cutting / Policy / Pre-start up / Contingency or Emergency / MELIA / Other (specify)**
Genetics: Planning workshop for the institutionalization of certification process of genetically improved sire	Partnership
Genetics: Purchase of superior rams from CBBPs in old target intervention villages for the new SmaRT pack intervention villages	Delivery
Health: Community conversations were initiated with 2018 SIF and given early successes as a transformative approach, were expanded in 2019 and from 2020 onwards will increasingly be integrated into bilateral projects.	Research / Delivery / Gender / Capacity development
Health: Integrating herd health interventions in Ethiopia in CRP sites have resulted in several important outputs to engage stakeholders in discussions around production disease control and has resulted activities jointly developed with communities	Research / Delivery
F&F: Capacity development related to scaling of sheep fattening with youth groups and champion farmers	Research
F&F: Survey on context specific cultivated forages and utilization options for the SmaRT pack sites in Ethiopia	Research
Environment: Grassland characterization and baseline measurements for grassland monitoring including training of staff and partner researchers	Research

Environment: Refinement of the CLEANED tool for environmental ex-ante impact assessment in the four priority countries	
LLAFS: Scoping study in three sites to develop marketing models	Research
LLAFS/Gender: Identification of positive deviant cases in gender roles in the communities	Research
LLAFS/Gender/Cap Dev: Gender capacity assessment of major partners in three sites (partly in 2019, partly in 2020)	Cap dev
Shared activities: Personnel costs of SmaRT project coordinator	Research/Delivery
Shared activities: Collaborator costs to conduct community meeting in all SmaRT pack villages and employment of M&E enumerators in new villages	Delivery

Part C: 2019 Deliverables

Please insert a table with the agreed deliverables in your PPA/program agreement/priority country project, indicating the status of each: complete (providing evidence link), extended (giving year), or cancelled (giving reason

Deliverable ID	Deliverable Title	Deliverable Description	Responsible Scientist	Flagship	Status	Link if already available	Subtype	Explanation if not achieved
ICARDA PPA 2019								
D16650	Report on institutionalisation of certification of improved rams and bucks	Improved genetics from CBBPs needs to be disseminated to the base population. To achieve this, breeding sires need to be certified that they are of top genetic merit, have sound reproductive performance and are free of reproductive diseases.	Mourad	FP1	Completed and uploaded	https://hdl.handle.net/20.500.11766/10804	Discussion paper/Working paper/White paper	
D16651	Report on dissemination of improved genetics from CBBPs to new villages	CBBPs were established in various villages of Ethiopia and there is evidence for genetic change over years in the traits selected for. Improved genetics from the CBBPs need to be disseminated to the base. We plan to allocate the required numbers of sires to the new communities.	Aynalem	FP1	Completed and uploaded	https://hdl.handle.net/20.500.11766/10793	Discussion paper/Working paper/White paper	

D16653	Report on use of ultrasonography to monitor reproduction in sheep and goats	The use of ultrasonography here is for managing reproduction in sheep and goat to follow females and avoid reproductive wastage resulting from longer dry periods and animals found unfit for reproduction.	Mourad	FP1	to be extended to 2020		Discussion paper/Working paper/White paper	This was expected to be done as part of dissemination of improved genetics. However, given the short time we had we were not able to start this activity.
D16661	Comprehensive feeding and management calendar for Ethiopian value chain sites	Calendar for feeding and management interventions in 3 sites: Bonga, Menz and Doyogena	Jane	FP3	to be extended to 2020		Discussion paper/Working paper/White paper	
D16663	Guidelines on nutritional flushing for breeding ewes & rams	Guidelines on nutritional flushing for breeding ewes & rams in Bonga	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10778	Guidebook/Handbook/Good Practice Note	
D16664	Report on context specific cultivated forages and utilisation options for value chain sites in Ethiopia	Report on context specific cultivated forages and utilization options for 3 sites	Jane	FP3	to be extended to 2020		Discussion paper/Working paper/White paper	
D16666	Training manual on Entrepreneurial Skills Development for sheep fattening in 3 languages	Training manual on Entrepreneurial Skills Development for sheep fattening in 3 languages (English, Amharic, Keffa)	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10766	User manual/Technical Guide	
D16668	Business model for sheep fattening	Business model for fattening sheep of 3 breeds by youth groups	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10805	Business model	
D16680	Report on scoping study for the small ruminant market models in Ethiopia	Study of the capabilities and production/marketing culture of value chain actors, the behavior of buyers of products, the characteristics and behavior of competitors, and potential partners for collective action	Girma	FP5	Completed and uploaded	https://hdl.handle.net/20.500.11766/10817	Discussion paper/Working paper/White paper	

D16683	Report on gender capacity assessement (GCA) of research and development partners at Ethiopia project sites	Assessment of current gender capacities of partners at Bonga, Menz & Abergelle (both Amhara & Tigray) sites	Barbara	FP5	To be extended to 2020		Discussion paper/Working paper/White paper	Field work in 2 sites was completed in December; due to the security situation field work in Bonga was delayed; report will be ready in March 2020
D16686	Community Conversations facilitation guideline in local language for Ethiopia	The facilitation guideline for community conversations adapted and translated into local language	Mamusha/Barbara W	FP5	To be extended to 2020		Guidebook/Handbook/Good Practice Note	Translation would have been premature; the main purpose for 2019 was testing the approach, generating evidence and learning from experience on how the CCs worked and adjust materials if needed.
D16687	Facilitators training report for 1 value chain site in Ethiopia	Report of training local Community Facilitators on the guideline, who will in turn implement the Community Conversations	Mamusha/Barbara W	FP2	Completed and uploaded	https://cgspace.cgiar.org/handle/10568/107025	Research workshop report	
D16646	Implementation calendar for all SmaRT pack interventions	Implementation calendar for all producer-level interventions based on individual intervention calendars from Health, Feed and Genetics	Barbara	FP5	Completed and uploaded	https://hdl.handle.net/20.500.11766/10779	Research workshop report	
D16647	Report of multi-stakeholder platform activities in Ethiopia	Report of multi-stakeholder activities at community level in the Ethiopia project sites	Barbara W	FP2	Completed and uploaded	https://cgspace.cgiar.org/handle/10568/107000	Research workshop report	

D16648	Report on partnership landscaping exercise in Ethiopia	Describes partners and stakeholders identified at national and VC site level whose support is required to achieve expected changes across the ToC pathway; includes an action plan for identified gaps in partnerships	Barbara	FP5	Completed and uploaded	https://hdl.handle.net/20.500.11766/10810	Discussion paper/Working paper/White paper	
D16649	Baseline database for Bonga new target and control village	Data from the baseline survey collected from 75-100 households each in the new target and the control village in Bonga sheep value chain site	Barbara/Girma	FP5	to be extended to 2020		Database/Dataset/Data documentation	we changed the plan for baseline survey; baseline for all new intervention and control villages will be done begin March 2020
D16695	Ethiopia country report 2019	Annual country report for CRP management	Barbara	FP5	Completed		Discussion paper/Working paper/White paper	
Other ICARDA Deliverables in MARLO								
D16688	Report on stakeholder meeting in Ethiopia	Report on stakeholder meeting for planning Ethiopia Country Project	Barbara	FP5	Completed and uploaded	https://hdl.handle.net/20.500.11766/10816	Research workshop report	
D16693	Ethiopia priority country project proposal and budget	Proposal for the CRP Livestock priority country project in Ethiopia	Barbara	FP5	Completed and uploaded	https://hdl.handle.net/20.500.11766/10781	Concept note	
Deliverables of ILRI and CIAT								
D16657	Treatment calendar for livestock health interventions in Ethiopia	A calendar that clearly outlintes timing of the different interventions at community level	Barbara W/Mesfin	FP2	Completed and uploaded	https://hdl.handle.net/10568/107144	Discussion paper/Working paper/White paper	

D16658	Training of trainer module for community conversations	Detailed educational material to train extension agents and local veterinarians in applying community converstaion as a gender-transformative approach	Barbara W/Mesfin/Mamusha	FP2	Completed and uploaded	https://hdl.handle.net/10568/107025	Lecture/Training Course Material	
D16660	Project report on all health interventions in Ethiopia	Project report on all health interventions focusing on uptake and impact	Barbara W/Mesfin	FP2	Completed, under internal review	to follow	Discussion paper/Working paper/White paper	
D16670	Report on the refinement of the CLEANED tool and implementation plans in Ethiopia	The CLEANED excel and R tools will be streamlined into one tool. This will be ready only in 2020, but development will start in 2019. In addition, the CLEANED team will familiarise itself with the main environmental issues at the sites, to develop a detailed implementation plan for 2020/2021	An	FP4	Completed and uploaded	https://cgspace.cgiar.org/handle/10568/107020	Discussion paper/Working paper/White paper	
D16676	Grassland management characterisation manual for Ethiopian highlands	Methodology for assessment of highland grassland community characteristics and priorities in Ethiopia	Jason	FP4	To be extended to 2020		User manual/Technical Guide	Given the delay on funds release, the team has been in the field nearly full-time. Hence, report writing has been negatively affected.
D16677	Grassland baseline dataset for Ethiopia	Baseline data from 6 grasslands in 2 sites in Ethiopia	Jason	FP4	Completed and uploaded	Available for download from: http://portal.landpotential.org/#/landpksmap	Database/Dataset/Data documentation	
D16679	Grassland baseline report for Ethiopia	Baseline data from 6 grasslands in 2 sites, summarized in a report	Jason	FP4	To be extended to 2020		Discussion paper/Working	

							paper/White paper	
D16669	Grassland management characterization report	Report on grassland uses, rights, managers, legal status, decision-making	Jason	FP4	To be extended to 2020		Discussion paper/Working paper/White paper	

Additional deliverables ICARDA

New	Bridging the Gap between Strategy and Delivery of Improved Sheep Fattening in Ethiopia	Scaling out improved sheep fattening practices	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10759	Blog	
New	Youth Groups breaking gender barriers in market-oriented sheep fattening in Ethiopia	Scaling out improved sheep fattening practices	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10758	Blog	
New	Young women in sheep fattening youth groups: What do they want?	Scaling out improved sheep fattening practices	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10768	Blog	
New	Scaling up Improved Sheep Fattening Practices and Technologies in Ethiopian Highlands: A photo story	Scaling out improved sheep fattening practices	Jane	FP3	Completed and uploaded	https://hdl.handle.net/20.500.11766/10777	Blog	

List of ISI publications related to Ethiopia country program

Genetics

1. Tufa, S.S., Sölkner, J., Mészáros,G., Haile, A., Mwacharo, J., Khayatzadeh, N., Wurzinger, M. 2019. Indigenous knowledge, practices and preferences in control of gastrointestinal nematodes in Bonga and Horro sheep of Ethiopia, Small Ruminant Research 175 (2019) 110–116.
2. Haile, A., Gizaw, S., Getachew, T., Mueller, J.P., Amer, P., Rekik, M. Rischkowsky., B. 2019. Community-based breeding programmes are a viable solution for Ethiopian small ruminant genetic improvement but require public and private investments. J Anim Breed Genet.:1-10. https://doi.org/10.1111/jbg.12401
3. Jembere, T., Rischkowsky, B., Dessie, T., Kebede, K., Okeyo, M.A., Mirkena, T., Haile, A. 2019. Genetic and economic evaluation of alternative breeding scenarios for community-based productivity improvements of three indigenous goat breeds in Ethiopia. Small Ruminant Research, 178: 46-54
4. Mueller J.P., Haile, A., Getachew, T., Rekik, M., Rischkowsky, B. 2019. Genetic progress and economic benefit of community-based breeding programs for sheep out- and upscaling options in Ethiopia. Small Ruminant Research 177: 124-132.
5. Gebretensay, A., Alemayehu, G., Rekik, M., Alemu, B., Haile, A., Rischkowsky, B., Aklilu, F., Wieland, B., 2019. Risk factors for reproductive disorders and major infectious causes of abortion in sheep in the highlands of Ethiopia, Small Ruminant Research, 177: 1-9

Health

ILRI-led

1. Alemu, B., Desta, H., Kinati, W., Mulema, A.A., Gizaw, S. and Wieland, B. 2019. Application of mixed methods to identify small ruminant disease priorities in Ethiopia. Frontiers in Veterinary Science., https://doi.org/10.3389/fvets.2019.00417, https://hdl.handle.net/10568/105885

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1. Wamatu, J., Alkhtib, A., Rischkowsky, B. (2019). Simple and robust model to estimate live weight of Ethiopian Menz sheep. Animal Production Science. ISSN 1836-0939. https://hdl.handle.net/20.500.11766/9687

LLAFS

1. Girma Kassie, Rahel Wubie, Simla Tokgoz, Fahd Majeed, Mulugeta Yitayih Birhanu, Barbara Rischkowsky. 2019. Policy-induced price distortions along the small ruminant value chains in Ethiopia. Journal of Agribusiness in Developing and Emerging Economies, 9(3), pp. 220-236. (jointly with CRP PIM), https://doi.org/10.1108/JADEE-02-2018-0024, https://hdl.handle.net/20.500.11766/10077
2. Kinati, W., Mulema, A. 2019.Gender issues in livestock production systems in Ethiopia: A literature review. J. Livestock Sci. 10: 66-80. https://doi.org/10.33259/JLivestSci.2019.66-80, https://hdl.handle.net/20.500.11766/10782