



BENEFIT Partnership – 2018 Annual Report

Bilateral Ethiopian-Netherlands Effort for Food, Income and Trade Partnership

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1 PCU

2 ISSD Ethiopia

3 CASCAPE

4 ENTAG

5 SBN

6 REALISE

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Executive Summary

1. Introduction

The bilateral project entitled "Bilateral Ethiopian Netherlands Effort for Food, Income and Trade Partnership (BENEFIT Partnership) supported by the Dutch Government through the Embassy of the Kingdom of the Netherlands has, since 2016, been implementing four agricultural development programmes (ISSD – Integrated Seed Sector Development, CASCAPE - Capacity building for Scaling up of evidence based Practices in agricultural production in Ethiopia, ENTAG - Ethiopia-Netherlands Trade for Agricultural Growth and SBN – Sesame Business network). In 2018 a fifth programme, REALISE - Realising Sustainable Agricultural Livelihood Security in Ethiopia, joined the BENEFIT partnership in 2018. The Partnership aims at increasing food and nutrition security, brokering Dutch expertise, and stimulating trade. The focus of the 2018 activities have been (i) further demonstration of evidences for the agricultural transformation agenda and enhancing the engagement to effectively communicate the evidences for development and policy; (ii) alignment with relevant initiatives including the Agricultural Transformation Agency, the Agricultural Growth Programme, and the Productive Safety Net Programme and other public programmes for synergy; (iii) creating evidences from by scaling of product & place and thematic collaborative activities; and (iv) strengthening of the mainstreaming of crosscutting issues mainly gender and nutrition in all BENEFIT programmes. In addition, the programme was reviewed for its mid-term achievements by external consultants.

The activities have been carried out together with regional partners (Universities – Addis Ababa, Bahir Dar, Haramaya, Hawassa, Jimma, and Mekelle, Regional Agricultural Research Institutes in Amhara, Oromia, Southern Nations Nationalities and Peoples Region and Tigray, and the Oromia Seed Enterprise). With the launch of the REALISE programme, the list of regional partners has increased by including Arba Minch, Arsi, Oda Bultum and Woldia Universities.

The 2018 annual report presents the major achievements under each of the BENEFIT outcome indicators followed by the major challenges, opportunities and key lessons learnt and the way forward.

2. Major achievements in 2018

The major achievements of the BENEFIT partnership are summarized based on the result chain outputs (Figure 1), which are related with (i) enhancing portfolio collaboration among BENEFIT programmes, (ii) increasing quality and quantity of agricultural production, (iii) improving markets and trade, (iv) improving the enabling environment for the agricultural sector, and (v) enhancing partnership for synergy.



Figure 1 Key partnership indicators: 2018, 2017 and 2016 achievements

2.1 Collaborative BENEFIT Portfolio

The 2018 overall performance in collaborative activities shows considerable improvement compared to the previous years' implementation. This is linked with the increased engagement and linkages in the areas of technology validation and scaling, creation of market linkages, joint result based planning, monitoring and evaluation, and policy engagement for the prioritized commodities. This improvement is associated with (i) regional planning being more result based, (ii) the improved activity management esp. in terms of assignment of individual responsibilities for the different activities, and (iii) improved engagement of BENEFIT management.

The main achievements/progresses made in empowering the five BENEFIT priority value chains are:

Soya Bean value chain development: executed in Jimma and Wollega areas with a focus on (i) scaling and pilot scaling of soya bean innovation, (ii) mapping of key stakeholders and organizing of soya bean platform, (iii) capacity building on techniques of quality seed production and market orientation, (iv) facilitating collaboration with other stakeholders, and (v) undertaking gender analysis with specific to soya bean. This has resulted in (i) market linkage of seven primary cooperatives with nine companies with trade volume of 9,300MT, (ii) reach of 3,372 farmers through pilot scaling with average productivity increase of about 47% compared to the national average.

Sesame value chain development and integration of rotational crops: this collaborative activity was implemented in Amhara and Tigray regions. The main activities were related with (i) sesame

participatory variety selection and crowd sourcing to improve variety portfolio, (ii) gender and nutrition gap analysis on sesame, build the capacity of women through training, field day and experience sharing, (iii) promotion of rotational crops, (iv) promotion of farmers' financial literacy, and (v) enhancing farmers' capacity in cooperative management. As a result, there was an increased variety portfolio of sesame; improved quality seed production and post-harvest handling; improved soil fertility management due to crop rotation and improved nutrition linked with the supply of pulses as rotational crops; improved financial literacy at household level; and enhanced farmers' capacity to cooperative management.

Potato value chain: this was implemented in Amhara region. The main activities were related with (i) the supply of disease free quality seed through demonstration of screen houses and associated facilities, (ii) promotion of use of disease free potato tubers, (iii) introduction of newly released varieties, (iv) capacity building of development agents, subject matter specialists and farmers, (v) linking the potato producers with market, (vi) establishing potato platform to ensure relevant stakeholders' linkage, and (vi) mainstreaming of gender and nutrition activities. These efforts have resulted in improved availability of disease free potato mini tuber seed, created demand among farmers for disease free mini tubers of improved potato varieties, and build local capacity in production of disease free mini tubers (farmers, development agents, subject matter specialists) along with improved linkage among relevant stakeholders mainly Amhara Regional Agricultural Research Institutes and seed producer cooperatives.

Malt barley: this was implemented in Amhara, Southern Nations Nationalities and Peoples Region and Tigray with the aim of deploying improved varieties and creation of grain market linkage. As a result, new varieties were demonstrated, seed production by local seed producer cooperatives promoted, volume of grain malt barley produced increased, and better market access created in the three regions. To institutionalize the approach followed, malt barley stakeholders' platforms were established in each region.

Sorghum value chain: with the main objective enhancing sorghum value chain in Tigray region striga tolerant sorghum varieties were demonstrated along with establishment of seed producer cooperatives to ensure sustainable supply of seed of preferred striga resistant varieties.

2.2 Quality and quantity of sustainable agricultural production

A range of diverse activities were implemented to ensure improved quality and quantity of agricultural production in a sustainable manner mainly related with testing and validation of available technologies and practices, enhancing availability of validated and preferred technologies mainly seeds of improved crop varieties, development of extension materials & manuals, capacity building directly to beneficiaries, experts of partner organizations mainly development agents, subject matter specialists, researchers, and farmers' organizations mainly seed producer cooperatives and farmers' cooperatives. Through these efforts the following achievements were recorded in 2018:

- A total of 1,813,946 smallholder farmers (both directly and indirectly) were reached in 2018. Of these 28% were women and 29% youth (<35 years of age);
- With coverage of a total of 280 varieties of 17 crops, 149 seed producer cooperatives, 21 small and medium domestic private seed companies, four public seed enterprises and Dutch seed companies were supported to produce and avail quality seeds;
- A total of 56,982 people were trained, 40% women and 27% youth mainly through a training of trainers' approach. About 16 best-fit practice manuals and a number of training manuals were prepared to support the capacity development activities;
- At national level, 13 platform meetings were organized that initiated discussion on pertinent challenges and opportunities in relation to improving quality and quantity of agriculture sustainability. Regional platforms were initiated for a variety of crops such as sesame, malt barley.

Letebirhan lives in the central part of Tigray, she is a widow and she has five children. She voluntarily participated in the ISSD programme, took training about agronomic practices (land preparation, row planting and fertilizer application) and received seed of three varieties of wheat to test on her small plot of land and choose the variety she preferred. She harvested 80 kilos from this variety. Letebirhan said: *“my life was entirely depend on productive safety net programme but now I aspire to provide seed to the seed cooperative found around my resident to earn income.”*



2.3 Improved markets and trade

- In effort to empower the seed value chains, different market linkage creation was facilitated. Accordingly, 68 seed producer cooperatives were linked to relevant early generation seed suppliers, to 26 service providers mainly seed inspection service providers, and to 50 certified seed buyers;
- To strengthen the backward and forward market linkage, trade and investment integration among local and foreign agribusiness companies, we (i) facilitated market linkage between five Ethiopian exporters and foreign companies in Russia, Switzerland, Bangladesh, India and Israel, which resulted in export volume (1967 MT) and value (\$1.89 million) of different products (spices and legume), (ii) organized 4 trade missions in poultry, spices, legumes and aquaculture to the Netherlands, India, Vietnam and Egypt and facilitated organization of the Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association annual conference, which facilitated the established business contacts with more than 133 foreign companies, and (iii) supported more than 140 private companies on access to improved markets and trade through its front desk, hands on advisory services and provision of graduate interns;
- In effort to strengthen the development of sesame products and markets, we have (i) facilitated together with Agriterra access to marketing credit to Setit, Metema and Dansha unions through the guarantee fund (10.3 million ETB) from three banks (CBO, Abay and Lion) a value of 30.5 million ETB. This assisted 22 cooperatives to buy more sesame from their members and to stay longer in the spot market, and (ii) provided loan management training and frequent monitoring, which improved financial management skills and resource mobilization capacity of unions and cooperatives, high loan repayment rate, increased membership and share sales, improved savings and a better relationship between unions and cooperatives.

Financing the agricultural sector and sesame specifically is feasible. Farmer organizations and farmers are very happy with alternatives to informal financial resources, showing a high commitment to repay.

Desalegn Legesse, Setit Union Manager: *“The guarantee fund intervention builds marketing linkage and enhances members’ economic participation and profitability of both the union and cooperatives.”*

Desalegn Legesse, Setit Union Manager



2.4 Improved enabling environment

Within the overall framework of agricultural sector development, different interventions for improving the enabling environment have been done by the BENEFIT partnership. The main approaches followed in this regard were (i) identification of key policy issues for further discussions based on prevailing challenges and opportunities, (ii) proper documentation of demonstrated evidences for the identified priority issues, (iii) engagement with relevant stakeholders to ensure the communication of demonstrated evidences through different forums mainly workshops, and (iii) contributing/facilitating in the design of new directives and regulation. Accordingly, the following major achievements can be reported:

In the area of seed sector, the institutionalization of high level seed related policy advise mechanism both at national and regional level was facilitated; the development of overarching national seed sector transformation agenda with the participation of a number of actors, the establishment of the regulatory authority of Oromia regional state, the establishment of contract based early generation seed production and supply system, and preparation of different seed related directives including directive on disposal of non-viable seeds and certificate of competence for seed producers' cooperatives and directive on seed marketing;



During a workshop on the development of a national seed sector transformation agenda, MoA State Minister H.E. Sani Reddi noted that *“with the recent change within the Ministry, this is an ideal time to propose a new way of doing things to bring transformational change”*. He proposed that *“ISSD should continue to lead the facilitation process.”*

Based evidences on the need to institutionalize the linkage among different actors in the research-development continue, a high level policy discussion among stakeholders from research institutes, universities and the extension system was facilitated and a forum was established to sustain the linkage. Similarly, a forum was organized to communicate the main policy and development aspects of promotion of soil fertility and blend fertilizer recommendations to relevant policy makers and practitioners.

Improving the enabling environment for sesame sector development was implemented through (i) facilitation of evidence-based information gathering and sharing, (ii) relevant stakeholders' capacity development activities, (iii) enhancing the stakeholders' interaction and collaboration, and (iv) strategic sesame sector innovation.

In its effort to facilitate the active participation of private actors for respective sectors, three private sector associations (poultry, aquaculture and spices) were supported and one council (pulses). The support targeted the development of strategic plans along with provision of technical support for proper functioning of the associations in addressing emerging issues with relevant stakeholders (policy makers and practitioners).

The main streaming of policy engagement by BENEFIT has been promoted not only through the programme specific events but also direct engagement with the Ministry of Agriculture through regular meetings and case based engagements.

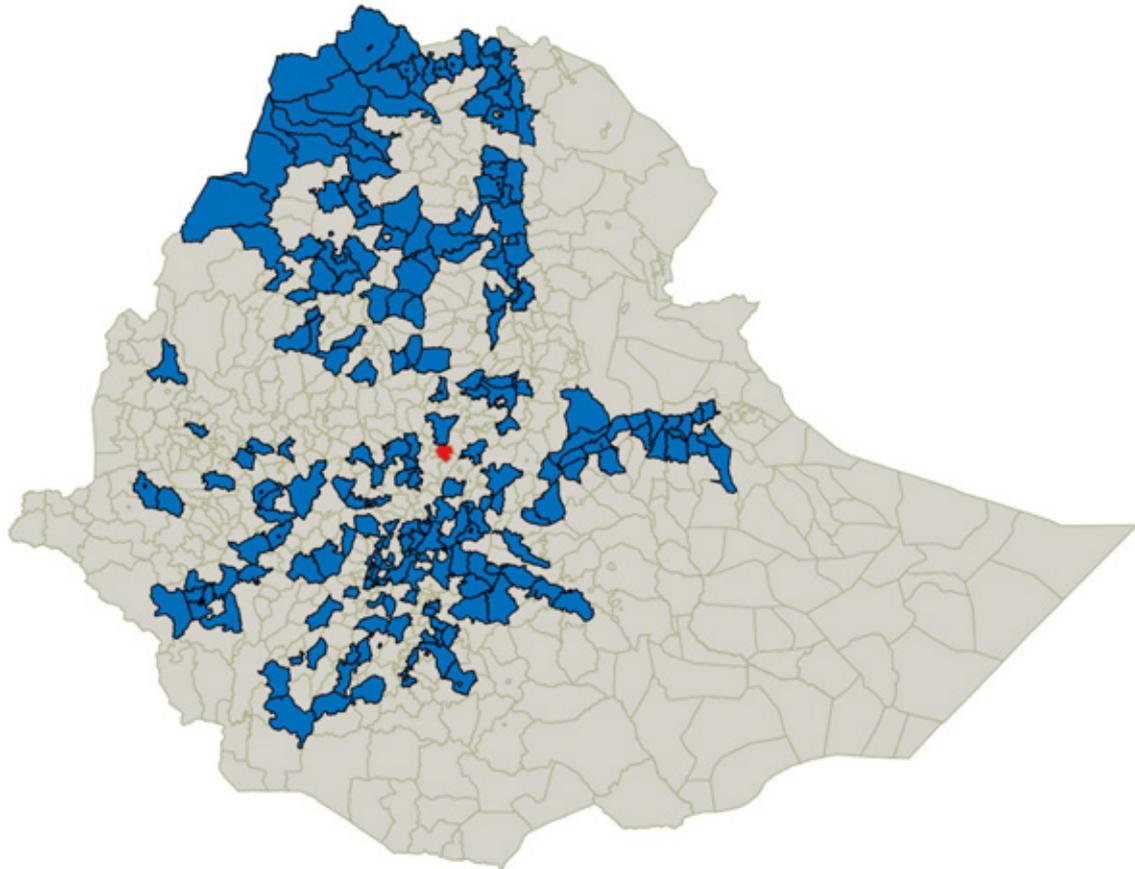


Figure 2 Overview map implementation woredas of all BENEFIT programme

2.5 Partnership and collaboration

The BENEFIT Partnership coordination unit has been responsible for coordination of the partnership and collaboration for synergy among BENEFIT programmes mainly through facilitation of (i) alignment of programmes and their collaboration, (ii) collaboration and alignment with other projects and programmes, (iii) mainstreaming social inclusion and nutrition, and (v) fostering collaboration in BENEFIT portfolio.

Facilitation effective collaboration and leaning among BENEFIT programmes: maintaining their focus and independence, the collaboration for synergy among the different programmes under the BENEFIT partnership was facilitated using different approaches mainly related with management meetings (advisory board, managers and coordinators meetings, BENEFIT portfolio meetings) and facilitation of proper planning of collaborative activities along with proper follow up for learning. 2018 was a year when a new REALISE programme joined the BENEFIT Partnership, which required adequate engagement to ensure effective collaboration with the other four programmes.

Facilitation of engagement with other initiatives: the engagement of BENEFIT programmes with relevant public and private initiatives to ensure effective alignment and synergy was facilitated. Accordingly, the following activities have been progressing well: (i) joint engagement with the seed sector development of the Ministry of Agriculture together with the Agricultural Transformation Agency as members of the National Seed Advisory group, (ii) as members of the Agricultural Growth Programme Technical committee, ensuring alignment and sharing of experiences of the BENEFIT partnership, (iii) initiation of collaboration at regional level with the initiative on agricultural commercialization clusters coordinated by the Agricultural Transformation Agency.

Mainstreaming social inclusion & nutrition: The mainstreaming in 2018 mainly focused on gender and nutrition capacity building activities both for the implementing partners and beneficiaries.

Specifically, the main achievements with related with (i) provision of technical support in gender and nutrition in provision of training, (ii) facilitation and follow-up of gender and nutrition regional working groups, (iii) documentation of evidences in gender and nutrition mainstreaming for scaling, and (iv) facilitation of national level networking of BENEFIT related to gender and nutrition.

In 2018, a Worldbank funded project, CANAG - CASCAPE Nutrition and Gender Component, was included in the BENEFIT Partnership specifically to strengthen the gender and nutrition activities in CASCAPE.

Fostering collaboration in BENEFIT portfolio

Collaboration among BENEFIT portfolio programmes has been fostered through: (i) BENEFIT portfolio management; (ii) provision of centralized administrative services (finance, human resource management, and logistics.), and (iii) communication and use of evidence-based information through an effective M&E system linking the four BENEFIT programmes.

- **Mid-term review:** this was conducted by external consultants, this clearly identified both strong and weak side of the BENEFIT portfolio. Following the mid-term review feedback and thorough discussion at BENEFIT level, priority issues were identified for consideration in the 2019 planning processes. The key priority issues were (i) the need to focus on institutionalization and embedding of the demonstrated evidences to ensure the sustainability of the outcomes achieved, (ii) further strengthen the collaboration with other initiatives to ensure scaling, and (iii) engage with EKN in elaborating the misleading argument that BENEFIT partnership arrangement has increased the overall overhead costs in project implementation.
- **BENEFIT Portfolio management:** While maintaining their focus and independence, the BENEFIT portfolio management was facilitated using approaches related with (i) management meetings of managers and coordinators, (ii) facilitation of the development of collaborative activity plans; (iii) communication with external stakeholders and advisory board; (iv) regular reporting; (v) information sharing about BENEFIT.
- **Provision of centralized administrative services:** One of the key sources of synergy for collaboration within the BENEFIT Partnership was having a centralized finance and administration system. Accordingly, appropriate support functions related with (i) financial management, (i) human resource management, (iii) procurement, and (iv) pooled resource use.
- **Monitoring and Evaluation:** this was implemented though facilitation of (i) BENEFIT monitoring and evaluation framework implementation linked with technical backstopping in application of selected tools and methods (most significant change harvesting, indicator tracking tables, and documentation of stories of change) and ensuring regular reporting (Bi-annual and annual); and (ii) collaborative activity monitoring through facilitation of annual planning, joint monitoring, and documentation of lessons learnt.
- **Communication:** the 2018 achievements are related with the facilitation of internal and external communications towards promoting BENEFIT partnership and its programmes activities; knowledge sharing and information for effective management. In terms of external communication, the achievements focused on regular updating of BENEFIT website, development of BENEFIT-REALISE website, and producing publications to make information available to relevant stakeholders and the general public.

3. Major challenges, opportunities, lessons learned and way forward

Challenges

In 2018, there were challenges that were common to all BENEFIT programmes and also specific to each of the programme that affected the implementation of planned activities. The most important challenges:

- **The fragile peace and security situation that prevailed in the country:** this has affected the extent of follow up of implemented activities, organization of planned capacity building activities esp. for the direct beneficiaries, and also engagement at higher level;

- **Prevailing climate change challenges:** these were reflected in the form of pest and disease incidence and unpredictable weather condition (drought, floods, frost) esp. for implemented activities related with testing and validation;
- **The frequent staff turnover including higher officials at all levels** (federal, regional, zonal and woreda levels): this has limited the timely implementation of planned activities esp. those related with policy engagements;
- **The prevailing limitation of capacity/understanding of partners and beneficiaries to perform as expected:** these were related to, for instance (i) failure to understand EGS production & supply operation problems by the actors and hence try to take actions focusing on treating the symptoms not to cure the core problem, this has resulted in shortage of quality early generation seed especially for pulses and oil crops, (ii) managerial and marketing skill gaps of SPCs and PSPs, which has limited investment in seed business innovations; (iii) the limited supply compared to entered contracts by farmers and commercial farms through cooperatives and unions to agro-industries (FAFFA food share company, Alema Koudijs feed);
- **Huge mismatch between domestic and international prices of agricultural commodities that are exported:** this has reduced the possibility facilitation of market linkages in a sustainable manner. The inflated domestic market price is as the result of the fierce competition of exporters to earn foreign currency;
- **Weak linkage with the national research systems and technology suppliers:** this has limited accessing required technologies for testing and validation. For instance, the planned collaboration on faba bean value chain development was not fully implemented due to the shortage of the early generation seed of demanded varieties from research, the plans of validating the target labour saving technologies were not implemented due to the challenge to access the suggested labour saving technologies from the research; the adoption of row planting for sesame was hindered due to the lack of supplier for row planters etc;
- **Challenges to ensure the participation of relevant policy makers in different events:** the attendance of relevant higher level policy makers to different events (workshops, seminars, field days, stakeholders' platforms etc) was limited as they often delegate experts with limited power to make policy decisions. Most of the platforms organized to deliberate on the challenges of respective sectors (seed, aquaculture, species, pulses, poultry) managed to engage all relevant stakeholders but there was limitation in the participation of high level policy makers who can facilitate to address policy related issues;
- **Challenges related with collaboration for synergy within BENEFIT:** Though there is considerable improvement in the extent of collaboration, the overall joint engagement is still low compared to the program specific activities. The extent of monitoring of collaborative activities in the regions, while equal attention should have been given by respective programmes;
- **The moderate adoption of demonstrated evidences of BENEFIT Partnership:** Though the different BENEFIT partnership programmes have demonstrated different evidences (good agricultural practices, validated technologies, financial literacy, policy options etc), some of these evidences require further engagement with relevant stakeholders to ensure their full adoption and sustainable utilization.

Opportunities

The main opportunities that prevailed in 2018 were related with (i) increased interest of existing and emerging new initiatives to collaborate, (ii) the increased commitment of the government for engagement based on evidences, (iii) the increased visibility and recognition to the BENEFIT Partnership programme by stakeholders including policy makers, and (iv) the gradual openness and the increased interest of Dutch private sector to invest in Ethiopia.

- **Increased interest of existing and emerging new initiatives to collaborate:** there is increased interested to adapt BENEFIT demonstrated evidences in some of the initiatives like the agricultural commercialization clusters and integrated agro-industrial parks. Similarly, there is high interest of other initiatives to collaborating in scaling BENEFIT demonstrated evidence like the Agricultural Transformation Agency, the Agricultural Growth Programme, and the Productive Safety Net Programme. This is a very good opportunity for synergy in scaling;
- **Increased commitment of the government for engagement based on evidences:** The Ministry of Agriculture and other public organs are showing increased attention in ensuring the transformation of the different sectors including seed, extension approach, functioning of

stakeholders' platforms etc. In this regard, the BENEFIT partnership programme has become active participant and some cases play lead role in the process. For instance, the design of the national seed sector transformation agenda was led by ISSD;

- **Increased visibility and recognition to BENEFIT Partnership:** This has facilitated continuous engagement with relevant stakeholders including policy makers, which is important for better influence and wider impact of the BENEFIT partnership efforts. Senior staff of BENEFIT partnership are invited to be different engagements and taskforces. For instance, three of the BENEFIT Partnership staff are members of the National Seed Advisory Council;
- **The gradual openness and the increased interest of Dutch private sector to invest in Ethiopia:** this has helped (will help) in facilitating business linkages of domestic actors with Dutch private actors, which is expected to enhance private investment. For instance, the approval of plant variety protection law is expected to serve as grantee for international seed companies to invest in Ethiopia and also may encourage domestic private sector development through business relations;
- **The embedding of senior experts:** in the Ministry of Agriculture for issues related to seed (ISSD), extension (CASCAPE) and sesame (SBN) greatly assists uptake of validated evidences and policy influencing.

Key lessons learnt and the way forward

The general key lessons learnt and the way forward for BENEFIT and its programmes were:

- Working with relevant partners enhances the smooth implementation of planned activities and achievement for adequate impact. Thus, further engagement of relevant stakeholders and partners will be given due attention;
- Stakeholders' platform meetings are crucial for availing and maintaining sustainable information exchange among actors of the different subsectors and also to address emerging both policy and development issues. Accordingly, mechanisms for sustainability of the functioning of established platforms will be given due attention in 2019 planning;
- All rounded capacity development for smallholder farmers is very crucial including finance management. Due focus will be given to strengthen the capacity of smallholder farmers in financial management through institutionalized financial literacy training;
- Documentation of demonstrated evidences as a tool for proper engagement with policy makers and development practitioners is very crucial. Accordingly, due attention will be given to document properly the demonstrated evidences of BENEFIT programmes for engagement.

1 Introduction

The 2018 BENEFIT annual report presents the third year of implementation of the BENEFIT Portfolio, which unites five programmes namely ISSD, CASCAPE, ENTAG and SBN and REALISE, and the umbrella unit PCU.

The implementation of the planned activities during 2018 was accompanied with dramatic political and economic reforms along with institutional changes linked with the new government. This has created a number of opportunities specifically in communicating and directly engaging to ensure embedding the diversity of demonstrated evidences by the different BENEFIT programmes. Regular engagement with Ministry of Agriculture (MoA) through the monthly meetings with the (state) minister has continued. In recognition to BENEFIT staff expertise and demonstrated evidences at ground level, the BENEFIT portfolio was invited by the MoA and the Ethiopian Institute for Agricultural Research (EIAR) to participate in policy dialogues and events related with seed sector transformation, agricultural import substitution, and agricultural value chain development for effective Integrated Agro-Industrial Parks (IAIPs), to mention some.

The mid-term review (MTR) was conducted by external consultants, this clearly identified both strong and weak side of the BENEFIT portfolio. Following the MTR feedback and thorough discussion at BENEFIT level, priority issues were identified for consideration in the 2019 planning processes. The key priority issues were (i) the need to focus on institutionalization and embedding of the demonstrated evidences to ensure the sustainability of the outcomes achieved, (ii) further strengthen the collaboration with other initiatives to ensure scaling, and (iii) engage with EKN in elaborating the misleading argument that BENEFIT partnership arrangement has increased the overall overhead costs in project implementation.

In the area of promoting internal project management, 2018 was a year where there was a continued effort in providing standardized, transparent, and smooth financial and administrative services to the different BENEFIT programmes in centralized manner as per the set BENEFIT policies, guidelines and strategies along with timely reporting the progress made to the Ministry of Agriculture and Ministry of Finance and Economic Cooperation.

This annual report is structured based on the result chain and considers the achievements made, challenges faced and lessons learned by the five BENEFIT Partnership programmes and the PCU. Accordingly, the report covers achievements in the areas of (i) BENEFIT portfolio collaboration, (ii) increasing quality and quantity of sustainable agricultural production, (iii) enhancing market dynamics, (iv) improving enabling environment, and (v) enhancing partnership for synergy. Selected stories of success demonstrated by the different programmes and the detailed annual reports of the respective programmes are annexed to the report.

2 Collaborative BENEFIT portfolio

In addition to thematic collaboration, one of the approaches of the BENEFIT partnership are the product and place combinations. The product-place strategy aims at implementing diverse activities for a specific commodity in a specific target area by engaging BENEFIT programmes based on their respective areas of expertise and consideration of the whole value chain of a commodity. This strategy helps the partnership to achieve results and demonstrate evidences in an integrated and synergetic manner to farmers, practitioners and policy makers.

In 2018, there were nine product-place combination interventions in Amhara, Tigray, Oromia and Southern Nations Nationalities and Peoples Region (SNNPR) covering five priority crops. The priority crops which the BENEFIT partnership targeted with due emphasis in addressing challenges related with seed system, productivity, market and policy were sesame, malt barley and potato in Amhara region; sesame, malt barley and sorghum in Tigray region; soya bean and chickpea in Oromia and malt barley in SNNPR. Although faba bean was also one of the commodities, the plan to strengthen the seed system was suspended due to limited interest of farmers as the proposed faba bean variety (Gebelicho) is not preferred above the locally grown variety Turbo. Given the mandate of the South Agricultural Research Institute (SARI) in verifying Turbo variety to the local conditions, working on faba bean was suspended until this study would be completed and results handed over to the extension system.

The 2018 overall performance in collaborative activities showed considerable improvement compared to the previous years' implementation. This was achieved through (i) result based regional planning, (ii) the improved activity management esp. in terms of assignment of individual responsibilities for the different activities, and (iii) increased engagement of BENEFIT management.

2.1 Sesame: value chain development and integration of rotational crops

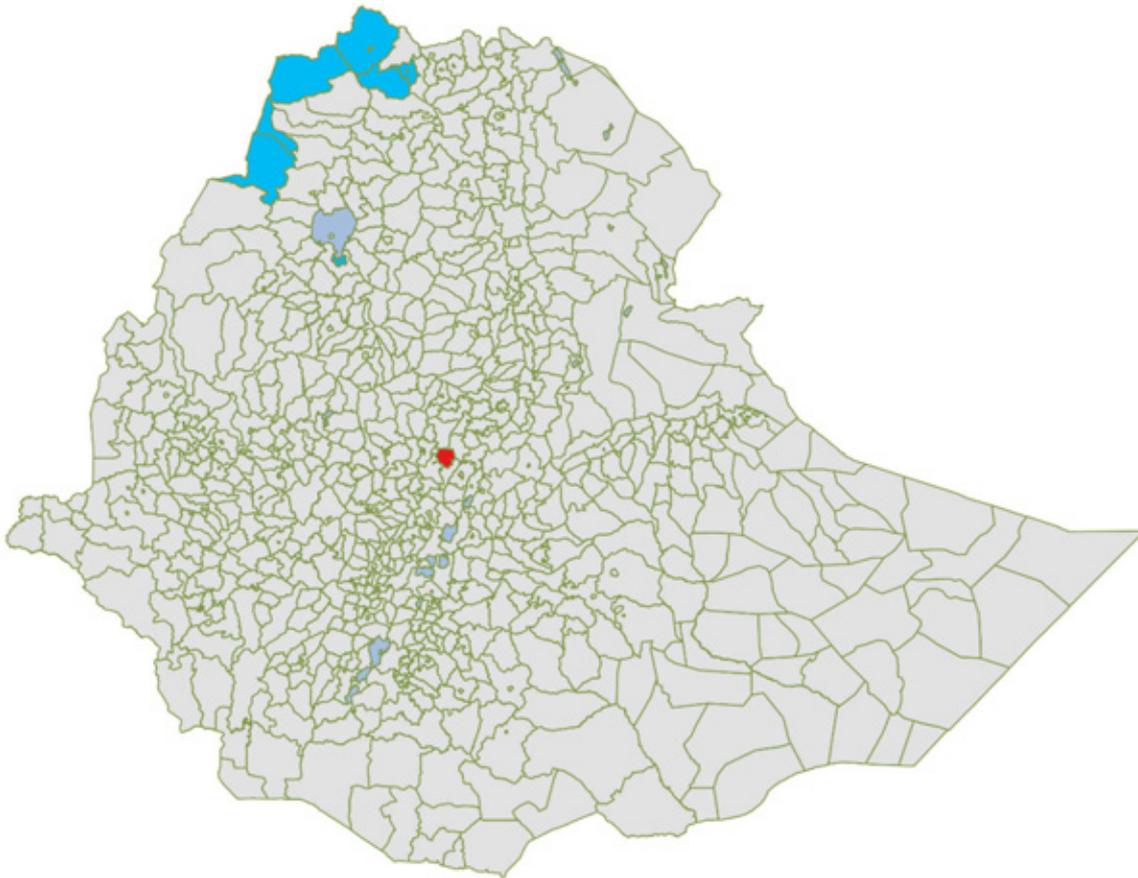


Figure 3 Target areas of BENEFIT collaboration to empower sesame value chains

Tigray

The collaboration in Tigray aims to improve the quality of sesame production and marketing through accessibility of improved seed, mechanization and alignment of different activities. To meet this objective SBN, CASCAPE and ISSD in collaboration with individual farmers, WoARD, zone and HuARC have implemented different activities.

In 2016 and 2017, participatory varietal selection (PVS) was performed for sesame in Kafta Humera woreda to enhance access to improved sesame seed. Of the tested sesame varieties, the farmers picked the Setit-2 variety based on their own criteria. In 2018, the selected variety was distributed to farmers in Bereket and Maikadra kebeles so as to enhance the production and productivity of sesame in the areas. Moreover to strengthen the capacity of stakeholders, a Training of Trainers (ToT) on the 20 Steps approach, seed production of rotation crops, Integrated Soil Fertility Management (ISFM), Integrated Pest Management (IPM), storage management and marketing, gender mainstreaming in agriculture, seed value chain and QUAntitative Evaluation of the Fertility of Tropical Soils (QUEFTs) model training was given to 32 (two females) researchers from two centres, five woreda Subject Matter Specialists (SMS) and project staff. With regard to mechanization, one Seed Producer Cooperative (SPC) obtained row planting service from HuARC/SBN. A gender and nutrition analysis was also conducted, this will be used for future interventions.

Amhara

In Amhara region the objective of collaboration was to improve productivity and market linkages for sesame. This collaboration had four components and the major achievements under each component were: i) access to seed - training and conducting PVS and providing training on quality seed

production, organization management and seed marketing to Local Seed Businesses (LSBs) were some of the major activities, ii) market linkages and value addition: this was linked to successful organization of trade mission to India for representatives from 2 unions and 11 private companies. This collaboration started to yield results as a participant signed contract to export red kidney beans and 36MT of red kidney beans was exported to India in 2018, iii) Soil fertility improvement related activities were not implemented due to the challenge related with procurement of the required services, iv) Lastly, a gender gap and nutrition study was conducted to inform the next year plan. In addition to mainstreaming of gender in crowd sourcing (CS) and PVS activities resulted in participation of 32% women.

2.2 Malt barley: deploying improved varieties and grain market linkage

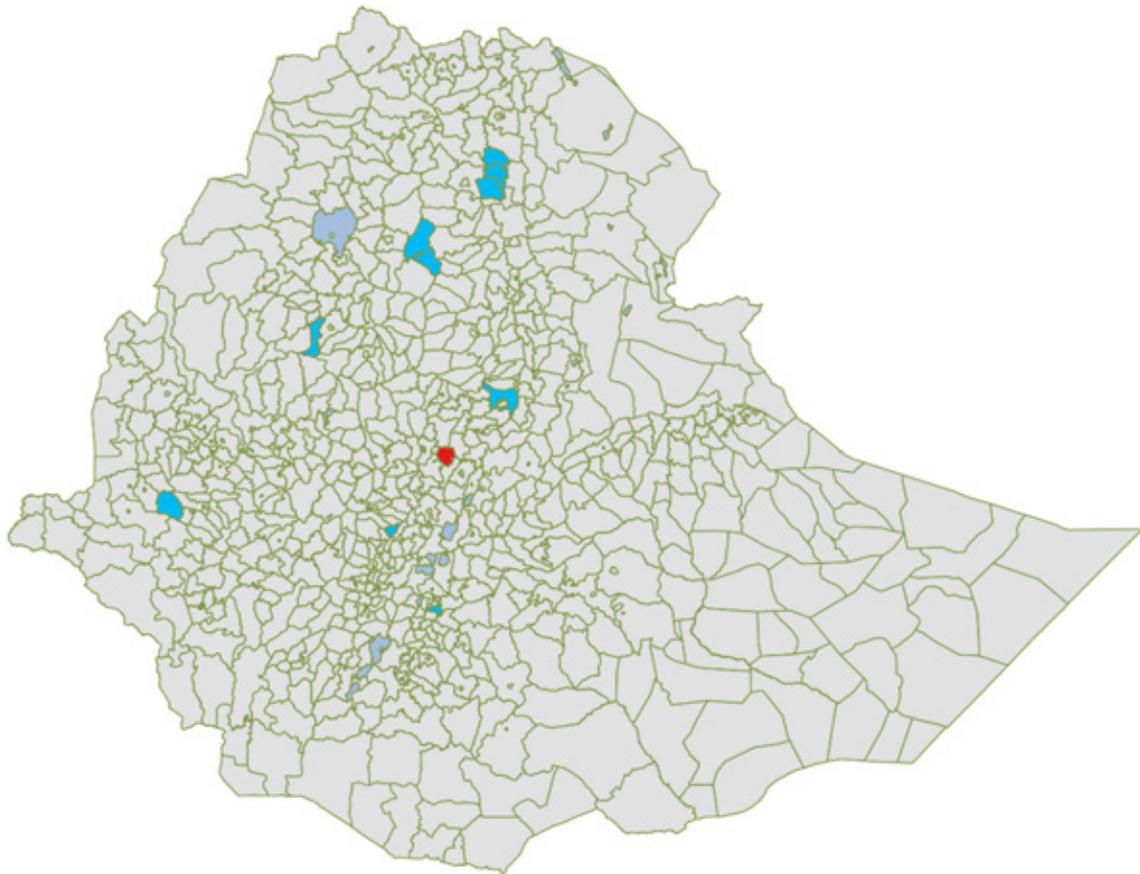


Figure 4 Target areas of BENEFIT collaboration in malt barley

Tigray

Malt Barley is a newly introduced crop following the establishment of the Raya brewery in the region. The local community has no knowledge on how to access quality seed and produce standard grain malt barley. In addition, there is limited availability of improved varieties of malt barley with required quality requirements. To address this situation, stakeholders were involved in starting contractual malt barley production as well as value chain development. However, these efforts were not well integrated, limited to two trial sites and did not cover the whole malt barley value chain. To enhance malt barley production and marketing, training was provided to farmers on quality seed production and marketing, demonstration trials conducted, farmers supported to enter into contract farming, establishment of a regional malt barley platform, market linkage created and exposure visit to successful malt barley producers in different areas were organized.

As a result of this collaboration, a malt barley regional platform was established, execution of training on quality seed production and marketing to *woreda* experts and members of three Seed Producing Cooperatives (SPCs), a total of 289 grain producing farmers (17% female) from the three *woredas* were trained in malt barley production, marketing and contract farming, 45 executive members of 9 SPCs were trained in management of cooperatives, five quintal of basic seed was procured and supplied to Hadnet Raya seed union for seed multiplication, a new partnership was created with Global Malting Service (GMS), seed production, demonstration and adaptation trials and field days were conducted in two *woredas*, 2.3MT of certified seed was collected by Hadnet Raya seed union from SPCs, a total of 62.2MT grain malt was collected by GMS for Raya Beer Factory. The established regional platform is expected to sustain and expand the demonstrated evidences to other potential areas and stakeholders in the region.

SNNPR

In SNNPR, linked with the agroecological suitability and in the vicinity of Asela Malt Factory, collaboration on malt barley was done in Malga and Gumer *woredas*, where are a number of smallholder farmers are present that could reasonably allocate part of their land for malt barley cultivation. The core objective of the collaboration hubs were: i) to put in place the malt barley seed system and ii) to establish and strengthen a malt barley value chain development and iii) to further foster its institutionalization in the research and extension system. Activities included value chain analysis, participatory varietal selection, demonstration and pre extension demonstration, capacity building and stakeholders' engagement.

Improved access to seed of preferred varieties, quality malt barely seed and grain production, output market linkage, establishment of functional multi-institutional platforms, involvement of women in leadership of cooperative, and institutionalization of best fit packages for malt barley were some of the achievements. In the 2018 reporting period, 37 farmers, of which 8% women, were involved, covering the total area of 25ha malt barely seed production. The average seed productivity of malt barely in Malga and Gumer was found to be 4500 and 3560 kg/ha respectively. As compared to farmers practice, an increase of 253% was observed. To achieve this, suitable agroecology, public-private partnership, proximity of market are some of the success criteria resulting in import substitution. Overall, the intervention was deemed successful through an increase in production area to 10,000ha, increased productivity to 3.75 t/ha, and output market creation that contributed to increase volume of supply to themalt factory (1,800 MT since 2014).

Amhara

In Farta *woreda*, malt barley production and marketing started some years ago. However, the introduction of new varieties was very minimal in the *woreda*. Activities have focused on strengthening the malt barley value chain through introduction of newly released varieties, capacity building of Development Agents (DAs), SMS and farmers, improving access to seed, linking the product with market and establishing a malt barley platform. Major accomplishments were: i) access to certified basic seed of malt barley to Addis Alem SPC by identifying the sources, linking the cooperative with the supplier and provision of basic seed to cooperative, ii) cooperative organization and seed marketing to cooperative committee members, and seed marketing and business planning to SMS and Das were trained, and iii) the cooperative was linked with seed regulatory body, seed extension, seed union, and seed buyers and iv) strengthening of the malt barley regional platform. A gender gap analysis for the seed producing cooperative was completed and documented, training was provided to cooperative members on gender balance and awareness creation event on nutrition was facilitated.

2.3 Soya bean value chain development

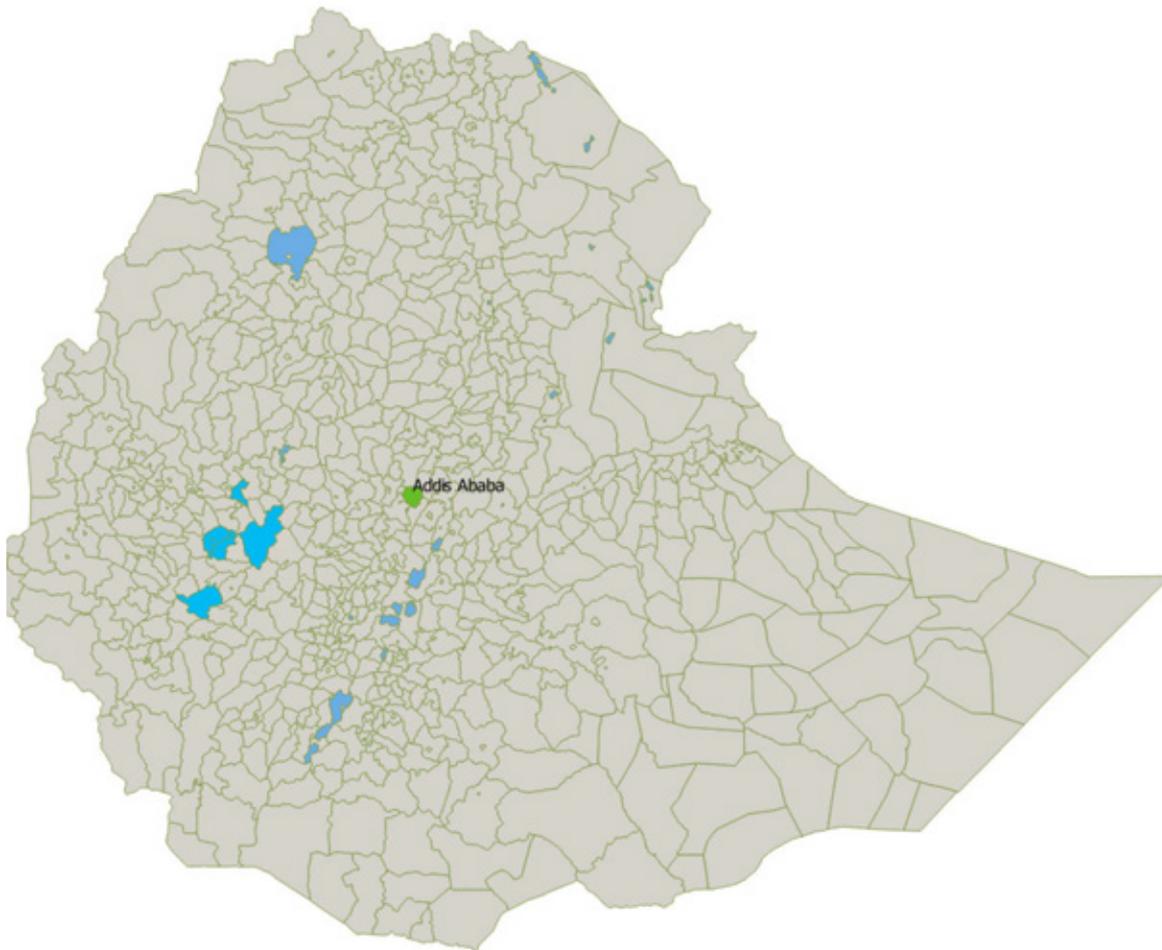


Figure 5 Target areas of BENEFIT collaboration in soya bean

Soya bean value chain development in Oromia region has been implemented in Wayu Tuka woreda in East Wellega zone since 2016 and in 2018 started in Chora woreda, Buno-Bedele zone. Major activities undertaken included: i) scaling of soya bean production, ii) mapping of key stakeholders and organizing a soya bean platform, iii) capacity building on techniques of quality seed production and market orientation, iv) facilitating collaboration with other stakeholders, and v) a gender analysis with specific to soya bean targeting identification of women empowerment mechanisms.

As a result farmers are obtaining quality seed of improved varieties more easily. This is due to the fact that a group of farmers in the intervention areas started production of quality seed of improved varieties of soya bean, supplying this seed to those farmers engaged in production. Moreover, the intervention played a pivotal role in connecting farmers with traders and exporters along with mobilizing for active participation in the soya bean stakeholders' platforms. As a result, seven primary cooperatives were linked to nine companies and managed to supply 9300MT to these companies. In total 3,372 farmers were reached through pilot scaling with a soya bean productivity increase by 47.1% compared to national average and 8MT quality seed was produced.

The platform has improved the farmer's market information and reached to a consensus on how to influence policy makers to decide to include soya bean production into the extension package. As a result of these efforts, soya bean has been included in Ethiopian commodity exchange as of January, 2019. Sustaining the platform is crucial for enhancing the value chain development, this will only be realized through continuous consultation meetings and capacity building for the major actors in the chain. Furthermore, the marketing skill of cooperative board members and managers poses a great threat to influence the processors with regards to the timely supply of the product. Thus, empowering cooperatives should focus on capacity building.

2.4 Potato: Strengthening the value chain

Amhara

Potato is a major food security due to its ability to mature earlier than most other crops at time of critical food shortage. Among others, unavailability of seed potato of improved varieties, pest and diseases, low soil fertility, poor agronomic practices, weak technology transfer and poor access to markets were identified as the main constraints responsible for low productivity and limited expansion potato in the region. Therefore, disease free quality seed was supplied and construction of a screen house and associated facilities was facilitated, introduction of newly released varieties, providing training and capacity building of DAs, SMS and farmers, enhancing the mainstreaming of gender and nutrition, linking the product with the market, and establishing potato platforms for better stakeholder linkages.

Major achievements were i) increased availability of disease free potato mini tuber seed, ii) constructing new screen house that has increased the total volume of disease free potato seed supplied, iii) farmers capacity was enhanced on screen house management and mini tuber production, iv) improved productivity levels, v) improved recording of financial transaction by farmers. These results further helped in consensus built on identification of challenges and sharing of roles and responsibilities regards potato production, created linkage between the Amahara Regional Agriculture Research Institute (ARARI) and SPCs for sustainable supply of plantlets. In addition the gender gap analysis conducted and the training provided as the per the needs enhanced the capacity of farmers on gender and nutrition issues.

2.5 Sorghum: value chain development

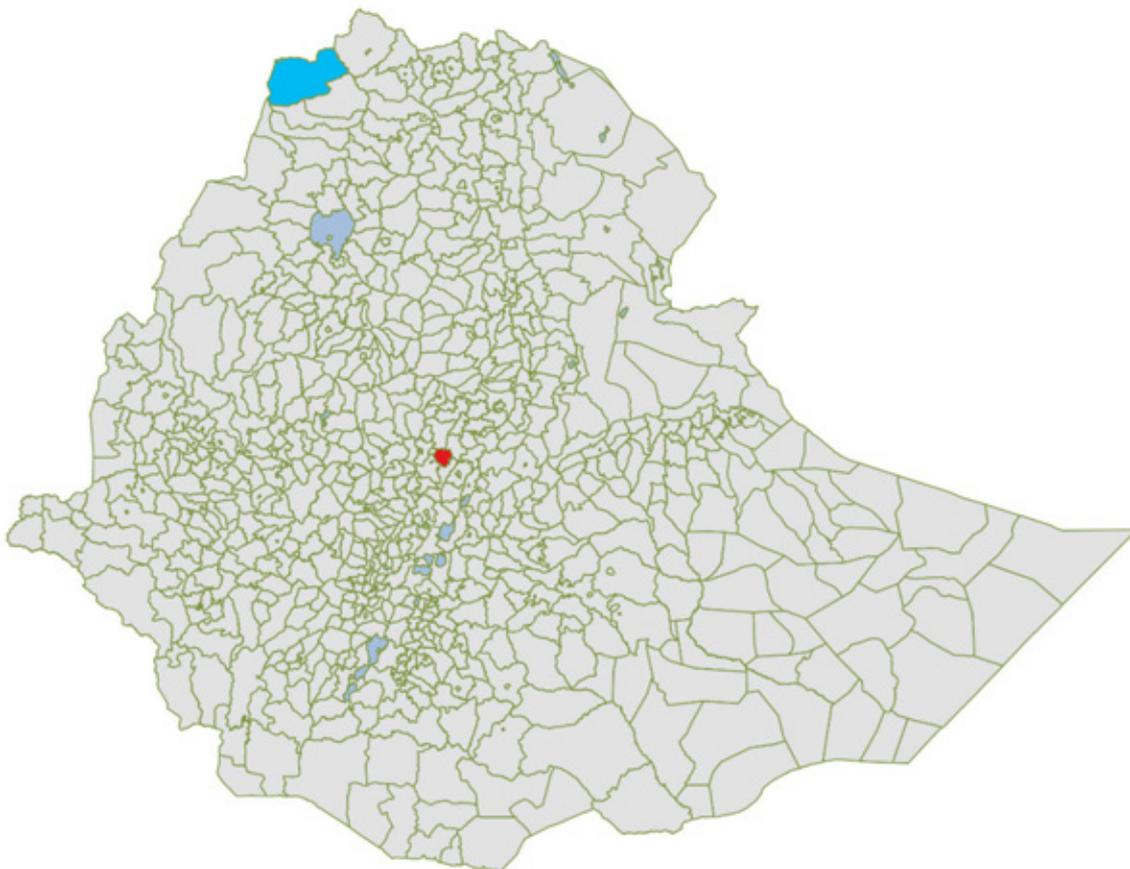


Figure 5 Target areas of BENEFIT collaboration in sorghum

Tigray

Sorghum covers a large area of the Tigray region especially in the west and north western zones. However, in the area there is lack of high yielding, farmer preferred and striga tolerant sorghum varieties. The latter, coupled with low fertility of the soil, are the reasons why a proven integrated striga management option was not in place. Both commercial and smallholder farmers use herbicides that are not registered in Ethiopia and for which the human and environmental impacts are not known. Cognizant of these problems, BENEFIT collaboration efforts were implemented to improve quality sorghum production and marketing through alignment of activities, mechanization and increase accessibility of improved seed.

The most relevant results of the activities were sorghum adaptation trials conducted in Asgede tsimbla and Qafta Humera *woredas*, evaluation of environmental impact of Chlorosulfuron 75 herbicide tested on 10mx10m plot in HuARC, improving the capacity of stakeholders by providing ToT to 26 (2F) *woreda* SMS on ISFM, conducting joint field day in Qafta Humera (127 participants) and in Asgede-tsimbila (79 Participants), and upgrading the 3 AGP supported Common Interest Groups (CIGs) to SPC level in southern, central and north western zone of the region.

3 Increased quality and quantity of sustainable agricultural production

ISSD, CASCAPE, SBN, REALISE and to a lesser extent also ENTAG, have contributed to the objective of increasing the quality and quantity of sustainable agricultural production in 2018. ISSD targeted improving the availability and use of quality seed of new, improved and/or farmer preferred varieties. CASCAPE with a focus on Agricultural Growth Programme (AGP) woredas does so through testing and validation of best fit agricultural practices and making these available for dissemination, working together with woredas to increase the capacity to develop and implement agricultural development plans, including strategies for scaling and a focus on diversification of agricultural production with attention to nutrition. SBN targeted enhancing sesame production and cost of production reduction. REALISE with a focus on Productive Safety Net Programme (PSNP) woredas works on improving access to quality seed of preferred varieties, development of best-fit practices, capacity development of beneficiary farmers and partners, and addressing issues related with enabling environment. ENTAG in this regard, facilitates creation of pull factor for increased production through improved market access and stakeholders' linkage.

Summary achievements



1.813.946 farmers reached with increased productivity (direct and indirect)

264.674 farmers reached directly: 25% ♀ and 75% ♂; 28% youth under 35 years.

1.388.861 farmers reached with improved access to input markets

56,982 persons reached/trained with improved technology and skills:

40% ♀ and 60% ♂; 27% youth under 35 years.

261,334 trained farmers in sustainable agricultural production & practices:

31% ♀ and 69% ♂; 29% youth under 35 years.



114,998 of hectares of farm land used more eco-efficiently (direct and indirect)

3.1 Outcomes achieved by BENEFIT programmes

ISSD – Increased availability and use of quality seed

In 2018, ISSD Ethiopia Programme has supported about 13,309 famers (of which 52% were women farmers) through participatory variety selection (PVS) and crowdsourcing. Moreover, ISSD continued supporting 149 seed producer cooperatives (SPCs), 21 small and medium domestic private seed companies, four public seed enterprises (PSEs), and Dutch seed companies to produce and avail quality seeds of different crop varieties. Accordingly, a total of 280 varieties of 17 crops have been deployed through PVS) and crowdsourcing (CS). Similarly, the SPCs have produced seeds of 80 varieties of 22 crops, while the PSPs have produced seed of 31 varieties of 16 crops. It is interesting to note that seeds are produced for 7 legumes, which are useful source of protein and good for soil fertility management. Both the SPCs and the PSPs have produced a total 28,353 tons of seeds (27% increase over the 2017); 5,768 ton of potato seed tuber (91% over that of 2017); 200,000 sweet potato cuttings, and 150,000 papaya seedlings, which will be used for planting in 2019 cropping season. An increasing number of SPCs, 14 in 2018, have obtained a Certificate of Competence (CoC) for seed production, marketing and distribution and the majority of the audited SPCs are found to be profitable in 2018, showing that the SPCs can be self-reliant in seed business. ISSD support to the seed producers incudes trainings in seed production, internal quality control, financial and organizational management and providing small grant (with co-funding requirement) for infrastructure development.



The promotion of small seed packs through seed mini-markets has strengthened the knowledge, skills, and awareness of farmers, *woreda* experts, and SPCs. The small seed packs open up opportunities to address large number of smallholder farmers to access and use quality seed.

CASCAPE - Best fit agricultural practices & Scaling and woreda capacity development

In 2018, the programme conducted 58 testing and validation trials, 19 pre-extension demonstrations (PEDs), and pilot scaling demonstrations. In addition, 57 *woredas* were supported with preparation of their *woreda* development plan, which also served as a means to incorporate CASCAPE validated practices.

Based on the results of the testing, validation and pilot scaling demonstrations conducted over the past 3 years, 16 best-fit practice manuals have been prepared. Through consultation with regional and national extension programme and with endorsement of the state minister, 8 best fit practices (potato and Rhodes grass from Bahir Dar, papaya, mung bean and garlic from Mekelle, soya bean and maize from Jimma, malt barley from Hawassa) were selected to be incorporated into the national extension package. In addition, the extension director has requested CASCAPE to assist with the formulation of extension package for model farmers based on verified best fit practices.

A total of 24 best fit practices were incorporated in the various *woreda* development plans, reaching through organic scaling 26,991 (28,5% female) smallholder farmers. The *woredas* are implementing the practices with their own budget and support of AGP with CASCAPE only providing some M&E and training support.

The programme trained 809 (11% female) SMS and experts through ToTs at *woreda* level on topics identified through the training need assessment (TNA). The SMS and experts cascaded training reached 4,433 (29% female). In addition, the programme trained a total of 192 (2% female) researchers on various topics. In-house training was organized for 125 experts at national level including programme experts in university clusters in five-rounds on topics identified by the TNA.

Alifya Abasharaf, a 35-year-old mother of five: *“Using the new variety and the new techniques, I have doubled my yield. Last year, 2017, I grew wheat on 2250m² of my land and got 12quintals (54qt/ha). We kept what we needed for home and sold the rest as seed or exchanged them with grain. With the money I got, I bought fertilizer, things I needed at home and a heifer from a farmer I met during one of the field days organized to showcase the new variety and practice. No more selling my livestock.”*



ENTAG

Target beneficiaries of ENTAG are mostly companies, commercial farms and farmer cooperatives and unions. However, the programme has been working indirectly on the quality and quantity of sustainable agriculture. To improve the quality and quantity of agricultural production in four of its priority subsectors, poultry, aquaculture, legumes and spices, ENTAG has been working on provision of technical assistance, trainings and innovation funds to increase the financial and technical capacity of

private business companies, private sector associations, farmer unions, commercial farmers, government agencies and research centres. Through its innovation fund component and capacity focused activities, ENTAG has enhanced the production potential of commercial farms and smallholders, benefiting 537 smallholders in Amhara, Oromia and SNNPR Skills and awareness of private companies, commercial farms and union representatives have improved through exposure visits for new technologies and training programmes of 59 private companies to Egypt, the Netherlands, India and Vietnam.

Training on aquaculture production was given to 55 individuals from private aquaculture farms, fish traders and government experts; 198 turmeric and black pepper producing smallholders have been trained and linked with technology suppliers to enhance their competencies and capacities of production in this reporting year.

SBN – Production cost price reduction

SBN in collaboration with stakeholders trained 1,134 experts on good agricultural practices (GAP), who cascaded the '20 steps' approach to 162,545 farmers. Recommended practices were scaled to 89,192 smallholders and 25 commercial farms on 81,300ha. Studies ascertained a 145% yield improvement over the farmer practice and per quintal production cost reduction of >45%. More than 3,000 farmers used weather forecast information for farm decision making. Demonstration of rotation crops is leading to increased production of food and malt sorghum; soya and mung beans; contributing to farming systems diversity, improved local food production and farm income. Efforts were made to diversify and improve the nutrition status of farm households and labourers. More than 15,000 farm households were trained in financial literacy, keep financial records, calculate costs and benefits. Banks and Micro-Finance Institutes (MFIs) developed clear interest in farmers' cost recording and thus making farmers more eligible to credit. 5,585 farmers from 22 cooperatives benefitted from on-lending of marketing credit. They accessed input credit at a much lower cost (18-20% instead of 100% interest rate of informal money lenders).



“Previously, I was quite suspicious. I did not follow the advice of agricultural experts. In 2018, I was changed. I followed the advice of our kebele agricultural experts and started to perform farm activities following their advice. I have come to understand that what I should not do is what I used to do. That is what the soil requires.” This is a word from Getayeh Hassen, a young farmer, 30, from Lemlem terara kebele, Metema woreda.

REALISE - Practices, seeds and capacity building pathways



Medhin, head of household and mother of 8 children has received a dairy goat. She tells: *“by managing my goats well I have the ambition to have a greater number of goats, save more money, send my children to school, feed my family nutritious food, and may be build a new house enough to accommodate my family, and be a model to others”*.

Constraints and opportunities of the *woredas* have been identified as prioritised by the communities through Participatory Rural Appraisal (PRA). Baseline data, which will be used as a benchmark for assessing impact of the programme, has been collected from 1902 households in 18 *woredas*. Best fit practices from CASCAPE and research institutes have been matched with conditions of intervention *woredas* of REALISE that help to develop best fit practices. Best fit practice validation and demonstration started in Mekelle (on maize, potato and dairy goat) and Oda Bultum (vegetables) clusters in the off-season using irrigation. Regarding seed, crowd sourcing and participatory variety selection approaches of ISSD have been assessed for seed system intervention for target *woredas* identified along working with seed producers and users to strengthen and/or establish linkages. Capacity development of research and extension personnel will contribute to this pillar. Over 60 persons participated in a workshop conducted on programme content and implementation modalities, bottom up planning (PRA) and baseline survey, scoping study, stakeholder’s analysis, and technology matching. In 2018, 53 government extension experts were trained by the Mekelle cluster on scaling of best fit practices. The plan for 2019 is to carry out a TNA with research institutes, Bureau of Agriculture/ Woreda Office of Agriculture (BoA/WoA) and relevant Non-Governmental Organisations (NGOs) so as to develop and implement a needs-based training plan.

Hailay Zeru, 30, is a father of three sons and two daughters. He shared in 0.5 ha of land from landholders/farmers. Potato Pre-scaling is one of the REALISE interventions in Ganta Afeshum *woreda*.

In December 2018, Hailay hosted potato best practice pre-scaling activities using a three Quintals of basic seed. He has planted those seeds at his field using irrigation and he is managing his field very well.

Hailay is hopeful that the intervention would change his life by producing high yielding variety and producing more than two times per year and thereby building resilient livelihoods.



4 Improved markets and trade

ISSD, ENTAG, SBN and REALISE, contributed through various activities to the objective of improved markets and trade. ISSD does this through enhancing the performance of the seed value chain and REALISE has designed intervention options similarly to engage the performance of the seed value chain in PSNP target *woredas*. ENTAG contributed through increasing the performance of key sub-sectors and enhancing B2B linkages. SBN support the development of sesame products and markets. For detailed information, please see the programme specific annexes.



4,525 farmers reached with improved access to output markets 20%  and 80% 



1,048 companies with supported plan to invest, trade or provide services

4.1 Outcomes achieved by BENEFIT programmes

ISSD – Enhanced performance of the seed value chain

ISSD Ethiopia Programme attempts to facilitate seed value chain development by linking seed producers (SPCs, PSPs, public seed enterprises and international seed companies) to inputs and service providers; facilitating business to business integration for seed and related inputs and services; and piloting demand-driven interventions to address seed value chain bottlenecks and exploit emerging opportunities. Facilitation of multi-stakeholders' meetings/platforms both at regional and national levels as well as sharing and learning are also additional means of achieving development of seed value chains. Accordingly, in 2018, 68 different types of linkages have been established to link SPCs to input (e.g. basic seed) and 26 service (e.g. seed inspection) providers. In addition, 50 market linkages have been established to help SPCs to market their seeds.



“Previously, we as seed suppliers did not have direct relationships with seed producers. We used to sign contractual agreements with BoA and they received the produced seed whenever they felt comfortable. Thanks to ISSD we are now able to sign contractual agreements directly with seed producers. Through this improved interaction, we have been able to address some of the gaps in EGS production. Now, we can even charge each other in case of any default” Ato Feleke, EABC seed supply manager.

ENTAG

In the reporting year, the ENTAG programme worked on a range of activities on backward and forward market linkages, trade and investment integration among local and foreign agribusiness companies. The total volume (1967 MT) and value (\$1.89 million) of export contract that is made through ENTAG, this reporting year, increased by 59.5% and 47% in volume and value respectively. This was reached through the link made between five Ethiopian exporters and international companies in Russia, Switzerland, Bangladesh, India and Israel. Out of the total export market to these countries, annual sales of two exporting companies increased by \$0.83 million through exporting 875mt of turmeric and 38Mt of black cumin. A trade mission to India resulted in export of legumes worth of \$1.2 million. The

programme organized 4 trade missions in poultry, spices, legumes and aquaculture to the Netherlands, India, Vietnam and Egypt. The programme also brought 16 private companies, a farmers' union and 5 government agencies to Gulf Food Expo and Indian International Spices Conference. These trade missions and international events enabled private companies and farmers' unions to share experience and create market linkage with other international participants. It has been supporting the private sectors in Ethiopia on farm management, production quality, contract farming, financial modelling, new investments, quality inspection and efficient agro-logistics. In this reporting year, ENTAG supported more than 140 private companies on access to improved markets and trade through its front desk, hands on advisory services and provision of graduate interns.

As part of the trade missions and Business-to-Business (B2B) component, ENTAG has also been working on match making and market integration among Ethiopian and foreign agribusiness companies. In 2018, the programme successfully established business contacts with more than 133 foreign companies through its trade missions, and one local international conference (EPOSPEA annual conference). Over 11 B2B linkages were facilitated between Dutch and Ethiopian poultry companies. 56 B2Bs were also facilitated among 7-soya bean supplying coops, unions and 8 food and feed processing companies and exporters. In addition, the programme also established backward integrations among Ethiopian private companies, commercial farmers and smallholders. ENTAG has been working on contract facilitation and trade negotiations among local companies, farmers and foreign buyers and traders. This reporting year, through its backward integration, ENTAG supported 2 unions, 1 commercial farmer and 8 local traders to sell 9415.5 Qt of turmeric and 380 Qt of black cumin, which is worth ETB 18.87 million. The programme also approved 7 innovative projects, among them the 4 projects are already financed and going to work on marketing and trade in agribusiness.



Due to ENTAG and its public and private stakeholders' collaboration efforts the efficiency of private companies in working with smallholder farmers improved, value chain shortened, quality and yield improved through the capacity building training provided on improved seed spice production and marketing and adoption of improved production technologies as pilot out-grower scheme on 120 ha of land owned by 160 smallholder farmers.

SBN - Product and market development

Three banks (CBO, Abay and Lion) provided 30.5 million ETB marketing credit to Setit, Metema and Dansha unions through the guarantee fund (10.3 million ETB) facilitated by Benefit-SBN and Agriterra. This helped 22 cooperatives to buy more sesame from their members and to stay longer in the spot market. The loan management training and frequent monitoring of Benefit-SBN, F&S and Agriterra improved financial management skills and resource mobilization capacity of unions and cooperatives. It resulted in high loan repayment rate, increased membership and share sales, improved savings and a better relationship between unions and cooperatives. Selam Union was encouraged to mobilize member contributions to operationalize their idle cleaning machine. In some months the members managed to mobilize 1.2 million birr and started cleaning sesame. Value adding processes face challenges of high input cost; processing inefficiencies, lack of infrastructure and limited market demand to achieve scale and realize profits. Establishing direct supplier-buyer relations remain the major challenge of product and market development; including sesame-based products for the domestic market. Continued efforts will focus on improved traceability, market transparency, price information sharing systems and Ethiopia Commodity Exchange (ECX) reforms.

Financing the agricultural sector and sesame specifically is feasible. Farmer organizations and farmers are very happy with alternatives to informal financial resources, showing a high commitment to repay.

“The guarantee fund intervention builds marketing linkage and enhances members economic participation and profitability of both the union and cooperatives.”

Desalegn Legesse, Setit Union Manager



5 Improved enabling environment for the agricultural sector

In this chapter achievements of each BENEFIT partnership programme and the BENEFIT portfolio in contributing to enabling institutional environment for the agricultural sector are explained explicitly. The main activities performed in the area of enabling environment are related with i) identification of relevant policy issues for engagement, ii) documentation and preparation of proper communication materials for the demonstrated evidences for the issues identified, iii) conducting different forums mainly workshops to communicate the identified policy issues with demonstrated evidences, and iv) contributing in the design of new directives and regulation.



Contributed to 19 substantial policy changes/ reforms

5.1 Outcomes achieved by BENEFIT and its programmes

ISSD – Improved enabling environment for enhanced performance of seed value chains

In 2018, ISSD Ethiopia Programme has played key role in bringing the seed agenda to the attention of the Federal Ministry of Agriculture. As a result, there is more interest at the Ministry level to work on systemic seed sector challenges and possible strategic interventions.

Ministry of Agriculture delegated ISSD to establish EGS production and supply system. Accordingly, series of planning workshops have been conducted with the principle of regional EGS self-sufficiency and the federal organizations to fill gaps. As a result, suppliers and receivers of EGS signed a contract and the seed is produced. This will be followed by transaction of the seed as per the agreement. The other major output of ISSD in 2018 was developing a seed sector guiding document (National Seed Sector Transformation Agenda). The process started with experience sharing of regional seed core groups which was then developed to the national seed sector transformation agenda. The ministry accepted the concept of the transformation agenda, and requested ISSD to lead the development of seed sector guiding document. Towards the end of the year, the document was developed and the ministry after accepting the document suggested to review the draft seed policy based on the seed sector guiding document, which will be done in 2019. ISSD has also developed and contributed to the revision of seed related directives. These include directive for disposal of non-viable seeds & CoC for seed producers' cooperatives finalized and approved. Moreover, ISSD has contributed in the development of a directive on seed marketing implementation, which was recently approved.



ISSD's project interventions and facilitation work over the last years have been paying off their efforts and have proven to be successful in achieving a more coordinated approach to drive transformation at scale. H.E. Sani Reddi, State Minister of MoA noted that *"with the recent change within the Ministry, this is an ideal time to propose new way of doing things to bring transformational change"*. He proposed that *"ISSD should continue to lead the facilitation process. Private sector (Ethiopian Seed Association) and other relevant actors, such as the national seed advisory group, should be included in the consultation process to answer questions, enrich the recommendations and take ownership."*

CASCAPE - Strengthened enabling institutional environment for the agricultural sector

One of the result areas in CASCAPE is to support policy makers to make informed decisions at national and regional levels about agricultural sector development. In order to provide demonstrated evidence for policy makers and other stakeholders, the programme implemented 9 in-depth studies on strategic issues such as blend fertilizer recommendation, drivers of adoption survey, policy landscape and formulation study. The findings of some of these studies and broader programme results are shared in 8 thematic platforms and 13 stakeholder workshops at regional and national levels. In addition, one policy brief on blend fertilizer and three technical papers focusing on soil fertility and participatory action research were prepared and shared to policy makers and other stakeholders. Specifically, CASCAPE in collaboration with the Ministry of Agriculture (MoA) organized a high level policy field excursion with members of the parliament to visit scaling-up support activities around Hawassa. The field visit was followed by a one-day panel discussion on policy and research implications of CASCAPE results. A drivers for adoption study using panel data was executed and a comprehensive report at national level is being prepared on the factors that inhibit or promote the adoption of agricultural best practices by farmers.

ENTAG

The ENTAG programme, through its platform meetings and other high-level engagements, has been serving as a catalyst for some of the national and regional policy, strategy and institutional reforms and drafts of new regulations on Ethiopian poultry, spices, aquaculture and pulses subsectors. In this year, the trade barrier from India and Pakistan, and series of warnings from other countries in relation to food safety were the key issues challenging the export of Ethiopian legumes. In this respect, a series of high-level consultative meetings were organized to frame interventions and create sense of urgency to the respective public institutions to undertake government-to-government negotiations. Besides, to own and lead such issues, establishing Ethiopian Pulses council to provide sustainable advisory role to the sub-sector actors is undergoing.

Following the findings of a study on aflatoxins, ENTAG facilitated a series of consultative meetings to identify the key interventions to support the national food safety control system. The initiative got interest from the ministry of trade and willingly led the task-force that was selected to frame the action plan and scope the key national stakeholders. Through series of engagement of the task-force, action plan and demand for capacity building of the national food control system stakeholders is outlined.

The Amhara One Stop Shop (AOS) was finalized in the first quarter with a validation meeting in Bahir Dar and incorporating comments of the meeting. The report was intended to improve investment service of Amhara Investment Commission.

A strategic road map document for the establishment of Ethiopian Pulses Council was developed and shared among platform participants in 2 series meetings. Though the council does not require legal body to function, in order to get recognition from government and stakeholders, registration was sought. Article of Association and council chairperson election was conducted to effect the registration. But there was no Ethiopian proclamation that either permits or hinders the registration of such type of organization. Hence, lobbying the relevant ministries to get recognition and realize the establishment of Ethiopian Pulses Council is planned for 2019.

In 2018, after much analysis and discussions in numerous workshops organized, ENTAG in collaboration with GD animal health group in the Netherlands have successfully developed and delivered the strategic plan for disease prevention and control in commercial poultry and handed the document over to the State Minister of livestock. Due to a food safety warning that the export businesses were receiving, ENTAG had commissioned a study on Aflatoxin.

After a request of the Federal Government of Ethiopia and assigned by the Netherlands Embassy, interviews were conducted with about 15 Dutch investors in Ethiopia, from different sectors, regions and sizes. This resulted in the Investing in Ethiopia – The Dutch experience, report which is now being used by Netherlands Embassy, Ethiopian-Netherlands Business Association (ENLBA) and ENTAG as a

strategic lobby-document in suitable meetings with high government officials from the Ethiopian government.

In its spices subsector ENTAG has also managed to advocate and lobby the government to launch spices market regulation. The draft regulation has already been reviewed and it is going to be handed over to the Council of Ministers for approval.



The substantial increase in number and size of a specialized commercial broiler/layer farms with the absence of a strategic approach towards poultry health and disease control/prevention puts the entire poultry sector in jeopardy. For this reason, ENTAG programme has provided technical support in developing the strategic plan to strengthen poultry health, disease control and prevention in Ethiopia which is now handed over to the Ministry of Agriculture and Livestock Resources and awaiting implementation.

SBN – Strengthened enabling environment for the Ethiopian sesame sector

After the transfer of the Benefit-SBN database to *woredas*, a start has been made with the establishment of a sesame sector information system in six *kebeles*, based on the E-Prod package. Capacity of farmers, women, youth, and experts was built on improved sesame and rotation crop production, weather information use, loan management, nutrition, home gardening, and cost record keeping. Field days, meetings and workshops served as learning and exposure events for 49,638 farmers and 820 other stakeholders. The number of farmers recording production costs and doing cost-benefit analysis increased to 16,900 farmer households. This contributes to developing farming as a business (farmer perspective) that can be funded by FIs (MFI/bank perspective). For improving input credit, a tool for bottom-up agro-economic planning was tested for the second year. Experiences with financial literacy training and guarantee fund were documented and shared. After the political changes, the process leading to the establishment of a national sesame platform was interrupted and delayed.



Miss Zewudie Adane, is from Mender 6,7,8 *kebele* Metema *woreda* who earns a meagre income from her small land on which she cultivates once a year. In 2018, Miss Zewudie received theoretical and practical training on home gardening, organised by the *woreda* Office of Agriculture and Benefit-SBN. This enabled her to produce different vegetables and fruits and helped her family to change their food consumption habits. The family started to consume vegetables in addition to the cereals they take almost on a regular basis.

REALISE - System innovation pathway

System innovations are new products, services or arrangements that improve the functioning of value chains, seed systems, or research-extension systems. Examples are new ways of credit provision, crop insurance, new ways of seed marketing, new types of research-practice interfaces, new instruments to foster innovation and development piloted through projects and in-depth studies. In 2018, the programme conducted stakeholders' analysis and preliminary discussion with researchers on the need for social experimentation, communities' coping strategy to shocks and enhanced resilience. Topics for in-depth social studies are being identified. The in-depth studies and social experimentation will be conducted after further consultation with experts experienced in the PSNP programme and areas.

REALISE pillar four is devoted to conduct in-depth studies and pilot researches to explore and better understand critical success factors in promoting improved agricultural practice, food security and resilience in PSNP areas. In doing so REALISE identify expert panel from EU-RESET, CARE-GRAD, ESSP/IFPRI, HEAP, GoE/World Bank to deliberate on and identify systemic bottlenecks. The process also involves other key stakeholders at regional level through University clusters. To contribute to the existing Ethiopian government effort to move from blanket recommendation of fertilizers to site and crop specific recommendations, REALISE has initiated collaborative activities on EthioSIS fertilizers recommendation with EIAR and the Agricultural Transformation Agency (ATA). An MoU is drafted and detailed discussion finalized to be signed.

6 Mainstreaming social inclusion and nutrition

6.1 Social inclusion

ISSD's efforts to increase availability of and access to quality seed of farmers' preferred varieties considers gender, youth, farmers with small, medium and large landholdings. The increased efficiency of seed marketing and distribution; the delivery of seeds in small packs to reach farmers with small landholding and the increased involvement of agents in seed distribution are some of the measures ISSD has been working with all sorts of farmers.

Mana Bilate says: "Previously, I used to support my husband in farming using my indigenous knowledge but after I became a member of the seed producers cooperative, I received trainings about improved agronomic practice. Therefore, I can independently practice agriculture, such as sowing, identifying the good and bad quality seed and the difference between seed and grain."



With respect to gender sensitive agriculture, a training was organised in February 2018 jointly between ISSD and CASCAPE for gender experts and focal persons of the various programmes. The training was meant to exchange lessons learned on gender mainstreaming and nutrition-sensitive agriculture. ISSD shared their relevant experiences on how they were able to meet their self-declared target of 50% female beneficiaries for informal seed system activities. This resulted in new insights among CASCAPE focal persons so as to what they could practically do to increase the target of female farmers in CASCAPE regular activities. Practical tips were exchanged such as organising field days and trainings on convenient times for women, and organising specific field days for female farmers on topics relevant for them.

CANAG, the Gender and Nutrition component of CASCAPE was approved by the World Bank and launched in 2018. This additional funding paved the way for CASCAPE to accelerate the mainstreaming of nutrition and gender in the programme. CANAG is well positioned to align with the relevant ministries, departments, international and local NGOs working on gender and/or nutrition. Unfortunately, we could not achieved the target of validating labour saving technologies in 2018. This was because the collaborative agreement (MoU) was not yet signed between BENEFIT, EIAR and ATA.

In 2018, ENTAG platform meetings were organized to address issues, among many others, related to nutrition and social inclusion. The platforms brought stakeholders from a range of institutions and government agencies to stimulate discussion on sustainable agribusiness in light of nutrition and inclusiveness. These would enhance awareness among actors of Ethiopian agribusiness on quality of production and market commodities to contribute to nutrition and social inclusion.

The number of women members of ENTAG supported private sector associations has been increasing. In the spices subsector, in particular, the number of women members of ESAHGPA, in this reporting year, increased from 7 to 13; number of women headed companies getting technical assistances from the front desk service increased from 7 to 11; number of women participated in ENTAG spices

platform also increased from 27% to 31% and in training and trade missions increased from 36 to 38 compared to last year.

Most of the activities of the ENTAG programme involved women and youth who are owners of private companies, commercial farmers and small holders. Thus, in most of the activities described above, directly or indirectly, youth and women have been involved in a significant proportion. ENTAG Innovation Fund programme supported around 537 smallholders from six completed projects; 20% of them are women. These smallholders benefited from ENTAG projects in terms of access to inputs as well as diversification of household consumptions from dairy and poultry projects. Six completed projects also created job opportunities for 36 female and 25 young workers under 35. This would increase the experience of women and youth in the production and marketing of the priority sectors products.

The business platforms facilitated by ENTAG, in general and the soya bean trading platform in particular were intended to facilitate access to smallholder production. During two of the Soya bean trading platforms 56 B2B were facilitated and trade deals initiated. Farmer organizations were linked with processors for potential trading; among the members of these organizations, the majority were women and young farmers. Moreover, ENTAG developed the legume business opportunity report that highlights potential businesses suitable for women and youth have been highlighted.

Gender mainstreaming and social inclusion (labour and nutrition) has been an integral part of the SBN programme activities. Trainings on good agricultural practices (GAP) of sesame and rotational crops like mung beans, a collaborative activity with CASCAPE, were specifically organized for women and youth in separate sessions. Through the different trainings more youth and women were reached. In gender, nutrition, home garden, weather forecasting, and financial literacy trainings efforts were made to represent youth and women. Social inclusion is an important consideration in relation to the newly demonstrated cleaning machines by SBN as it interferes with currently provided manual cleaning services, mainly by young labourers. To ensure inclusive market growth, specific attention must be given to the opportunities for these labourers to run the machine together and increase their income per hour through efficiency and quality improvements. Attention has also been given to labourers-who are mostly young and important stakeholders of the sesame sector. Together with labour and social affairs offices labour sensitisation events were organised for over 3000 labourers in both Amhara and Tigray regions. Brochures were published and distributed on the rights and responsibilities of labours and employers and about labourers living and working conditions.



“After CASCAPE introduced mung bean, we started producing shiro from this commodity. We also prepare wholegrain wot from mung bean. So, mung bean has become part of our diet and we are also saving money as the legumes produced in other places are expensive in our area.”

In the financial literacy training and production cost recording organised by SBN, 1,004 (13%) were female. Out of which 351 were young women while 2,011 were male youth. In most cases costs are recorded by husband, wife and children. Based on this feedback, farmers were invited to come to the training with family members that could support them. This household and family farming perspective is very interesting, as it may contribute to improved internal household communication and transparency. Among the beneficiaries of the guarantee fund 22.5% were female farmers. From the facilitated guarantee fund through unions to coops 22.5% of women members benefited internal loan, which is encouraging as it is commensurate with the proportion of female membership.

Mainstreaming social inclusion received attention during staff recruitment, training, PRA and baseline surveys in the REALISE programme. In the PRA exercise, for example, about 50% female farmers were heard from to identify the agricultural constraints they face, their access to and control over productive resources and available opportunities. To capture their indigenous knowledge and needs, focused group discussion was made with female farmers for seed and nutrition in the PRA. Moreover, a problem ranking exercise was conducted with youth groups and low asset farmers to assess the specific needs and interests of these groups so as to inform the planning of activities to address their needs in the 2019 annual plan. The in-depth studies and research pilots will mainly deal with systemic bottlenecks and issues of social exclusion which among others focus on youth, gender and economically weak section of the community.

6.2 Nutrition

ISSD gives due emphasis and awareness creation is also being given that seed producers consider seed production of nutritious dense crops such as grain legumes and of omega three rich crops like sesame. Increased production, marketing and distribution of seeds of grain legumes and seedlings of fruits contributes to improved nutrition. This increase in crop-variety contributes to increased dietary diversity.

In a joint workshop of ISSD and CASCAPE, nutrition experiences were shared. CASCAPE staff shared experiences on how to work on nutrition dense crops, and how to work in a nutrition-sensitive manner on agricultural activities. Lessons learned for ISSD staff were that working on seed alone will not automatically increase the nutritional status of men and women. More work is needed such as awareness raising on the nutritional status of farming communities & why nutrition is important, as well as practical complementary activities such as recipe demonstration and practical trainings on hygiene and processing of nutritious food crops. As a result of this training, ISSD and CASCAPE agreed to conduct a seed system analysis for specified nutrition dense crops (such as indigenous kale types and some pulses). Moreover, ISSD committed to support in linking CASCAPE to suppliers of seed for hybrid varieties of nutrition dense crops such as carrots, pumpkin, lettuce, and others.

Two trading platforms were facilitated by ENTAG with the intention of creating end market linkage for smallholder farmers to fetch better margins for their soya bean production. Accessing high-end markets will encourage them to increase the production of high valued, nutritious crop, in this case soya bean and supplement their home consumption. Hence, 56 B2B were facilitated and contacts were established with smallholders including women farmers.

In July and October 2018, ENTAG organised two policy level consultative workshops on food safety and nutrition. As a result the Ethiopian food safety and nutrition policy was reviewed and current constraints were brought to the attention of relevant government agencies such as the Ministry of Health. Awareness creation attempts were also made through public media.

Events to raise awareness among labourers in the sesame sector on labour conditions and rights and on health and nutrition were organized in collaboration with the respective *woreda* Labour and Social Affairs offices in 4 major labour market-towns (Dansha, Mycadra, Metema and Abrahajira for more than 3,000 labourers. Due to insecurity and insufficient communication and facilitation, labour costs were high in both regions.

The promotion of rotation crops in the sesame producing regions, diversifies farming activities and reduces production and marketing risks. Many women are interested in soya and mung beans, especially as crops for sale. Another boost towards diversification of farming systems is the support to vegetable and fruit production through home gardening. The activity involved 32 women and 15 men and is expected to improve nutrition. Attention will be given to training more women on recipe development (local value addition) and scaling of products from rotational and home garden crops in collaboration with women groups in Sanja, Metema and Dansha.

Mr. Gashaw explained: *“The training helped me to have important information about the importance of home garden and the nutritional benefit of different crops. I strictly followed what I have learned and prepared the land together with my family. My wife and my children supported me during planting, watering and overall management. We harvested fresh vegetable from our garden not only for our consumption but also for selling to my neighbours at a reasonable price. We got a good price from the ladies finger.”*



Table 1 highlights the observation by the programmes and the way forward for both social inclusion as well as nutrition.

Table 1 Way forward for improved mainstreaming of nutrition in BENEFIT programmes

Programme	Way forward
ISSD	<ul style="list-style-type: none"> • Primary and secondary data collection for documentation of gender experiences in ISSD. Primary data collection from Tigray region completed in 2018 and additional data will be collected from Amhara, Oromia SW, Oromia East and SNNPR from women involved in crowd sourcing and PVS, seed storage and LSB interventions; • In collaboration with PCU disseminate the gender experience of ISSD to national level relevant stakeholders: the approaches, methods, activities, results and lessons used to mainstream gender; • Primary and secondary data collection to document nutrition sensitive agriculture experience particularly crop diversification.
CASCAPE	<ul style="list-style-type: none"> • Primary and secondary data collection to document the previous experiences of time and labour saving technologies; • Women’s technology needs will be assessed in order to test appropriate, affordable and environmentally friendly, time and labour technology; • Mainstream gender in capacity building manuals; • Primary and secondary data collection to document the nutrition sensitive agriculture experiences particularly crop diversification and home gardening.
ENTAG	<ul style="list-style-type: none"> • Ensure that information dissemination from the platforms each on poultry, aquaculture, spices and legumes, reaches both men and women; • Lobby intensively for women participation in the outgoing trade missions; • Evaluate and document pilot IBM on spice and herb producing women cooperatives and analyze the gender perspective of the case; • Primary and secondary data collection to document food safety experience of ENTAG.
SBN	<ul style="list-style-type: none"> • Inform the 2019 plan of SBN using gender analysis and nutrition assessment findings; • Primary and secondary data collection to document the existing gender and nutrition sensitive agriculture experiences in SBN particularly crop diversification, home gardening and recipe demonstration.
REALISE	<ul style="list-style-type: none"> • Crop (technology) selection based on the baseline report for nutrition sensitive agriculture; • Nutrition sensitive agriculture training for stakeholders, including home garden agronomic practices; • Mainstream gender sensitization trainings in capacity building manuals, and develop tip-sheets; • Sensitize stakeholders on gender to consider it during farmer selection and invitation of field days, targeting both women who are head of households and women in male headed households; • Conduct participatory trials, and evaluate and promote new varieties and management practices based on men and women’s participation and criteria; • Identify labour and time saving technologies that can be adopted by women and provide the necessary inputs; • Advocate shared membership in SPCs and conduct women leadership training in SPCs;

6.3 CANAG

CANAG (CASCAPE Nutrition and Gender) is a nutrition and gender programme initiated to support the nutrition and gender component of the CASCAPE programme. Aligned with CASCAPE, the MoA and the AGP, CANAG is set out to support the Ethiopian government to increase diversified agricultural food production to achieve nutrition and food security. CANAG is financed by the European Union through a World Bank Multi-Donor Trust Fund.

The expected outcomes of CANAG are:

- Sustained availability of diverse, nutrition-dense crops;
- Increased awareness on importance of nutrition; and
- Increased ability by women to contribute to nutrition security for their family.

To achieve these outcomes, CANAG among others works on the testing of nutrition-sensitive agriculture technologies, capacity building of Development Agents and Health Extension Workers, behavioural change communication (BCC) and research on intra-household dynamics.

On May 1, 2018, upon the signing of the contract with World Bank, CANAG's inception phase commenced. This inception phase will continue to the implementation of the first CANAG trainings at the start of the Ethiopian agricultural season in April 2019.

Major achievements so far

Project team

CANAG follows CASCAPE's organizational structure. After the CANAG team was formed, various meetings and workshops were held on both national and cluster level to:

1. inform the clusters and external stakeholders on the objectives and working areas of CANAG,
2. to ensure collaboration and alignment between CANAG and relevant programmes, policies and strategies,
3. to discuss the practical implementation in terms of woreda, beneficiaries and technology selection, and
4. to agree on approaches for technology validation, M&E and SBBC.

To develop the capacity of the CANAG and CASCAPE team and to contribute to the capacity development within the MoA and the Ministry of Health (MoH), two workshops were conducted for experts from these entities. Training topics included policies, strategies and stakeholders, concepts in and linkages in the field of nutrition, gender and nutrient sensitive agriculture, technical aspects of home gardening and labour saving technologies, seed system analysis and technology validation.

Stakeholders' involvement

A number of meetings with stakeholders who have been identified as key for the implementation of CANAG have been held. Among the stakeholders engaged in 2018 are the Food and Nutrition Coordination Office under MoA, AGP, MoH, Sustainable Undernutrition Reduction in Ethiopia under MoH and MoA, World Bank, Agriteam, World Bank Gender Innovation Lab, IFPRI, Save the Children, Alive and Thrive, Melkassa and Debre Zeit Agriculture Research Centres, the relevant BoA and the WoA.

Intra-household dynamics

Because the households for the home-gardening activities were not selected yet, we could not make a start with this intra-household research pilot. In 2018 we had several meetings with SNV to learn from their experiences with intra-household decision making approaches. Furthermore, we finalized the draft study guide for the intra-household research pilot. As soon as the home-garden activities will start in 2019, this guide will be used and the staff will be trained on how to implement the intra-household research pilot.

M&E framework

The basic M&E framework from the CANAG proposal was adjusted and elaborated upon. Data will be collected for five KPIs:

1. Increased diversity of food intake by mothers and young children (baseline will be done);
2. Availability of and demand for affordable quality seed of varieties of nutritious crops has increased (baseline will be done);
3. Five hundred DAs and HEWs will be trained on nutrition behavioural change communication strategies;
4. Indirect beneficiaries;
5. An appropriate approach to work on intra-household dynamics is validated

In addition, CANAG will collect activity level data and more in-depth qualitative data to better understand how stakeholders understand the project and its effects.

Seed system analysis

To make sure constraints in the seed system supply of nutrition-dense crops can be better addressed, the clusters conducted a seed systems analysis using key informant interviews. Results so far identify the following weaknesses of the seed systems of nutrition-dense crops:

- Lack of small size seed packaging for imported vegetable seed;
- High cost, low quality and few local seed suppliers;
- Lack of knowledge in handling of seed (transmission of diseases);
- Lack of trust between farmers and traders;
- Weak collaboration between farmers, development agents (DAs), agri-sectors, cooperatives and suppliers;
- Lack of communication between farmers and BoA as a supplier of vegetable seeds;
- The low popularity of green leafy vegetables seed by the farmers and BoA.

Integrated soil fertility management

Integrated Soil Fertility Management (ISFM) formed an integral part of the nutrient sensitive agriculture technologies that have been and are being developed, tested and demonstrated in CANAG through for instance:

- The use of appropriate varieties from the Agriculture Research System;
- The right timing and practice of land preparation, planting, weeding, (mineral) fertilizer application, irrigation, pest and disease control, harvesting, crop rotation and intercropping (sound agronomic practices); and
- The production and application of compost, farmyard manure, green manure to maintain or improve soil fertility; and
- Approaches to address the constraints faced by (especially female) farmers in CASCAPE in the production of home gardens.

7 Major challenges, opportunities, lessons learnt and way forward

7.1 Major challenges

In 2018, there were challenges that were common to all BENEFIT programmes and also specific to each of the programme that affected the implementation of planned activities. The most important challenges:

- **The fragile peace and security situation that prevailed in the country:** this has affected the extent of follow up of implemented activities, organization of planned capacity building activities esp. for the direct beneficiaries, and also engagement at higher level;
- **Prevailing climate change challenges:** these were reflected in the form of pest and disease incidence and unpredictable weather condition (drought, floods, frost) esp. for implemented activities related with testing and validation;
- **The frequent staff turnover including higher officials all levels (federal, regional, zonal and woreda levels):** this has limited the timely implementation of planned activities esp. those related with policy engagements;
- **The prevailing limitation of capacity/understanding of partners and beneficiaries to perform as expected:** these were related to, for instance (i) failure to understand EGS production & supply operation problems by the actors and hence try to take actions focusing on treating the symptoms not to cure the core problem, this has resulted in shortage of quality early generation seed especially for pulses and oil crops, (ii) managerial and marketing skill gaps of SPCs and PSPs, which has limited investment in seed business innovations; (iii) the limited supply compared to entered contracts by farmers and commercial farms through cooperatives and unions to agro-industries (FAFFA, Alema Koudijs Feed);
- **Huge mismatch between domestic and international prices of agricultural commodities that are exported:** this has reduced the possibility facilitation of market linkages in a sustainable manner. The inflated domestic market price is as the result of the fierce competition of exporters to earn foreign currency;
- **Weak linkage with the national research systems and technology suppliers:** this has limited accessing required technologies for testing and validation. For instance, the planned collaboration on faba bean value chain development was not fully implemented due to the shortage of the EGS of demanded varieties from research, the plans of validating the target labour saving technologies were not implemented due to the challenge to access the suggested labour saving technologies from the research; the adoption of row planting for sesame was hindered due to the lack of supplier for row planters etc;
- **Challenges to ensure the participation of relevant policy makers in different events:** the attendance of relevant higher level policy makers to different events (workshops, seminars, field days, stakeholders' platforms etc) was limited as they often delegate experts with limited power to make policy decisions. Most of the platforms organized to deliberate on the challenges of respective sectors (seed, aquaculture, species, pulses, poultry) managed to engage all relevant stakeholders but there was limitation in the participation of high level policy makers who can facilitate to address policy related issues;
- **Challenges related with collaboration for synergy within BENEFIT:** Though there is considerable improvement in the extent of collaboration, the overall joint engagement is still low compared to the program specific activities. The extent of M&E on collaborative activities is still left for PCU, while equal attention should have been given by respective programs;
- **The moderate adoption of demonstrated evidences of BENEFIT Partnership:** Though the different BENEFIT partnership programmes have demonstrated different evidences (good agricultural practices, validated technologies, financial literacy, policy options etc), some of these evidences require further engagement with relevant stakeholders to ensure their full adoption and sustainable utilization.

7.2 Opportunities

The main opportunities that prevailed in 2018 were related with (i) increased interest of existing and emerging new initiatives to collaborate, (ii) the increased commitment of the government for engagement based on evidences, (iii) the increased visibility and recognition to the BENEFIT Partnership programme by stakeholders including policy makers, and (iv) the gradual openness and the increased interest of Dutch private sector to invest in Ethiopia.

- **Increased interest of existing and emerging new initiatives to collaborate:** there is increased interested to adapt BENEFIT demonstrated evidences in some of the initiatives like ACC, IAIPs. Similarly, there is high interest of other initiatives to collaborating in scaling BENEFIT demonstrated evidence like ATA, AGP, PSNP etc. This is a very good opportunity for synergy in scaling;
- **Increased commitment of the government for engagement based on evidences:** The MoA and other public organs are showing increased attention in ensuring the transformation of the different sectors including seed, extension approach, functioning of stakeholders' platforms etc. In this regard, the BENEFIT partnership programme has become active participant and some cases plays lead role in the process. For instance, the design of the national seed sector transformation agenda was led by BENEFIT ISSD;
- **Increased visibility and recognition to BENEFIT Partnership:** This has facilitated continuous engagement with relevant stakeholders including policy makers, which is important for better influence and wider impact of the BENEFIT partnership efforts. Senior staff of BENEFIT partnership are invited to be different engagements and taskforces. For instance, three of the BENEFIT Partnership staff are members of the National Seed Advisory Council;
- **The gradual openness and the increased interest of Dutch private sector to invest in Ethiopia:** this has helped (will help) in facilitating business linkages of domestic actors with Dutch private actors, which is expected to enhance private investment. For instance, the approval of PVP law is expected to serve as grantee for international seed companies to invest in Ethiopia and also may encourage domestic private sector development through business relations;
- **The embedding of senior experts:** in the MoA for issues related to seed (ISSD), extension (CASCAPE) and sesame (SBN) greatly assists uptake of validated evidences and policy influencing.

7.3 Key lessons learnt and the way forward

The general key lessons learnt and the way forward for BENEFIT and its programmes were:

- Working with relevant partners enhances the smooth implementation of planned activities and achievement for adequate impact. Thus, further engagement of relevant stakeholders and partners will be given due attention;
- Stakeholders' platform meetings are crucial for availing and maintaining sustainable information exchange among actors of the different subsectors and also to address emerging both policy and development issues. Accordingly, mechanisms for sustainability of the functioning of established platforms will be given due attention in 2019 planning;
- All rounded capacity development for smallholder farmers is very crucial including finance management. Due focus will be given to strengthen the capacity of smallholder farmers in financial management through institutionalized financial literacy training;
- Documentation of demonstrated evidences as a tool for proper engagement with policy makers and development practitioners is very crucial. Accordingly, due attention will be given to document properly the demonstrated evidences of BENEFIT programmes for engagement;
- The MTR highlighted some issues that can be improved such as increasing the collaboration in the partnership, focus on institutional embedding and developing a transformative vision how to contribute to a sustainable agriculture sector in Ethiopia;
- The programme specific lessons learned in 2018 and their implications for 2019 planning are summarized in Table 2.

Table 2 *Lessons learnt and implications for 2019*

Programme	Key lessons learnt in 2018	Implication for 2019
ISSD	Need for continuous facilitation of planning for EGS production and supply to address shortage of EGS	Strengthening public-private partnership and joint planning/contract in the production and marketing of early generation seed
	Investment in PVS and CS created demand for new, improved and adapted varieties	Facilitate the scaling up of these evidences along with institutionalization of the approaches
	Gender mainstreaming and inclusion of women variety selection criteria are found to be a powerful tool	
	Small seed pack innovation enables seed companies to reach many more farmers	
	Strong internal organization and management is the most critical success factor for seed producers	Further capacitate seed producers
	Closer engagement with MoA enables mainstreaming of ISSD evidences	Facilitate the development of national plan targeting in implementation of the developed seed sector transformation agenda
CASCADE	The success in best – fit practice validation and testing requires institutionalization to ensure sustainable impact	Ensuring the, institutionalisation of programme approach and best fit practices into the national research and extension system
	Alignment and close collaboration with national and regional research and extension partners facilitate uptake of approaches and results	
ENTAG	Stakeholders’ platforms are found to facilitate market linkages playing as crucial pull factor for improved production	Facilitate the proper operation of the different platforms and their institutionalization for suitability of their function
	B2B plays crucial role in sustainable investment and market linkage in different sectors	Continue in facilitating B2B with due emphasis in business linkages of locals with Dutch private sector
	The technical support and provision of sector based information to new and existing businesses bridge the gap between demand and supply of inputs and outputs	Focus on possible diversification of trade and investment support to more and different companies
	Better achievements were recorded by aligning and collaborating with other development partners	strengthen the partnership with existing and new partners that work on priority subsectors for synergy and scaling
SBN	The application of good agricultural practices (GAPs) in sesame has shown considerable increase in productivity	Facilitate scaling and institutionalized promotion for better adoption of GAPs
	Working with local groups of farmers (local cluster approach) is found to enhance better access to machinery and credit	Facilitate the scaling and institutionalization of local cluster approach
	Local sesame is expensive for product development for both local and/or international markets, and current trading and benefit sharing system does not encourage value chain operators to collaborate and invest	Facilitate policy reforms that enable value chain development and a traceable marketing system including cooperative business development
REALISE	The specificities of the different target areas as assessed by the PRA require design of customized intervention by target	the four pathways of interventions i.e. Practice, seed, capacity development and system innovation will be designed specifically to each of the target areas with possible convergence for wider innovation
PCU	Flexibility and prompt utilization of strategic as well as emerging policy engagement opportunities are continue to be very crucial at BENEFIT Portfolio and also BENEFIT programme levels to better link field activity results with policy	Close follow up of emerging opportunities
	The MTR provided relevant issues to be addressed	Focus on addressing the pertinent issues
	The mainstreaming of gender and nutrition progressed well but the proper documentation of demonstrated evidences for engagement for scaling lagged behind	Continue the mainstreaming of gender and nutrition activities along with due emphasis in documentation of evidences for scaling
	The standardized and centralized administrative services (finance, HR and logistics) provided ensured smooth implementation of planned activities	Continuously improve on execution of these services

8 Enhanced partnership for synergy

The BENEFIT Partnership Coordination Unit (PCU) has been responsible for coordination of the partnership for synergy among BENEFIT programmes mainly through facilitation of:

- Alignment of programmes and their collaboration;
- Collaboration and alignment with other projects and programmes;
- Mainstreaming social inclusion and nutrition, and
- Fostering collaboration in BENEFIT portfolio in terms of (i) BENEFIT portfolio management; (ii) provision of centralized administrative services (Finance, human resource management etc.) to the four BENEFIT programmes; and (iii) communication and use of evidence-based information through an effective M&E system linking the four BENEFIT programmes and other partners.

8.1 Alignment of programmes and collaboration

The facilitation of alignment and collaboration was done through organization of review and planning events, regular reporting, organization of peer to peer meetings, and engagement with EKN.

- **Collaborative activity review and plan development:** The PCU facilitated the development of collaborative activity plans for 2018 through organization two regional review and planning workshops, one for Oromia and SNNPR at Debre Zeit and one for Amhara and Tigray at Mekelle. These workshops also facilitated the possibility of learning among clusters in ensuring better collaboration along with possible collaboration across regions.
- **Regular reporting:** The preparation and submission of regular reports (quarterly finance and annual narrative and finance) was facilitated by the PCU. Programme level reports assisted in tracking progresses made against planned targets of the individual programmes and collaboration among programmes.
- **Management and Coordination teams' performance:** Based on the roles and responsibilities and the transfer of responsibilities, peer to peer meetings were facilitated along with reinforcing coaching trajectory based on the management training of 2017 (hard and soft skills). All programmes and the PCU are on track with regard to transferring management responsibilities from WUR to Ethiopia.
- **Shared learning within BENEFIT:** Regular and timely dissemination of information regarding the BENEFIT Partnership and its programmes was facilitated by the PCU in coordination with the respective programmes. The PCU continued serving as a hub for liaising and communicating with external stakeholders for those issues that are not specific to respective programmes based on the BENEFIT communication strategy. Also well linked to the Management Information System and special study and action research themes.
- **Engagement with EKN:** this was done through meetings to updating progresses and invitation of relevant EKN staff in BENEFIT Partnership engagements with stakeholders including the different workshops and field days organized.

8.2 Collaboration and alignment with other projects and programmes

The PCU facilitated the engagement of BENEFIT programmes with relevant public and private initiatives to ensure effective alignment and synergy. Accordingly, the following activities have been progressing well: (i) joint engagement with the seed sector development of the MoA together with ATA as members of the National Seed Advisory group, (ii) as members of the AGP Technical committee member, ensuring alignment and sharing of experiences of the different BENEFIT programmes, (iii) initiation of collaboration at regional level with MoA-ATA ACCs initiatives.

Facilitation BENEFIT Level policy engagement

The policy level engagements were facilitated in diverse areas. The following policy engagements were the most important ones in the last six months:

- a. Engagement in the development a Proclamation to Provide for Agricultural Production and Marketing Contracts and in its public deliberation. It is expected that it will be enacted in 2019;
- b. Engagement at a Policy Seminar on Agriculture and Rural Development to Facilitate Transformation of the Rural Economy in Ethiopia specifically dealing with Rice industry promotion and Import substitution in Ethiopia;
- c. Facilitation of a consultative meeting on the Import ban of pulses by India and Pakistan from Ethiopia, which has resulted in establishment of a taskforce to address the issue at higher policy makers level;
- d. Engagement in consultative meeting for improved linkage among agricultural Research, extension and higher learning institutes for effective technology generation, validation and transfer. This has resulted in establishment of regular engagement system among members of the national agricultural research system;
- e. Engagement and facilitation of a consultative meeting on challenges and opportunities to ensure self-sufficiency in wheat. Decisions were made on short and long term measures to ensure self-sufficiency along with addressing the burden on foreign currency;
- f. Organization of monthly meeting with the Minister/State Minister of Ministry of Agriculture. Four meetings were organized in 2018, where a number of policy issues and future directions were made.

8.3 Mainstreaming social inclusion & nutrition

2018 was a year with more intense and successful gender and nutrition capacity building activities related with provision of technical support, facilitation and follow-up of gender and nutrition working groups, documentation of gender and nutrition experiences, and national level of networking to ensure experience sharing to wider stakeholders.

a) Technical support in Gender and Nutrition

BENEFIT Programmes staff capacity on gender and nutrition integration was enhanced through various capacity building activities. Most of the nutrition and gender trainings were provided together with stakeholders. All the capacity building activities on gender and nutrition were followed by action plan development and most of the action plans have been implemented in the reporting year. The topics of the trainings provided were: i) training on gender and nutrition linkage, which also covered the refinement/finalization of the design of successful nutrition and gender project called CASCAPE Nutrition and Gender (CANAG), ii) familiarization of gender analysis tools, iii) gender mainstreaming in agricultural research, and iv) nutrition sensitive agriculture training for researchers.

Awareness creation on how to prevent and combat sexual harassment and inappropriate behaviour at work place has been started based on the existing BENEFIT Portfolio HRM policy and EKN direction.

b) Facilitation and follow-up of gender and nutrition working group

Gender and Nutrition working group meetings conducted in 2018 allow gender and nutrition experts a biannual opportunity to learn from one another and incorporate new knowledge into their programmes, including informing the 2019 plans. To evaluate the successfulness of the working group from the participants' perspective, Survey Monkey was used to collect anonymous data from the team. The survey found that the gender and nutrition working group creates link to a great extent (60%) among gender and nutrition practitioners and provides an opportunity to share experiences to a great extent (80%) from the different programmes under BENEFIT.

c) Documentation of gender and nutrition experiences in BENEFIT

In the reporting year, documenting scalable experiences of gender and nutrition integration in agriculture projects was major focus for gender and nutrition team. In consultation with gender and nutrition experts of BENEFIT programmes, some topics were identified. Two papers had been written, on women in seed storage, which focus on how to improve the women farmers' storage and

management practices. The paper shows how the project can be further scale up in similar areas, particularly in areas where farmers have very small amount of land and rely in retaining own seed for next planting season. A second paper on gender mainstreaming experience of the BENEFIT Partnership has been written.

d) National level networking

Taking lessons from 2017 gender and nutrition experience, it was found out that engaging the national level gender and nutrition stakeholders is very crucial for institutional buy-in and policy uptake, especially as the project enters its final year. In 2018, an effort was made to better network and collaborates with other gender and nutrition stakeholders, which will continue in 2019. Materials shared during the meetings, were shared with colleagues and management in BENEFIT and on the other hand lessons which are gained from the national level networks has been adopted and applied to BENEFIT programmes.

8.4 Fostering collaboration in BENEFIT portfolio

8.4.1 BENEFIT portfolio management

The management meetings held in 2018 were advisory board meeting, BENEFIT Portfolio meetings, managers, and coordinators' meetings.

- **Mid-term review:** the mid-term review was conducted in the first half of 2018, concluded that the four programmes are on track to achieve most of its end targets. Its results in terms of reach and creating an enabling environment are likely to exceed the original expectations. The business case of having the four programmes in one partnership needs more convincing evidence. The management of the partnership has been more complex than expected and collaboration on the ground is still relatively small compared to the full scope of the individual programmes. For the remaining period of this phase, the review team recommended to:
 - Intensify collaboration on common challenges such as the strengthening of platforms and associations, validation of seed, scaling innovations, gender and nutrition mainstreaming and monitoring & evaluation.
 - Further emphasize the institutional embedding of the most valuable innovations.
 - To have a more transformative impact, consider a future vision of Ethiopia's agricultural sector and avoid working on single issues and isolated solutions. Think cross-commodity and work in multi-disciplinary teams.
 - Continued focus on institutional embedding could promote wider scale impact and a sound exit strategy.

The recommendations of the mid-term review have been incorporated as much as possible already in 2018, this will continue in the remaining period of the BENEFIT Partnership;

- **Advisory Board:** Within the overall management of BENEFIT partnership, the PCU facilitated organization of the Advisory Board meeting. The outcome of the meeting as overall directions for the 2019 planning were minuted to ensure further follow up by the overall BENEFIT Management. The key directions provided were (i) the need to emphasis on institutional embedding of the demonstrated evidences by the different BENEFIT programmes in 2019, (ii) engage with the dynamism happing in the country esp. with the new officials to explore new opportunities and make adjustments in the implementation plan, and (iii) engage with EKN for possible extension of BENEFIT Programmes to further facilitate the transformation of the sector esp. in the area of seed sector development, technology testing, validation and scaling, market linkages especially to support the different public initiatives including the ACCs and IAIPs;
- **Extended management meeting:** this was held in the presence of programme managers, coordinators and regional cluster managers of the different programmes. Following the discussion on the progress made by respective programmes, key decisions were made. These were (i) the need to ensure effective collaboration to address the key challenges identified in the MTR including the institutionalization of priority evidences (access to finance, stakeholder platforms, priority value chains) along with allocation of 5 to 10% of the respective programme's budget for collaborative

activities, and (ii) recognition to the challenge faced due to the difficulty to open independent BENEFIT account with partner organizations;

- **BENEFIT portfolio board meeting:** this was held in the presence of programme managers and coordinators, targeting a follow up discussion on directions made during the advisory board and extended management meetings. Accordingly, the decisions were made: (i) in relation to the advisory board meeting it was agreed to ensure the presence of all board members and not to accept delegates, sharing of all the relevant documents ahead of time, and ensuring the facilitation of the meeting to be led by BENEFIT, (ii) regarding strengthening collaboration among BENEFIT programmes, it was agreed to allocate budget for collaboration not less than 5% of the programme budget, (iii) 2019 activities to focus on institutionalization and strategic high level engagement along with proper documentation of demonstrated evidences, and (iv) with regards to the preparation for post 2019, it was agreed to develop a working document to be shared with EKN, and to explore the required no-cost extension to ensure the proper completion of activities that are based on 2019 production season.
- **Management & coordination meetings:** Regular meetings were held with a focus on progress made in collaborative activities and to ensure the smooth implementation of planned activities and creation of synergy.

8.4.2 Finance and administration

One of the key sources of synergy for collaboration within the BENEFIT Partnership was having a centralized finance and administration system. Accordingly, appropriate support functions related with (i) financial management, (ii) human resource management, (iii) procurement, and (iv) pooled resource use facilitation were provided in 2018. The overall achievements and challenges faced are presented for each of the functions below:

- a. Financial management:** As per the approved BENEFIT financial management guide put in place in 2016 and overall accounting system, all finance related activities were performed centrally for all BENEFIT programmes and their partners. The activities include (i) financial demand projection, (ii) facilitation of payments and preparation of associated financial documents including settlement, (iii) regular financial reporting, (iv) contract management, (v) salary preparation and payment, (vi) audit facilitation, and (vii) financial monitoring, support and advice on financial management and compliance requirements of the partners for their fund transfer, as well as reporting requirements were provided.

In the process, the Wageningen CDI has been backstopping in terms of (i) providing remote and direct advises, (ii) financial reporting, (iii) facilitating transfer of finance, (iv) financial settlement for partners that have direct contract with WCDI, and (v) participation in the development and revision of BENEFIT financial guide.

Though there was not major challenge in financial management process, there were some dalliance on report submission by some partners, and late submission in advance request and lack of appropriate format use. To address these issues, it is planned to have close follow up and support and pre-scheduled financial monitoring in 2019.

- b. Human resource management:**

The human resource management at BENEFIT Partnership level is managed centrally, which is related to recruitment, documentation and personnel file maintenance, insurance handling, staff benefit handling including provident fund and pension contribution management. Follow up and adherence to hosting government rules and regulations and facilitation and support on Visa processing of our partners from Wageningen and others.

- c. Procurement and logistics:**

With the approval of the procurement guide by the BENEFIT portfolio board which becomes operational since 2017, procurements are being made on competitive base. Some of the challenges faced in the process were related with the limited awareness of staff about the regulations and attempt to engage in the procurement activities. Accordingly, it is planned to organize induction and sensitization workshops to create awareness.

d. Facilitation of pool use of required resources and facilities:

The facilitation of the pool use of facilities like office, vehicle and associated services has continued in 2018. In addition, general administrative services have been provided to all programmes.

8.4.3 Monitoring and Evaluation

PCU Monitoring and evaluation target for aligning of the M&E framework, system and strategies of the five programmes by using the concept of keeping individual programmes identity and searching for entry point for collaboration and synergistic effects, supported by facilitation of the documentation of evidences for effectiveness of the collaborations among the portfolio programmes and sharing lessons from collaboration efforts.

2018 was an important year as the externally conducted MTR took place. This was preceded by harvesting significant stories of change from all programmes and partners. The main findings of the MTR have been incorporated into the 2019 annual plan.

The following are major activities and result achieved:

a. Facilitation of BENEFIT M&E framework implementation

- Effective implementation of BENEFIT M&E tools and methods: I) Filmed most significant change was successfully implemented to collect qualitative information from all BENEFIT programmes, made analysis and engage stakeholders to discussed claimed results by BENEFIT programmes. II) Facilitation of implementation of BENEFIT M&E matrix in programme level III) Facilitation of implementation of indicator tracking table to track BENEFIT partnership eight indicators and programme level 106 additional indicators to be used as input for annual report IV) Facilitating stories of change to be reported in annual basses based on the stories of change template provided. This year 20 stories of change were collected in the three BENEFIT pillars V) Three times Joint monitoring reports are documented and monitoring findings communicated to BENEFIT leadership
- Consolidation of bi-annual report of BENEFIT programmes and collaborative activities which is used for internal monitoring purpose. After consolidating the report identified issues were presented to management in collaboration case and facilitated for making it agenda of discussion in different management forum for programme level to inform manager's decision on programme implementation.
- On time provision of technical support/advise based on demand from BENEFIT programmes.
- Providing support for mid-term review team through-out the process which start from participating in screening of the consultants, to facilitating interview with major stakeholders including staffs and organizing validation workshop, and facilitate incorporation of midterm review recommendation in BENEFIT 2019 planning together with BENEFIT management.

b. Facilitation of collaborative activity monitoring

- Facilitating result based collaboration activity planning and reporting by implementing modified version of capitalization experience approach. Implementing this tool together with other tools for effective discussion makes the collaboration planning and reporting process improved.
- Organize and facilitate effectively collaborative activity planning and review workshop using different tools which support effective discussion and critical thinking.
- Facilitation of successful joint monitoring which considers previous year lesson learnt that was need for engaging project management in joint field mission. This year ISSD management plays active role in participating in joint monitoring.
- Documenting lesson learned from collaboration activity implementation; present and make it one topic of discussion in collaborative annual review workshop so that the next year BENEFIT planning would consider the leanings.

8.4.4 Communication

In 2018 budget year, a number of achievements were registered in facilitating internal and external communications towards promoting BENEFIT partnership and its programmes activities; build brand consistency; knowledge sharing and information for effective management. The following are summaries of major activities and outcomes achieved.

a) External communication

- Regularly updated BENEFIT website with regular news, events, and announcements. Over 30 articles were prepared, summarized or compiled and posted over the last 12 months.
- Publications were produced to make information available to relevant stakeholders and the general public. The publications were used to introduce BENEFIT programmes to new partners, promote our brand, publicize our accomplishments, for learning, connect with other development actors etc.
- BENEFIT communication played key role in supporting the MoA National Seed Unit in promoting availability, access and utilization of quality seed in 2018. Following a number of consultative meetings, BENEFIT developed a media strategy that outlines the proposition, approach and methodology to use towards creating an effective and efficient quality seed distribution system. The media strategy was instrumental in guiding the Ministry in messaging and makes informed decision on appropriate media channel to use.

b) Internal Communication

- To have a tangible record of discussions and agreements reached, over 30 key BENEFIT and programmes meeting (internal annual workshops, external stakeholders' workshops, management meetings, platforms meetings, MSC workshop) were attended and documented. These documents are relevant to drive action, inform those who could not attend extract news items for external and internal audience, act as a reference point etc.

The following activities were taken, towards improving the communication skills of staff members

- Communicating data for impact
- How to develop success stories (story telling for impact)
- Prepared photography tips and shared with staff members.

Appendix 1 Stories & Examples

Introduction

For the BENEFIT Partnership, Stories of Change are one of Monitoring and Evaluation tools used to illustrate the results of the various (collaborative) activities. For the year 2017 all programmes shared their stories of change in alignment with the three BENEFIT partnership major result areas: increased quantity and quality of agricultural production, improved market dynamics and improved enabling environment. With the stories we try to capture changes in people lives (such as farmers, service providers, committee members, etc.), reporting improved practices due to project interventions (by government officials, managers, companies, partner organization etc.) and explaining evidence-based contributions to stimulate government bodies for creating an enabling environment in the agricultural sector. This document contains 20 stories of change representing the 5 programmes and the collaborative activities.

Promotion of small seed packs through mini markets opens up opportunities for farmers to access quality seed

Many seed producers in Africa and Ethiopia in particular, still sell seed in large pack sizes, normally 10, 20 or 50 kg or more. Small pack sizes of certified seed of farmer preferred varieties are rarely available and as a result, large numbers of farmers hardly use certified seed. Pack size determines the purchasing capacity and buying behaviour of the smallholder farmers in Hararghe zones where farmers' average land holding size is less than 0.25ha.

To overcome this challenge, ISSD in collaboration with Chercher Oda Bultum Farmers' Cooperative Union organized mini-seed markets to promote small seed packs made available through their member SPCs. During these mini markets 2,000 transparent plastic jars containing 2 kg of quality seed were promoted for three different crops. A total of 223 farmers (105 female) and 26 stakeholders participated. These mini markets enabled farmers to access seed close to their homes in their preferred quantities.

The promotion of small seed packs through seed mini-markets has strengthened the knowledge, skills, and awareness of farmers, *woreda* experts, and SPCs. The small seed packs open up opportunities to address large number of smallholder farmers to access and use quality seed. The mini-markets also allowed farmers to get to know about the availability and sources of different crop varieties and their traits. It also enabled SPCs to understand farmers' needs better and to get market access. As a result of the mini-markets and the promotion of small seed packs, the attitude of farmers towards the use and benefits of quality seed has improved; linkages among government extension workers, service providers and SPCs have been strengthened; and collaboration among government agencies has been fostered to scale the initiative to other *woredas*.

The promotion of small seed packs through seed mini-markets has enhanced the linkages between seed producers and farmers. Farmers got the opportunity to access quality seed in their preferred package sizes at localities near their homes. Moreover, the type and size of the seed packages has added value to seed producers' products and has had an impact on their sales. Seed producers acquired new knowledge on how to sell their seed. In addition,

promotion and information sharing helped farmers to buy the right product. It also revealed that due to its accessibility and affordability there was a high involvement and purchase of quality seed by female farmers during the event. Both the promotion of the small seed packs and the mini-markets highly contributed towards the deployment and adoption of improved varieties by smallholder farmers. The mini-seed market and small seed packs are now being taken up by local and national stakeholders including BoA and CPA, and other development organizations and projects in the region.



My name is Kadir Usman. I am from Oda Baso kebele of Oda Bultum woreda. Before, unions and primary cooperatives supplied seed in large packs which I could not afford. Through the mini-market, I had the opportunity to buy teff and common bean seeds in my preferred quantities, right at the planting time in my village. For me quality seed is about my life”.

Systematization of Early Generation Seed Supply in Ethiopia

Inadequate EGS supply has been a real threat in Ethiopia, and has been identified as one of the systemic bottlenecks in the seed value chain. Although a number of federal and regional EGS suppliers produce seed as it is part of their mandate, early generation seed users are always worried about the limited supply of EGS. Many seed producers don't have access to EGS, which results in poor performance of their seed business. Complaints are common from the users' side, where they report to receive EGS irregularly and often having missed the cropping season. Informal personal negotiations to get EGS is not uncommon, and the success of obtaining the required EGS type and amount largely depends on the willingness of the research centres. At the same time the demand for EGS is increasing.

To address the issue, MoA gave ISSD the mandate to coordinate the national EGS supply through the facilitation of the national EGS planning meetings and the promotion of regional EGS self-sufficiency. ISSD brought together MoA, federal and regional research institutes, public seed enterprises and regional BoA officials and experts, and facilitated a number of workshops with the objective to build consensus on the systematization of EGS supply. To increase accountability, mandates and policies of the different institutes responsible for EGS supply were presented and reviewed. A national EGS planning workshops were conducted, whereby regions first prepared their plans, followed by the federal government's plan to fill the gaps in supply. Contractual agreement templates have been prepared, and are now legally binding. EIAR officials and senior breeders have received feedback on the capacity gaps of the EIAR centres on EGS supply, and seed technology experts have been trained. The performance of the EGS suppliers has been monitored at field level and the EGS self-sufficiency concept for the regional states has been promoted. In this process ISSD has been closely working together with the seed unit and input directorate at MoA, as well as with EIAR and ATA.

As a result of ISSD and its partners' efforts, clarity and consensus have been reached on the different roles and mandates for EGS supply, both at federal and regional level, whereby the agricultural research institutes are responsible for breeder and pre basic seed supply, whilst public seed enterprises and a few selected capable private seed companies are responsible for basic seed supply.



“Previously, we as seed suppliers did not have direct relationships with seed producers. We used to sign contractual agreements with BoA and they received the produced seed whenever they felt comfortable. Thanks to ISSD we are now able to sign contractual agreements directly with seed producers. Through this improved interaction, we have been able to address some of the gaps in EGS production. Now, we can even charge each other in case of any default.” Ato Feleke, EABC seed supply manager.

More than 13 seed producers have been able to sign legal EGS contracts for 12,884 qt of EGS of 18 crops. The direct contractual agreement signed between producers, facilitated by ISSD, has increased the interaction between seed suppliers and users. Seed producers feel, more than ever before, responsible and accountable for the EGS supply. EGS suppliers have indicated they will follow demand driven EGS supply practices to provide adequate EGS.

ISSD has also been promoting the EGS self-sufficiency concept with the regional states and has put the regions in the position to do most of the EGS production themselves. This has helped the regional states to gain self-confidence about their capacity to manage EGS supply, at least for regionally adapted varieties, and they are now aware of their EGS supply capacity.

To conclude, consensus building activities with key stakeholders and policy makers, from the very beginning, are essential to successfully systematize EGS supply and to sustain effective and efficient EGS supply. Also, recognizing and acknowledging the regional states potential in self-sufficiency in EGS supply creates confidence within the regions to address current EGS supply gaps. To further systematize and formally govern the EGS supply, continued attention to promoting regional EGS self-sufficiency is needed with MoA.

ISSD's contributions to the development of a national seed sector transformation agenda

Based upon the realization that there is a need for a more coordinated approach to drive transformation at scale; that we have to take the future vision as the point of departure and not today's problems; that transformation is a complex challenge requiring systems' thinking; and that a bird's eye view on the sector can help in seeing things holistically; ISSD has been facilitating regional core group meetings since 2016, which have been the basis for the facilitation of a series of national events more recently, to discuss and review seed sector transformation in Ethiopia. In April 2018, 28 participants including officials from the Ministry of Agriculture (MoA) and the regional state Bureaus of Agriculture in Amhara, Oromia, SNNPR and Tigray; managers, directors and/or their deputies of regional input regulatory authorities, research institutes, and public seed enterprises; and the Agricultural Transformation Agency (ATA) participated in a workshop on Seed Sector Governance. During the workshop participants develop a shared vision for the transformation of the Ethiopian seed sector; Revise strategies on how best to transform and govern the seed sector in each of the regional states; developed regional seed road maps; and reflected on differentiated roles and responsibilities in governing and coordinating the seed sector. Following this, a workshop was organized in November 2018 to refine and synthesize the recommendations from April's meeting and present it to the newly appointed State Minister of MoA, H.E. Sani Reddi, for further discussion about national seed sector development. The '100 days challenge' posed by the newly installed Prime Minister H.E. Abiy Ahmed created an excellent opportunity for ISSD to contribute to the development of a national seed sector transformation agenda. Over 25 participants representing Ministry of Agriculture (MoA), regional core groups and federal seed unit, research institutes, bureaus of agriculture, seed regulatory bodies, seed enterprises, ATA, and NGOs (GIZ), and ISSD staff attended the workshop in November. In this workshop participants identified, discussed and selected interventions of immediate importance for the national seed sector transformation agenda, and presented in the presence of the state minister. The workshop was a great success in creating a platform to share expertise and experiences, debate over priorities for change, and collectively agree on next step forward to



During a workshop on the development of a national seed sector transformation agenda, MoA State Minister H.E. Sani Reddi noted that *“with the recent change within the Ministry, this is an ideal time to propose a new way of doing things to bring transformational change”*. He proposed that *“ISSD should continue to lead the facilitation process. Private sector (Ethiopian Seed Association) and other relevant actors, such as the national seed advisory group, should be included in the consultation process to answer questions, enrich the recommendations and take ownership. This consultation process should identify key priorities, agree on who (public, private and collaborative), is responsible for what and when, who is going to support who and how?, what government's role is, and identify implementable actions to propose to the government and other responsible entities. We [the government] will review the proposed actions and determine which quick-wins to consider for immediate action and which to plan for long term.”*

bring transformational change. Following the assignment, ISSD led the development of seed sector transformation agenda in which the national seed advisory group and the ESA participated. The national seed sector transformation agenda document was accepted as a guiding document on which future efforts to transform the sector should be based. As a next step it was decided to review the draft seed policy, based on the current developments and the newly developed agenda. MoA organized a group to review the seed policy and has appointed ISSD Ethiopia director Amsalu Ayana as the chair of this task force. Seed sector transformation doesn't happen overnight, it needs a long breath, strategic thinking and seizing the moment. ISSD's project interventions and facilitation work over the last years have been paying off their efforts and have proven to be successful in achieving a more coordinated approach to drive transformation at scale. A clear vision of the future, systems' thinking as a principle and keeping a bird's eye view on the sector and clear responsibility given to a body in coordinating the seed sector will continue to contribute to the transformation of the seed sector in Ethiopia.

Pre-scaling of Improved Potato Practices for food and nutrition security of REALISE households

PSNP households are resource poor subsistence farmers who are vulnerable to environmental and climate shocks. Creating access to best practices for enhanced production and productivity of vulnerable groups in improving their livelihoods is an important intervention of REALISE. The best fit practices of potato promoted by CASCAPE project which package high yielding variety of Belete variety, agronomic practice and crop protection approaches was demonstrated in REALISE target area through irrigation. It is the most productive food crop in terms of yields of edible energy and good quality protein. Nutritionally, the crop is considered to be a well-balanced with a good ratio between protein and calories, and has substantial amounts of vitamins, like vitamin C, minerals, and trace elements. Compared to cereals, potato is a short duration crop that can yield up to 30-35 t/ha within 3-4 months and could be grown in irrigation and rain-fed areas. Due to the versatile nature and importance of the crop, dissemination of improved variety for vulnerable low asset REALISE households is done to improve their food and nutrition security and cash needs.

Potato Pre-scaling is one of the REALISE interventions in Ganta-Afeshum *woreda*. 128 (102 male headed and 26 female headed) beneficiaries have been hosting this demonstration.

Hailay Zeru, 30, is a father of three sons and two daughters. He lives in Ganta Afeshum *woreda*, Bahra Siheta *kebele*. Hailay is a landless PSNP REALISE beneficiary. He shared in 0.5 ha of land from landholders/farmers. Potato Pre-scaling is one of the REALISE interventions in Ganta Afeshum *woreda*.

In December 2018, Hailay hosted potato best practice pre-scaling activities using a three Quintals of basic seed. In addition, he participated in training on potato production to implement all necessary packages of the improved technology. He has planted those seeds at his field using irrigation and he is managing his field very well.

Hailay is hopeful that the intervention would change his life by producing high yielding variety and producing more than two times per year and thereby building resilient livelihoods.



Hailay is managing his field aspiring to see better tomorrow. He said *"I want to be an exemplary farmer to my fellows. I aspire to feed my family, produce potato at least twice per annum and earn more money by selling part of the produce"*.



Asset building of Female Headed Households for resilience building

REALISE target households are resource poor farmers who are vulnerable to recurrent shocks and survive through PSNP transfer and by employing various coping strategies. Vulnerability to shock is particularly severe for female headed households. Asset building and consumption smoothing of these resource poor farmers played a crucial role towards improving their livelihoods and withstand shocks. REALISE intervention on dairy goats has strong linkage with household income, nutrition, and health. Interventions to this end were matched to the skill and experience of beneficiaries in the intervention areas. The dairy goat intervention targets female headed households who are mainly responsible for their day to day management. Dairy goats are an important asset to women, important sources of milk for the family, and easy to manage

Dairy goat is one of the interventions implemented in Mehoni and Ahferom *woredas* with 15 and 20 female headed beneficiaries respectively.

Medhin G/Kidan, 48 years, lives in Ahferom *woreda*. She is a household head and a mother of eight children; three boys and five girls. She was one of the 20 female household heads targeted for the dairy goat intervention by REALISE Mekele cluster. As part of this package demonstration, Medhin has taken training, arranged a shelter and finalized all preparations to benefit from the intervention package components such as forage production, veterinary service and nutrition. Furthermore, she has received two pregnant dairy goats and one buck in December, 2018 through revolving credit. Luckily, within two weeks of receiving her goats, one of them has given birth to twins. For her, this is an encouraging sign that there is hope of a better future for her and her children. She is managing her goats very well and is enthusiastic about the interventions in changing her life.



Medhin, head of household and mother of 8 children has received a dairy goat. She tells: *“by managing my goats well I have the ambition to have a greater number of goats, save more money, send my children to school, feed my family nutritious food, and may be build a new house enough to accommodate my family, and be a model to others”*.

Stacking *hillas* together for multiple benefits

A study conducted in 2014 by SBN shows that the annual economic loss of sesame in northwest Ethiopia (500,000 ha with productivity of 4.5 quintals/ha and selling price of 4000 ETB / quintal) exceeds 1 billion ETB per year. This is more than 40 million euro or 50 million dollar of economic losses. The study revealed that the main losses incurred at farmer's field were during drying practices of sesame plants in *hillas* and when carrying *hillas* from the field to the threshing site which accounts up to 7.39% of the losses together (www.sbnethiopia.org). To reduce these losses, SBN suggested some recommendations, of which one is putting *hillas* together. As integrated in the 20 important steps to double yields and improve the quality of sesame production guide. Stacking harvested sesame and putting it together upright (see the picture) for drying will help reduce post-harvest losses, reduces labour costs and contributes to improve the quality of sesame. This practice has been taken up by some *kebeles*: Lemlem terara area is a case in point.

To share Getayeh and his fellow farmers' experiences to others, SBN organised a field day during the early stage of the sesame production, to show visitors how farmers in the *kebele* have applied improved practices on their adjacent fields. Again, on October 18th 2018, SBN organised another field day in the same *kebele*, this time, to show farmers and professionals from other *woredas* how the *hillas* were put together by farmers. 40 farmers and agricultural experts drawn from Metema, Quara and Tach Armachiho *woredas* participated in the field day.

Farmers explained to participants the benefits of putting *hillas* together and the 20 steps they employed in their farms. Mr. Ashenafi, a model farmer from Tach Armachiho *woreda*, shared his experience on using a plastic sheet to erect the harvested sesame on for drying. He said: "I have been using plastic sheets for *hilla* drying in the last couple of years. I started to use this practice after I have seen the demonstration by SBN." Mr. Ashenafi added: "I collected up to 60 kg sesame from the plastic sheet. Compared to the amount of loss it is not costly to apply plastic sheets."

One of the key take away for the field day participants was the commitment of development agents of the *kebele*, to actively support and encourage farmers to apply the improved

practice. As confirmed by one of the farmers at Lemlem terara *kebele* the main reason for his success is the technical support of the development agents and his commitment to strictly follow their advice.

The application of one of the improved post-harvest management technics- that is stacking *hillas* and collecting together in one specific place helped sesame farmers get multiple benefits. Those farmers who applied this recommendation were able to keep their harvested sesame safe from animal damage and thieves. They also reduce their post-harvest losses which could have occurred during *hilla* transporting for thrashing.



"Previously, I was quite suspicious. I did not follow the advice of agricultural experts. In 2018, I was changed. I followed the advice of our kebele agricultural experts and started to perform farm activities following their advice. I have come to understand that what I should not do is what I used to do. That is what the soil requires." This is a word from Getayeh Hassen, a young farmer, 30, from Lemlem terara *kebele*, Metema *woreda*.

Tripling finance investments in the sesame sector: 22 sesame farmers cooperatives get over 30.5 million ETB loan

Accessibility of agricultural finance in Northwest Ethiopia is a critical problem, particularly for sesame growing areas. Most smallholder farmers (SHFs) are trapped in the vicious circle of depending on informal financial resources which increases production cost and minimizes selling prices, resulting in cash shortage again the next year. Designed as a risk sharing marketing credit scheme, the benefits of the guarantee fund intervention for banks, unions, cooperatives and farmers go far beyond. This can be illustrated by the significant expansion of stakeholders involved last year: from one to three banks, two to three unions, seven to 22 cooperatives and 2,955 to 5,280 farmers. The most direct benefit is access to marketing credit for unions or cooperatives signing a loan agreement with the bank. Indirectly cooperatives benefit from the on lending of unions for marketing credit as well. Secondly, farmers gain through the shorter term loan provision of cooperatives to finance mainly inputs like labour costs during weeding and harvesting activities. Primary cooperatives benefited, apart from receiving output finance to boost marketing and accessing higher volumes of sesame through in kind loan repayments, by attracting new members, increasing internal capital through selling additional shares and establishing improved relationships with their members and unions. Moreover, cooperatives developed loan management capacities because of training sessions provided and experiences gained. Unions benefitted from intensified interaction with cooperatives that enhanced their output marketing activities. Banks benefited from attracting more clients (both cooperatives and individual farmers), increased volume of transactions, earning interest rate profits and above all gathering experience in the agricultural sector. One of the most important objectives of the banks to participate is to satisfy agricultural shareholders through improving their reputation among farmers. The experienced benefits of previous years convinced banks to: join the intervention, triple the loan amount provision to farmer unions and cooperatives and bear a larger percentage of the risk. Important factors to ensure success are several risk mitigation measures. These include a thorough assessment for the selection of beneficiaries, loan product adjustments like phased disbursements, capacity building through financial literacy and loan management training and continuous support and monitoring during the production season.

Challenges that remain are: timely distribution of loans up to the farmer level, banks sharing implementation and loan monitoring responsibilities and beneficiaries to fulfil the administrative and documentation requirements in the loan application. Capacity building remains necessary at all levels: financial literacy for farmers including the promotion of a repayment and saving culture, loan and marketing management for cooperatives, financial and business development for unions as well as strengthening membership relations across all levels. Equally, there are improvements to be made from the banks side: financial product development, monitoring in the field, providing customer services and improving sector understanding. Financing the agricultural sector and sesame specifically is feasible. Farmer organizations and farmers are very happy with alternatives to informal financial resources, showing a high commitment to repay. To maintain the intervention, long term sustainable relationships need to be built through saving promotion and capitalization improvements. There will be more difficult seasons in the future and both parties need to contribute to overcome them. Banks need to be willing to invest in financial and humanitarian resources to provide support and monitoring and evaluation tasks on the ground. Unions and cooperatives need to strengthen their membership relations to stimulate economic participation and marketing activities that improve profitability. Opening the eyes of stakeholders on the benefits and potential of financing the sesame sector has proven to be a valuable first step in this direction.



The guarantee fund intervention builds marketing linkage and enhances members economic participation and profitability of both the union and cooperatives.”

Desalegn Legesse, Setit Union Manager

Improving nutrition and generating additional income through home gardening

In Northwest Ethiopia, though farmers do have large backyards near their houses, enough water resources, and family labour, they do not have the culture of growing vegetables and fruits. This is mainly due to lack of awareness and shortage of quality seeds. The following experience of the two farmers from two different woredas shows that farmers can get multiple benefits by practicing gardening in their backyards.

Mr. Gashaw Mesafent, from Dansha Tsegdea *woreda*, leads his life by producing crops during the rainy season. He has never thought of producing vegetables on the piece of land by using the pond water in his homestead. After receiving training and having improved seeds (ladies finger, watermelon, lettuce, and Swiss chard), Mr. Gashaw planted different vegetables in his home garden and got a good result. Gashaw plans to continue with the home garden activity and use other modern water pumps in the coming year. Similarly, Miss Zewudie Adane, is from Mender 6,7,8 Metema *woreda* who earns a meagre income from her small land on which she cultivates once a year. Next to that, she has a small piece of land at her compound which is almost idle the whole time. In 2016, she tried to plant some trees together with her son, which did not grow well because of poor management and the high temperature in the area.



Mr. Gashaw explained: *“The training helped me to have important information about the importance of home garden and the nutritional benefit of different crops. I strictly followed what I have learned and prepared the land together with my family. My wife and my children supported me during planting, watering and overall management. We harvested fresh vegetable from our garden not only for our consumption but also for selling to my neighbours at a reasonable price. We got a good price from the ladies finger.”*

In 2018, Miss Zewudie received theoretical and practical training on home gardening, organised by the *woreda* Office of Agriculture and SBN. This enabled her to produce different vegetables and fruits and helped her family to change their food consumption habits. The family started to consume vegetables in addition to the cereals they take almost on a regular basis.

Home gardening not only helps farmers to consume different foods which can improve their families’ nutritional status, but it can also help them generate income to support their family. Experiences from different parts of the world show that home gardening specifically improves the micronutrient status of women and children and contributes to poverty reduction. It can also serve as means to manage the dryness of the area and live in an eco-friendly surrounding. The vegetables and fruits make the compound green which somehow changes the temperature and the view. Building upon the success of the home garden pilot, SBN in collaboration with Metema *woreda* Office of Agriculture, organised a demonstration of recipe preparations.

About 50 individuals including farmers, development agents, and health extension workers observed the food preparation from vegetables and pulse crops. Before the recipe demonstration and testing, participants visited home gardens of three farmers in Mender 6,7,8, where vegetables such as tomato, green pepper, Swiss chard, lettuce, lady’s finger, sweet potato and cucumber and fruits such as mango, banana, lemon and papaya are grown. Women farmers, including Miss Zewdie, mentioned that the training they received on seedling preparation and the support from *Woreda* Office of Agriculture and SBN in accessing the vegetable seeds helped them grow different vegetables and fruits in their garden. Following the home garden visit, participants attended the demonstration of prepared food items from vegetables and crops. The recipes demonstrated included: milk, bread, *shiro*, *kolo* and cookies from soya bean; stew and boiled pulses from mung bean; salads and cooked stew from different vegetables, and cookies from sweet potato. After testing different types of foods, participants provided positive feedback on both the vegetable and rotation crop fields and the demonstrated recipes.

Some visitors suggested to farmers to increase the vegetable production area and diversify the types of vegetables. They also suggested that vegetable production activities need to be

intensified by using available water sources and practicing water harvesting. The field visit and recipe demonstration activities were successful creating awareness about vegetable production and sharing experience on home gardening, as well as transferring knowledge about the nutritious value of the demonstrated food items.

Home gardening is proved to be a simple way of producing healthy and nutritious food in a small area and at a lower cost. The piloting made in two kebeles/woredas show successful result which needs to be scaled to other areas. The activities done in this regard- training, availing quality seed, field days and demonstrations helped to raise farmers awareness not only in the farming practice but also in the nutrition and consumption.



“Following the home garden visit, participants attended the demonstration of prepared food items from vegetables and crops.”

High yielding and early maturing sorghum and wheat varieties become a means for food security for female headed household

Although the formal seed system started about six decades ago in Ethiopia, it still remains limited to a few crop varieties. Hence, most of the varieties released by the national agricultural system have not yet been commercialized. Moreover, women farmers have benefited less from the formal seed system and this affects women farmers' access and control of seed and thereby to their food and nutrition security.

One of the BENEFIT programme, ISSD has taken the lesson up from its past achievements and focuses on informal seed system during this phase- the main source of seed for several crops - in which women play a key role. In this third phase programme (2016-2019), the ISSD phase three has been following a "citizen science" approach where citizens (volunteer women and men farmers) participate in crucial activities of the project with the agricultural scientists to jointly address challenges of the seed system and/or contribute to a science. In this way, ISSD puts gender at the centre of its programme and engages 50% of women to evaluate seed, select varieties, and provide feedback. Women are able to participate equally with men in seed demonstration on farm and FTC sites, training, field days, seed fair and seed exhibition.



Wahid has learnt from ISSD programme that using quality seed of improved varieties, improves yield and income. She aspires to exchange the seed she harvested with higher market value food crops. When she compares the new variety with local one, the new variety matures early, is convenient to harvest (short in size) and not affected by wind easily. Livestock also like to eat the stem of the plant."

Wahid Tesfay lives in North Western part of Tigray region, Asgeda Thimlal *woreda*, Dedebeit *kebele*. She is divorced and has five children. Her land size is eight hectare. The *kebele* Agriculture Office selected her to join ISSD programme two years ago. She said, "I never participated in any project activities before." She could be part of this programme because it gave an opportunity to women equally with men. The area where Wahid lives is very hot and frequently affected by drought. The need for improved varieties that tolerates drought is very crucial for food security of her farming community. Therefore, Wahid voluntarily worked with the ISSD project to test three types of draught resistant improved sorghum varieties on her land and select one that she preferred. In addition, she received training about land preparation, fertilizer application and row planting. Also during a farmer to farmer experience exchange program, her field was visited. She planted the three varieties that she received from ISSD two times (in 2017 and 2018). In 2017, she planted the varieties early (in June) and the plant matured early. Unfortunately, when the plant matured there were a lot of birds. So she collected some amount of seed from each variety (16kg, 20kg and 10kg). And she tested again by planting late (in July) to protect the production from birds but she experienced rain shortage and she lost more than half of the production. Despite the challenge, she said, "when she compares the new variety with local one, the new variety matures early, convenient to harvest (short in size) and not affected by wind easily. Also livestock like it." She indicated that she has learnt from this programme that using improved varieties improves productivity and income. She starts applying the agronomic practice to other crops also (like sesame). She also aspires to exchange the seed she harvested with higher market value food crops.

The programme shows that participation in agriculture research intervention improves women's knowledge and skill about agronomic practice. Women can test agricultural technologies, do analysis and provide appropriate recommendations.

High yielding and early maturing wheat variety a means of income for female headed household

Letebirhan Tsehayu lives in central part of Tigray region, Adwa woreda, Endabagerima kebele. She is widow and has five children. Her land size is eight hectare. The kebele Agriculture Development Agent selected her to join ISSD programme two years ago. Her livelihood depends on agriculture. Although the area where Letebirhan lives is mid-altitude, her land size is very small (¼ hectare) and frequently experiences rain shortage. Therefore, she voluntarily participated in ISSD programme two years ago, took training about agronomic practices (land preparation, row planting and fertilizer application) and received seed of three varieties of wheat to test on her small plot of land and choose the variety she preferred.

Accordingly, she said, after she tested two times, she selected the variety, which is productive, disease resistant, early matured and short in size (easy to harvest). She said, she harvested 80 kilos from this variety. She said, her life was entirely depend on productive safety net programme but now she aspires to provide seed to the seed cooperative found around her resident to earn income. She became aware about seed cooperative because of the ISSD. She joined the cooperative without paying membership fee but she is informed that she will start paying the expected fee after she starts providing seed for the cooperative.



Letebirhan said her life was entirely depend on productive safety net programme but now she aspires to provide seed to the seed cooperative found around her resident to earn income.

Aheze Negash lives South Eastern Part of Tigray, Agereselam woreda, Hadinet kebele. She is head of her household and has five children. Her land size is half a hectare.

She joined ISSD project in 2009. She received quality seed of three varieties of barley, took training on land preparation, fertilizer application and row planting, and attended field visits (farmer to farmer experience exchange programme organized by ISSD). She planted two times the three varieties she received from ISSD and she chooses the variety she prefers. She chooses the one which tolerates heavy rain. She said she used to plant many kilos from the local variety but get small amount but she planted small amount from the new variety but collect good result (25 kilo from one of the best varieties) although there was heavy rain during past planting season. She also applied fertilizer as per the recommendation from ISSD and she think that this help her to be productive.

She aspires that when she gets more product, she leave some amount for next planting season and either she will exchange the rest with high value crops like teff and white wheat for household consumption or sell it. The income helps to educate her children.

The programme shows that engaging female headed households in seed intervention can help them to enhance their household food security and income so that their children can get access to education.



Ahza said when she gets more production; she will keep some seed for the next planting season, and either she will exchange the rest with high value crops like teff and white wheat for home consumption or sell it. The income helps to educate her children.

Increasing women membership in cooperative a means to enhance women's access to agricultural trainings and technologies

Although women have significant role in informal seed system of Ethiopia, ISSD identified that the number of women members in local seed business cooperatives is limited (zero) because of the socially given role to women and men in the targeted community. Thus, in order to improve women's membership and leadership role in the local seed business cooperatives, ISSD designed strategies. The strategies include conducting intensive discussions with the cooperative executive committee members, putting increasing women's membership and leadership as one activity in the annual plan of the cooperative and revising the cooperative bylaw. As a result, the number of women members in Fate Muricha Dicha seed business cooperative reached 34 out of 118 total members (until June 2018) from only one member in 2017. And the number of women in another cooperative called Tokidchone (Keffa) reached 15 out of 105 total members (until June 2018) from zero women members in 2017.

Mana Bilate lives in the Southern Nations, Nationalities and Peoples Region (SNNPR), wolayta zone, Damot Tale woreda, Fatena Muruta woreda. She is married and a mother of nine children (six boys and three daughters).



Mana Bilate says: *"Previously, I used to support my husband in farming using my indigenous knowledge but after I became a member of this cooperative, I received trainings about improved agronomic practice. Therefore, I can independently practice agriculture, such as sowing, identifying the good and bad quality seed and the difference between seed and grain."*



Women who joined Fate Muricha Dicha seed business cooperative after the ISSD intervention

She became the member of local seed business cooperative in 2018, called Fate Muruta Dicha Seed Production and Marketing cooperative. She could be a member of the cooperative after ISSD trained the cooperative leaders about gender mainstreaming. The cooperative produce and sell mainly improved wheat seed, which is agroecologically viable, disease resistant and has good market value.

She said, *"previously, I used to support my husband in farming using my indigenous knowledge but after I became a member of this cooperative, I received trainings about improved agronomic practice. Therefore, I can independently practice agriculture, such as sowing, identifying the good and bad quality seed and the difference between seed and grain."* She said, *"Previously, we used to put grain and seed together in one sack, and either we sell or consume or sow from it. But now, after the training, I knew seed has life and needs care so I stop storing crops and seed together. The other thing is I can access machine that can harvest, thresh and clean the seed from cooperative, and that reduces my labour and time."*

To improve women membership and leadership in cooperatives needs intensive work and commitment of programs. Increasing women's membership in cooperatives improves women access to improved agronomic practice, technologies and market. Women can able to practice agriculture confidently with absence of their husband if they are trained and have access to technologies. Using only the indigenous knowledge of women in agricultural production causes production loss in agriculture. We can learn from Mana that she used to put seed and grain together but now she understood the value of quality seed and put seed separately from grain and provide appropriate care for it.

ISSD helps W/ro Sadiya to use seed storage technology from local materials that are easily accessible and low in cost

Women in Harerghe practice different methods of seed storage. The common seed storage practices include: hanging the head of the crop from the roof or trees (Sorghum and Maize), sacks (haricot bean, potato, maize, chick pea, wheat, and sorghum), underground storage pits (Maize, sorghum), and mix with soil (haricot bean). The local materials used in seed storage are: treat the seeds with plant materials/herbs/leaves like Kinchib (*Euphorbia tirucalli*), tobacco, pepper, and eucalyptus); cow dung, animal urine and smoke. Sometimes pesticides are also used to protect seeds from storage pests though such practices of seed storage help to store seeds for certain period of time, they also have some limitations particularly with introduction of improved varieties to the local communities. The main challenges raised related with local seed storage technologies include (i) losses of germination capacity and viability especially when the seed is not properly dried, (ii) un limited availability of hermetic materials locally, (iii) limited knowledge about the required standards to maintain seed quality especially seed moisture before and during storage, and (iv) limited use of recently introduced hermetic technologies. Thus, ISSD has undertaken interventions to improve seed storage and management practices in the Hararghe area, such as training of trainers on post-harvest techniques, technology diffusion through farmers to farmers experience exchange programme and practical demonstration on how to utilize the new technologies.

W/ro Sadiya Ahmed, 40, married, with seven family members lives at Waltane *kebele* of Doba *woreda*, East Hararghe Zone in Oromia National Regional State. She is one of ISSD programme targets. She has developed knowledge and skills of using recycled glass and plastic containers to improve the storage of seed. These containers were easily accessible at minimal cost, robust and could be used repeatedly over a number of years. The containers are glass jars, vegetable oil jerrycans, cans and soft drink / small water bottles. The unique skill that she got from ISSD is how she can make seed storage from local materials that are easily accessible and low in cost. Previously, she was using different methods to store different crops which enabled her protect

the seed from pests and stay for planting. For instance, she stores sorghum and maize seeds under roof by hanging while wheat, common bean and chick pea seeds are stored in locally available sacks. However, most probably the stored seeds were attacked by insects and pests; or it may lose its ability to germinate, perhaps due to high temperature or too much moisture. In addition, she participated in training and awareness creation programs on how to manage a trial, evaluated its performance from (agronomic, yield, food and nutrition value etc.) and select best varieties of her own preference for next planting and exchange. She said “the ISSD programme gives me an alternative of different common bean varieties other than the one I used for long years.”

In general, the project assists her to differentiate varieties that have quality, improves her knowledge about seed and make her confident. It also helps her to know easily accessible and durable tools for seed storage. She participated in seed-variety promotion activities (field days, seed fairs, seed exhibition) aimed at increasing demand for improved or farmer preferred varieties at local level (on farmers plot and FTC sites).



ISSD assists W/ro Sadiya to differentiate varieties that have quality, improves her knowledge about seed and make her confident. It also helps her to know easily accessible and durable seed storage system. She participated on seed-variety promotion activities (field days, seed fairs, seed exhibition) to increase demand for improved or farmer preferred varieties at local level (on farmers plot and FTC sites).

Improved Potato Storage Enables Juhara to use own seed for next planting

W/ro Juhara Adame, 38, married with eight family members lives at Jiru Gamechu *kebele* of Gurawa *woreda*, East Hararge Zone in Oromia National Regional State. She is one of ISSD programme targets and cultivated 0.38 ha farm.

Now the project improves the level of her knowledge and skills on potato seed technologies. In terms of knowledge and skills, she has understood about the importance of quality seed. Now she is confident to talk about seed and can advise and support to my neighbours and relatives farmers on the condition. Even she knows how she can store seed for long time from local materials without losing or damage of the purity of the original seeds. Previously, she said, "I was suffering for many years to access quality seeds for potato and didn't know how to store potato seed safely. For instance for potato seed I used plastic sack for storage. These sack has been easily tore by pest and insects and then the seed used to lose its purity. So it was painful for me." So she used to buy seed from market. "The source of market seed is not known and it may germinate or not. But now thanks to the ISSD project, which makes me aware about quality seed, provided me quality potato seed and thought me how to store it. Currently, I can use potato seed at any time for planting from my store and share for my neighbours also. In general, from the ISSD intervention, I learned about seed and seed related technologies and I'm aware about how to use the seed technologies. I also learned what quality seed means."



W/ro Juhara has understood about the importance of quality seed. She is confident to talk about seed and can advise and support her neighbours and relative farmers on the condition. She knows how she can store seed for long time from local materials without losing or damage of the purity of the original seeds.

The project showed that seed storage and management interventions give relief for women by addressing seed storage challenges and it has improved women's knowledge and skills, improved confidence of women to talk about seed, provide advice and support to their neighbours and relatives.

Development of the Strategic Plan for Implementation of Disease Prevention and control in the commercial poultry sector of Ethiopia

Ethiopia is considered as one of the most rapidly growing country in the world with a growing population and GDP increasing about 10% per year. To meet the demand of its growing population, the Government of Ethiopia has expressed its wish to increase the agricultural production, issued in the growth and transformation plans (GTP I(2010-2015) and GTP II(2015-2020)). This implies that in order to achieve an increased and sustainable poultry industry, the transition towards a more industrial form of farming is necessary, to close the future gap in total meat consumption demand. Therefore, the resulting substantial increase in number and size of a specialized commercial broiler/layer farms require a coherent strategy and structure for poultry health, disease control and prevention, which is currently not available in Ethiopia.

The Ethiopian Ministry of Agriculture requested ENTAG programme to provide support in developing the strategic plan to strengthen poultry health, disease control and prevention in Ethiopia. Thus, ENTAG called for the services of GD Animal Health Service Centre in The Netherlands, to develop the strategic plan in collaboration with ENTAG, along with the input



The substantial increase in number and size of a specialized commercial broiler/layer farms with the absence of a strategic approach towards poultry health and disease control/prevention puts the entire poultry sector in jeopardy.

For this reason, ENTAG programme has provided technical support in developing the strategic plan to strengthen poultry health, disease control and prevention in Ethiopia which is now handed over to the Ministry of Agriculture and Livestock Resources and awaiting implementation.



and reflections of relevant Ethiopian stakeholders. The main objective of the strategic plan was to analyse the current situation, identify the gaps regarding poultry health care and to advice on how to strengthen and improve the institutional poultry health and disease control in Ethiopia as its already mentioned in the different roadmaps. After a number of workshops, discussions and analysis, the newly developed document entitled "*A strategic plan for implementation of disease prevention and control in commercial poultry*" has finally been completed and handed over to the State Minister of Livestock in the presence of the ENTAG management team and the Ministry of Agriculture and Livestock Resources.

The strategic plan is set with proposed pilot projects and generally entails the organization of poultry industry (farm locations and flock registration), poultry health management, organization of epidemiological data, surveillance programs for specific poultry diseases, monitoring the effect of disease control, monitoring of intervention programs, capacity building and organization of poultry diagnostics along the value chain. In addition, it also involves the collaboration of the governmental and private stakeholders.

The development and growth of the commercial poultry industry indirectly means that the risk for dissemination of poultry disease increases. Currently, the commercial poultry industry of Ethiopia is growing and there is no clear strategy to prevent/control poultry diseases if any case of potential outbreaks occur. If such an event occurs, then it will affect the industry greatly, especially economically. Therefore, ENTAGs intervention in the development of this strategic plan for implementation of disease prevention and control in commercial poultry is a perfect starting point to ensure disease prevention and control in Ethiopia in case any potential outbreaks/diseases occur.

Mung bean: a new introduction to the food menu of Maiwoini kebele farmers

In 2016, CASCAPE project conducted a trial in four *kebeles* of Kafta Humera *woreda*. to evaluate the influence of crop rotation on soil fertility and yield of sesame aiming at identifying the best rotation crops for sesame dominated farming system. Maiwoini was one of the *kebeles*. Mung bean was planted for the first time by four farmers in the *kebele*. There was no experience of consuming this crop locally. However, Ato Kiros Zibelo and Ato Shishay Wondm started consuming mung bean by preparing *shiro* and whole grain *wot*. They also started selling their produce to the local community and mung bean started replacing the legumes produced in other places.

Ato Kiros Zibelo and Ato Shishay Wondm are residents of Maiwoini *kebele* of Kafta Humera *woreda* of Tigray region. They were growing sesame as commercial crop and sorghum as staple food in their farmlands. They hosted the crop rotation trial conducted by CASCAPE in their *kebele* and planted mung bean. Mung bean was a new crop to Maiwoini *kebele* and to these farmers too. Ato Kiros Zibelo said, "CASCAPE project brought us mung bean seed and the DAs gave us on site training when to plant and how to manage it. My wife tried to prepare wholegrain *wot* (similar to what is called *Difn misr wot*) and we found it delicious. Gradually, she prepared '*shiro*' from mung bean and my family liked it. Finally, we replaced the legumes we used to purchase with mung bean. Especially during the rainy season, we used to purchase legumes for our daily labourers. Now, we are serving mung bean to the daily labourers and hence we are saving money. We are also selling mung bean to our neighbours." Similarly, Ato Shishay Wondm said "sometime it is very difficult to get legumes in the local market and legumes are brought from other areas. So, we had serious legume dish shortage before the introduction of mung bean. Mung bean has solved that problem. Currently, mung bean is the only plant protein source produced in Maiwoini *kebele*." These two farmers have assured that mung bean has improved the nutrition status of their family.

CASCAPE project conducted crop rotation trial in Kafta Humera *woreda* to identify the best rotation crops for sesame. Mung bean, soybean and sorghum were the test commodities in the trial with sesame as standard check. Although new to the area, mung bean was included in the food menu of the farmers as legume dish. The

trial has also concluded that mung bean is the best rotation crop for sesame. Sesame planted after mung bean gave higher yield. Now, the number of farmers growing mung bean in the *kebele* has reached more than 50.



"The crops we used to grow in our kebele were sesame and sorghum only. As a cash crop, we supply all our sesame produce to the market while sorghum is our staple food. We used to purchase staffs for preparing wot (legume dish eaten with injera) as there were no legume crops growing in our area. After CASCAPE introduced mung bean, we started producing shiro from this commodity. We also prepare wholegrain wot from mung bean. So, mung bean has become part of our diet and we are also saving money as the legumes produced in other places are expensive in our area."

Unlocking the potential of wheat farmers in Omonada district, Southwestern Ethiopia

Chelekleka Donga *kebele* is located in the center of Omonada woreda about 84 km from the zonal capital of Jimma town. Driving up a steep narrow dirt road, you see small plots of the lush wheat fields alongside small plots of barley, teff and faba beans. In just three years, with close support from CASCAPE and its partners, farmers are using new improved varieties and applying new agronomic practices, unlocking the great potential and promising resources in the area. In spite of wheat relevance and its suitability to the area, because of fragmented land use and traditional farming practices, wheat productivity in the areas has always been low.

Alifya Abasharaf, a 35 year-old mother of five living in a very traditional farming system in Omonada district in south western Ethiopia is beneficiary of CASCAPE-JU. With the support of the project, Alifya improved her livelihoods by transforming her small plots of land into income producing businesses. As gender being the central part of CASCAPE, as a result Alifya was selected to be one of the two women to be involved in testing of improved wheat varieties. Alifya remembers how it used to be prior to CASCAPE intervention. Sitting on a wooden stool in front of her cleanly kept front yard, Alifya remembers how it used to be prior to CASCAPE intervention. *"Farming is what we inherited. We had no academic background but followed what we learned from our parents. From 0.125ha of land, I used to get a maximum of 2quintals of*



Alifya Abasharaf, a 35 year-old mother of five: *"Using the new variety and the new techniques, I have doubled my yield. Last year, 2017, I grew wheat on 2250m² of my land and got 12quintals (54qt/ha). We kept what we needed for home and sold the rest as seed or exchanged them with grain. With the money I got, I bought fertilizer, things I needed at home and a heifer from a farmer I met during one of the field days organized to showcase the new variety and practice. No more selling my livestock."*

wheat, which was just enough to feed my family. And most of the time, we had to sell our livestock or products from them such as cheese and butter to buy other things needed at home – things like sugar, salt, cloth etc. and we always struggled to buy inputs for the next season", Alifya said.

CASCAPE's intervention to improve wheat production in Omonada woreda started in 2016. As all CASCAPE interventions, it started with understanding the specific needs of the farmers, the potential in the area and finding innovative solutions using participatory, bottom up planning. The woreda was selected for its high potential for producing surplus wheat with close consultation with government offices.

Leveraging CASCAPE years of experience on wheat and a thorough understanding of specific problems farmers face, the programme started identifying, testing and verifying best practices to better understand which wheat variety and agricultural practice works best in the area. This phase involves local bureaus of agriculture, regional research institutes and farmer research groups. Seven farmers willing to learn and share new way of doing things with the surrounding farmers were selected for demonstration trial. The programme provided six improved varieties from the Ethiopian Seed Enterprise, one local variety and necessary inputs to start the testing and adaptation trail on each farmer's 10m x 10m (100sqm) plot.

In 2017, the programme provided 17kg of quality seed to each farmer and gave new agronomic technique training on 10 farmer plots where they practically learned how to apply the methods on their own 0.125ha of land.

Today, Chelekleka Donga PA farmers' perception about growing food to sell is changing fast. She said, *"one thing I have learned is with the right variety, right agronomic practice, and support from the right expert we can produce much more. Now, we know how to use our land and had we done this before our lives would have been so different".*

The process that CASCAPE follows-bottom up, stakeholder involvement coupled with social inclusion approach into consideration helped the innovation to be taken up, be successful and multiply with the farming community and change their livelihood.

Transforming the Ethiopian Seed Spice Sub-Sector

To bloom the Ethiopian export trade and private sector development; ENTAG programme has been working to address market constraints of the spice sectors through creating better market linkage, its consecutive capacity building trainings provided across the value chain actors, platform meetings and technical advice. As a result in 2018 ENTAG helped three private companies, two unions and 25 cooperatives to introduce modern seed spices production technologies and out-grower scheme business model on 120 ha of land in Bale and Gondor along with creating better new market linkage with Israel, Pakistan, Bangladesh and India buyers for 500Mt coriander and 158MT of black cumin which expected to be sold in year 2019. From the trail 38Mt black cumin order to Israel in 2018 one private export company generated ETB\$1.8 million birr.

The Ethiopian seed spices sub-sector in the country in general and especially in Gondor and Bale was characterized by use of poor yielding varieties, use of tradition production technologies and agronomic practices, with long value chain/ illegal brokers, adulteration and quality deterioration, improper post-harvest handling and high market volatility. Subsequently the export of Ethiopian seed spices never passed USD\$ 2.6 million in value and the volume is also limited to 1600MT due to less quality and price competitiveness in the international market. As a result the country did not benefit from the impended enormous potential of seed spices (black cumin, bishop weeds, coriander and fenugreek) for income diversification of smallholder farmers, foreign currency earning and alleviation of poverty. Besides, the lack of sustainable and better market access lead to unsustainable production of seed spices in the country. This was the point where the ENTAG intervention has started to sustain the Ethiopian seed spice production and improve its quality and price competitiveness of smallholder farmers based in Bale and Gondor and the private sectors engaged in the seed spice sector.

To transform the seed spice sub-sector of the country, ENTAG organised capacity building training on improved seed spices production technologies and marketing in Bale and Gondor in collaboration with ECTSA, GARC and SARC for exporters, commercial investors, traders, DA's, model farmers, cooperative and union leaders followed by introduction of pilot out-grower

scheme business scheme and providing better and new market linkages support with buyers based in Israel, Pakistan, Bangladesh and India.

These interventions of the ENTAG programme has helped 160 smallholder farmers in Bale and Gondor to get out-grower scheme business model support from commercial farmer and exporter to get pre-finance for purchasing of HYV varieties, adoption of modern agronomic practices and improved harvesting methods and secure better market. The exporters were also secured with better quality products at an international competitive export price and export market opportunities for 500MT of coriander and 120MT of black cumin for next year in addition to the trial order exported and generated ETB\$1.8 million birr in this year.

The major conclusion of this story is the fact that inclusive trade support with technical capacity building training on production and marketing, both forward and backward integration and active involvement of both private and government actors across the whole value chain is very crucial for alleviation of the major bottlenecks of the seed spice sub-sector in particular and the spice sector in general. Thus such interventions have to be also strengthened and need to be scaled out to other spices, herbs and aromatic products in the coming years of ENTAG program.



Due to ENTAG and its public and private stakeholders collaboration efforts the efficiency of private companies in working with smallholder farmers improved, value chain shortened, quality and yield improved through the capacity building training provided on improved seed spice production and marketing and adoption of improved production technologies as pilot out-grower scheme on 120 ha of land owned by 160 smallholder farmers. Besides, new export market linkage created to Israel and generated ETB\$1.8 million Birr as trial order.



Appendix 2 Detailed information key performance indicators

In line with the Guideline for reporting results in the thematic area Food and Nutrition security, the four BENEFIT programmes report on the following key performance indicators.

Impact	Improved sustainable food, income, trade and nutrition security of rural households in Ethiopia			
outcome	Pillar 1: Increased quantity and quality of sustainable agricultural production		Pillar 2: Market Dynamics	Pillar 3: Improved enabling environment
outcome indicators	# of farmers reached with increased productivity (ISSD, CASCAPE, SBN, ENTAG, REALISE) (2018) 1.813.946 (2017) 1.740.820 (2016) 910.745	# of hectares of farm land used more efficiently (ISSD, CASCAPE, SBN, REALISE) (2018) 114.998 (2017) 564.858 (2016) 285.452	# of companies with supported plan to invest, trade or provide services (ISSD, SBN, ENTAG) (2018) 1.048 (2017) 260	# of substantial policy changes/ reforms contributed to (ISSD, CASCAPE, SBN, ENTAG) (2018) 19 (2017) 7 (2016) 5
	# of farmers reached with improved access to input markets (ISSD, SBN, REALISE) (2018) 1.388.861 (2017) 1.340.439 (2016) 62.613	# of farmers reached with improved access to output markets (ENTAG) (2018) 4,525 (2017) 1,736		
output	Improved stakeholders capacity in agricultural practices (knowledge and skills)			
output indicators	# of persons reached/ trained with improved technology and skills (ISSD, CASCAPE, SBN, ENTAG, REALISE) (2018) 56.982 (2017) 86.085 (2016) 5.282		# of trained farmers in sustainable agricultural production and practices (ISSD, CASCAPE, SBN, REALISE) (2018) 261.334 (2017) 241.228 (2016) 18.093	

Disaggregated data partnership key performance indicators 2018

Indicator	ISSD	CASCADE	SBN	ENTAG	REALISE	Total 2018
Indicator P1 EKN 1.1: Number of farmers reached with increased productivity (TOTAL)	1,383,276	281,447	138,750	10,034	439	1,813,946
Number of farmers reached with increased productivity (direct)	33,111	141,731	89,112	281	439	264,674
women	9,745	28,346	27,625	30	160	65,906
men	23,366	113,385	61,487	251	279	198,768
under 35	7,162	40,819	25,842	175	90	74,088
over 35	25,949	100,912	63,270	106	349	190,586
% women	29%	20%	31%	11%	36%	25%
% men	71%	80%	69%	89%	64%	75%
% under 35	22%	29%	29%	62%	21%	28%
% over 35	78%	71%	71%	38%	79%	72%
Number of farmers reached with increased productivity (INDirect)	1,350,165	139,716	49,638	9,753	0	1,549,272
Indicator P1 EKN 1.2: Number of hectares of farmland used more eco-efficiently (TOTAL)	1,357	32,299	81,300	0	42	114,998
Indicator P1 EKN 1.3: Number of farmers reached with improved access to input market (TOTAL)	1,383,276	-	5,585	-	-	1,388,861
Number of farmers reached with improved access to input market (DIRECT)	33,111	-	5,585	-	-	38,696
women	9,745	-	1,256	-	-	11,001
men	23,366	-	4,329	-	-	27,695
under 35	7,162	-	0	-	-	7,162
over 35	25,949	-	5,585	-	-	31,534
% women	29%		22%			28%
% men	71%		78%			72%
% under 35	22%		0%			19%
% over 35	78%		100%			81%
Indicator P2 EKN 2.1: Number of companies with support plan to invest, trade or provide service	32	0	6	1,010	-	1,048
Indicator P2 EKN 2.2 :Reached # of farmers with improved access to output markets	-	-	25	4,500	-	4,525
women	-	-	5	900	-	905
men	-	-	20	3600	-	3620
under 35	-	-	0	1297	-	1297
over 35	-	-	25	3203	-	3228
% women			20%	20%		20%
% men			80%	80%		80%
% under 35			0%	29%		29%
% over 35			100%	71%		71%
Indicator P3 EKN 3.1 : Number of substantial policy changes/reforms contributed to	2	7	6	4	0	19

Indicator	ISSD	CASCADE	SBN	ENTAG	REALISE	Total 2018
Indicator EKN O 1.1: Number of persons reached/trained with improved technology and skills (TOTAL)	52,566	1,011	2,741	0	664	56,982
Number of persons reached/trained with improved technology and skills (direct)	21,830	1,011	2,741	-	632	26,214
women	9,447	202	669	-	198	10,516
men	12,383	809	2,072	-	434	15,698
under 35	5,813	291	805	-	101	7,010
over 35	16,017	720	1,936	-	531	19,204
% women	43%	20%	24%		31%	40%
% men	57%	80%	76%		69%	60%
% under 35	27%	29%	29%		16%	27%
% over 35	0%	0%	0%		0%	0%
Indicator EKN O 1.2: Number of trained farmers in sustainable agricultural production & practices (TOTAL)	87,843	-	173,491	-	-	261,334
Number of trained farmers in sustainable agricultural production & practices (direct)	12,974	-	173,491	-	0	186,465
women	5,725	-	51,773	-	0	57,498
men	7,249	-	121,718	-	0	128,967
under 35	3,692	-	56,945	-	0	60,637
over 35	9,282	-	116,546	-	0	125,828
% women	44%		30%			31%
% men	56%		70%			69%
% under 35	28%		33%			33%
% over 35	72%		67%			67%

Partnership key performance indicators 2016, 2017 & 2018

Number of farmers reached with increased productivity (TOTAL)



Number of hectares of farmland used more eco-efficiently (TOTAL)



Number of farmers reached with improved access to input market (TOTAL)



Number of persons reached/trained with improved technology and skills



Number of trained farmers in sustainable agricultural production & practices



Number of companies with support plan to invest, trade or provide service



Number of substantial policy changes/reforms contributed to









Introduction

The Integrated Seed Sector Development programme in Ethiopia (ISSD) works to ensure the sustainable increase of agricultural productivity due to improved access to and use of quality seed of new, improved, and/or farmer preferred varieties by men and women smallholder farmers. Increased availability and use of quality seed; enhanced performance of seed value chains; and an improved enabling environment for the seed sector are outcomes that contribute to this impact. The availability and use of quality seed of new, improved and/or farmers preferred varieties is increased by providing support to informal seed producing groups largely through the deployment of a large number of improved and local varieties; by strengthening seed producer cooperatives (SPCs), private seed producers (PSPs), and public seed enterprises to become more market-oriented in their seed production, marketing and distribution; and by facilitating conditions for Dutch/international seed companies to invest in Ethiopia. By piloting interventions in partnership with stakeholders, ISSD alleviates bottlenecks hampering the performance of seed value chains. Embedding evidence based innovations in regulatory frameworks and putting them into practice, ISSD improves the enabling environment of the seed sector. ISSD operates in four agriculturally important regional states of Ethiopia. Implementing partners of ISSD Ethiopia are Bahir Dar University in Amhara, Haramaya University and Oromia Seed Enterprise in Oromia, Hawassa University in SNNPR and Mekelle University in Tigray. Technical and administrative assistance is delivered by the Wageningen Centre for Development Innovation (WC DI).

Major achievements

- The availability and use of quality seed has improved for 3,491,592 farmers since 2016;
- ISSD strengthened the capacities of 149 SPCs, over 20 PSPs and the four public seed enterprises to increase production and dissemination/marketing of quality seed in 2018;

- The production of quality seed of grains, legumes and oilseeds by ISSD target groups increased 27% in 2018 to a total of 28,353 tonnes;
- Selected target groups produced 5,768 t of seed potato in 2018, which is a staggering 91% increase on the previous year;
- The programme demonstrated 280 varieties to 13,309 smallholder farmers, over half of whom are women, through participatory variety selection (PVS) and crowdsourcing to increase the demand for and availability of new, improved and/or farmer preferred varieties;
- Measured against key performance indicators (KPIs), the performance of PSPs in Oromia (south & west), SNNPR and Tigray increased slightly this past year by 6.2%, 1.4% and 3.3% respectively;
- Similarly, average performance of SPCs in Oromia (south & west) and Tigray also saw modest improvement by 0.6% and 9.1% respectively;
- 94% of audited seed producers recorded profit in 2018;
- 13 SPCs and 1 PSP have obtained certificates of competency (CoCs) in 2018 for seed production and marketing;
- Women have improved access to and use of quality seed of their preference, now comprising 30% of the programme's target groups;
- The representation of women at SPC (sub-)committee level has now reached 15%, 14%, 13%, 12% and 7% in Tigray, Amhara, Oromia (east), SNNPR and Oromia (south & west) respectively, an increase on previous years;
- The total diversity deployed in 2018 is equal to 344 varieties, an increase of 8.5% on 2017;
- ISSD managed to address 14 bottlenecks hampering seed value chain performance in 2018;
- Over 74 linkages between seed producers and input and services including basic seed, agrochemicals, credit, seed inspection and certification and improved post-harvest technologies were strengthened;
- 50 SPCs, 12 unions, 11 PSPs and one public enterprise were linked with basic seed suppliers;
- 51 SPCs, four unions and 10 PSPs were linked to other inputs and services;
- 52 SPCs, two unions and three PSPs were linked to markets for the sale of their quality seed;
- Business opportunities in the Ethiopian seed sector for Enza Zaden and Nunhems-BASF were increased whilst regulatory advice was also given to Bejo, East West Seed, RijkZwaan and Syngenta;
- A high level committee of Dutch companies facilitated by ISSD in consultation with the agricultural counsellor at the Embassy of the Kingdom of the Netherlands (EKN) in Addis Ababa has a regular audience with the Minister of Agriculture;
- At least eight different seed value chain interventions were piloted and evaluated in 2018;
- Recommendations to establish seed coordinating units within the regional state Bureaus of Agriculture (BoAs) have been made and terms of reference drafted;
- Clear roles and responsibilities in the production of quality early generation seed (EGS) have been agreed upon, joint planning facilitated and contracting between parties commenced;
- Living variety register for EGS production compiled based on inventory of released varieties for which breeder seed is currently being maintained and those now obsolete;
- 46 seed producers signed contractual agreements and purchased seed from EGS suppliers;
- Increased ownership of unions and multipurpose cooperatives in seed demand assessment and procurement was piloted to improve conventional seed allocation and distribution;
- Licensing trained multipurpose cooperatives as seed stockists and retailers has been piloted;
- The capacity of private seed agents has been increased through standard store construction;
- A national digital platform for seed marketing information is under development;
- ISSD contributed significantly to the development of a national seed sector transformation agenda and chaired the panel revising the draft national seed policy;
- Three long-awaited directives have been rubber stamped, including the directive to dispose of less viable seed carried over in cooperative stores; clarity on the criteria for awarding seed producers CoCs; and official endorsement of direct seed marketing;
- The total number of members of the association increased in 2018 from 32 to 36;
- The ESA secretariat managed to collect contributions from 23 members, which is a big improvement from the year before when only 7 membership fees were collected;
- Discussion forum for private vegetable seed importers and producers organized with the objective of encouraging them to join the association;

- Three vegetable seed importers and producers and one cereal seed producer joined as new members of the Ethiopian Seed Association (ESA);
- ESA website maintained with ISSD technical support, providing the medium for customers to enquire about the availability of quality seed;
- ESA conducted two studies: an assessment of policy constraints to private seed sector emergence; and assessment of non-policy constraints to private seed sector emergence;
- Policy related challenges were summarized and presented to Ministry of Agriculture (MoA), which has subsequently taken recommended action.

Key challenges

- Pest and disease outbreaks are increasing in frequency and severity, which is a serious threat to quality seed production;
- Despite the 30% increase in grain seed production and 102% increase in seed potatoes, 2018 saw a drop in overall sales that correlates with reduced purchases by institutional buyers;
- Sales directly to farmers currently only accounts for 23% of the transacted volume of quality seed produced by ISSD-supported seed SPCs and PSPs;
- The most common areas of underperformance of SPCs and PSPs are value addition, marketing and organizational and financial management;
- Quality EGS is in very short supply for legumes and oilseeds;
- SPCs are constrained in their ability to raise working capital;
- There are systemic reasons why current levels of investment in seed value addition and marketing are low, including the mechanism by which premium prices are set for seed;
- Relationships between SPCs and unions are poor, causing bottlenecks in seed marketing and disputes over seed pricing;
- Regional seed regulatory authorities are seriously resource-constrained, making it difficult to fulfil their service requirements;
- Limited availability of data on the performance of the seed sector makes evidence-based regulatory reform and coordination challenging;
- Implementation is not always conducted in accordance with policy due to strong traditions;
- Capacity strengthening in policy implementation requires significant investment of resources;
- There is weak alignment between regional state and federal governments in governing the seed sector;
- Commitment of resources, in particular trained personnel, in coordinating developments in the seed sector needs to increase;
- The climate for private investment in (local) seed business is not all that favourable.

Opportunities

- A growing number of programmes operate and agroindustry is expanding thereby increasing demand for quality seed to sustain higher productivity targets set by government, industry and their development partners;
- Strengthening of the regional seed regulatory authorities has resulted in a number of new laboratories being constructed;
- Government is committed to transform the seed sector;
- ISSD has become a preferred partner of government due to positive recognition of our work;
- MoA has given the mandate to ISSD to facilitate reforms to seed sector governance, and offered the opportunity to chair the panel revising the draft national seed policy;
- The Plant Breeders' Rights Proclamation has been amended, providing greater opportunity for plant variety protection and (inter)national private investment in the seed sector.

Lessons learnt

- Crowdsourcing has been a strong motivator for, in particular, extension, but its sustainability in the long run really depends on its embedding with the research system;
- With Agricultural Growth Program (AGP) support in 2018, direct seed marketing has increased from 132 to 228 woredas across the country, highlighting the potential that memoranda of understanding (MoUs) can have;
- Concerted effort pays off, but institutional change takes time;
- Identifying the right moment to advance our transformation agenda was an important lesson;

-
- The Prime Minister H.E. Abiy Ahmed's announcement of his challenge to his ministers to come with their revised strategies within the next 100 days presented the opportunity ISSD needed.

The way forward

- In 2019, a great deal of responsibility in crowdsourcing will be handed over to research institutes;
- Significant effort should be channelled into reinvigorating local seed business (LSB) development with support to and cooperation with unions and reforms to seed marketing and seed premium price setting;
- ISSD needs to increase investment in the promotion of quality seed products by scaling up innovations like packaging seed in small quantities, seed mini-markets, seed exhibitions and fairs, and mass media campaigning;
- ISSD needs to invest significantly in documenting and sharing its knowledge and experiences in manuals, modules and materials for seed training and extension;
- ISSD needs to consolidate what it has started in systematizing EGS supply in the country;
- Improving seed producers' access to credit requires further exploration;
- Technical and financial assistance to the organizational development of the regional seed regulatory authorities has been planned;
- ISSD plans to establish a system and indicators for measuring seed sector performance;
- Elaboration of a plan, including activities at regional state level, would make for meaningful follow up to the endorsement of the national seed sector transformation agenda;
- Close consultation with and support to senior management of MoA in policy implementation will be offered;
- To promote better coordination, ISSD will advocate for the establishment of an independent agency governing the seed sector;
- To empower promising innovations of SPCs across the country and to consolidate capacities for LSB, we aim to actively engage Federal Cooperative Agency (FCA) and Agricultural Transformation Agency (ATA) in experience sharing;
- FCA and ATA ought to mediate better relationships between SPCs and unions and broker credit to these organizations;
- The national digital platform for seed marketing information should be established.

Quality and quantity of sustainable agricultural production

The availability and use of quality seed has improved for almost 3.5 million farmers with support from ISSD from 2016 to present. In 2018, ISSD strengthened the capacities of 149 SPCs, over 20 PSPs and the four public seed enterprises to increase production and dissemination/marketing of quality seed in Ethiopia. The programme deployed 280 varieties to 13,309 smallholder farmers, over half of whom are women, to increase the demand for and availability of new, improved and/or farmer preferred varieties. Through seed business management training, coaching and supervision, seed producers' business orientation and financial viability was enhanced. Women have improved access to and use of quality seed of their preference, now comprising 30% of the programme's target groups. 2018 has seen an 8.5% increase in crop and varietal diversity, which is believed to contribute to improved food and nutrition security of farmers.

Improved markets and trade

ISSD managed to address 14 bottlenecks hampering seed value chain performance in 2018, ranging from the limited supply of quality EGS to weak coordination of developments in the seed sector. Over 74 linkages between seed producers and input and service providers were strengthened. Business opportunities in the Ethiopian seed sector for two Dutch companies were increased whilst regulatory advice was given to an additional four. A high level committee of Dutch companies facilitated by ISSD in close consultation with the agricultural counsellor at EKN has a regular audience with the Minister of Agriculture in Ethiopia. At least eight different interventions into seed value chains were piloted and evaluated in 2018, such as the establishment of coordinating units in seed sector governance, forward contracting of EGS supply and establishing a national digital platform for seed marketing information, solving common problems in seed sector coordination, EGS supply and seed marketing.

Improved enabling environment

In 2018, ISSD made leaps and bounds in improving the enabling environment for the seed sector. ISSD has contributed significantly to the development of a national seed sector transformation agenda and chaired the panel revising the draft national seed policy. Three long-awaited directives, which ISSD helped formulate, have been approved. ISSD has seconded a senior seed sector expert to the ministry, who serves in their seed coordinating unit and facilitates meetings of the national seed advisory group. In addition, ISSD strengthened ESA's technical capacity to deliver demand driven services to its members. The total number of members of the association increased in 2018 from 32 to 36. The ESA secretariat managed to collect contributions from 23 members, which is a big improvement from the year before when only 7 membership fees were collected.

Partnership and collaboration

ISSD collaborates closely with MoA, AGP, ATA, Food and Agriculture Organization of the United Nations (FAO), Ethiopian Institute of Agricultural Research (EIAR), selected CGIAR institutes and German Development Agency (GIZ) at national level and with BoAs, regional cooperative promotion agencies (RCPAs), regional agricultural research institutes (RARIs), selected universities and non-governmental organizations (NGOs) at regional state level. Currently, ISSD collaborates with six Dutch/international companies invested in the Ethiopia seed sector. Key thematic areas of collaboration with BENEFIT partners specifically, include: value chain development of malt barley, potato, sesame, sorghum and soybean; gender; nutrition; scaling; capacity strengthening; access to finance; and M&E and communication. In 2019, ISSD has committed 10% of its budget to collaborative activities with BENEFIT partners.

Quality and quantity of sustainable agricultural production

In the Integrated Seed Sector Development programme in Ethiopia (ISSD) we target the following outcomes for contributing to increased quality and quantity of sustainable agricultural production:

- 1.1 Increased availability and use of quality seed of new, improved and/or farmer preferred varieties
 - 1.1.1 Increased production and dissemination/marketing of quality seed
 - 1.1.2 Increased demand for and availability of new, improved and/or farmer preferred varieties
 - 1.1.3 Enhanced business orientation and financial viability of seed producers
 - 1.1.4 Women have improved access and use of quality seed of their preference
 - 1.1.5 Improved food and nutrition security of farmers through crop and varietal diversity

Increased use of quality seed increases crop yields. In 2018, ISSD conducted trials comparing the yields harvested from plots sown with first generation certified seed (C1) and C3 seed for barley, wheat, teff, haricot bean and potato. Yield increments can be as high as 97%, depending on crop type, as is shown in Table 1 below. In addition, cleaning farm saved seed of local varieties of wheat increased yields by 20% on average.

Table 1 Increased yield (%) obtained from C1 compared with C3 seed

Crop	No. varieties	No. locations	Range in increase	Mean increase
Barley	3	1		7.8%
Wheat	4	4	11-33%	18.3%
Teff	3	4	8-26%	17.8%
Haricot bean	4	4	2-32%	16%
Potato	3	4	16-97%	43%

Increased availability and use of quality seed of new, improved and/or farmer preferred varieties

The availability and use of quality seed has improved for almost 3.5 million farmers with support from ISSD from 2016 to present. In 2018, ISSD strengthened the capacities of 149 seed producer cooperatives (SPCs), over 20 private seed producers (PSPs) and the four public seed enterprises to increase production and dissemination/marketing of quality seed in Ethiopia. The programme deployed 280 varieties to 13,309 smallholder farmers, over half of whom are women, to increase the demand for and availability of new, improved and/or farmer preferred varieties. Through seed business management training, coaching and supervision, seed producers' business orientation and financial viability was enhanced. Women have improved access to and use of quality seed of their preference, now comprising 30% of the programme's target groups. 2018 has seen an 8.5% increase in crop and varietal diversity, which we believe contributes to improved food and nutrition security of farmers.

Increased production and dissemination/marketing of quality seed

The production of quality seed of grains, legumes and oilseeds by ISSD target groups increased 27% in 2018 to a total of 28,353 tonnes as is shown in Figure 1. Selected target groups produced 5,768 t of seed potato in 2018, which is a staggering 91% increase on year before. In addition, 200,000 sweet potato cuttings as well as 150,000 papaya seedlings were also produced in 2018.

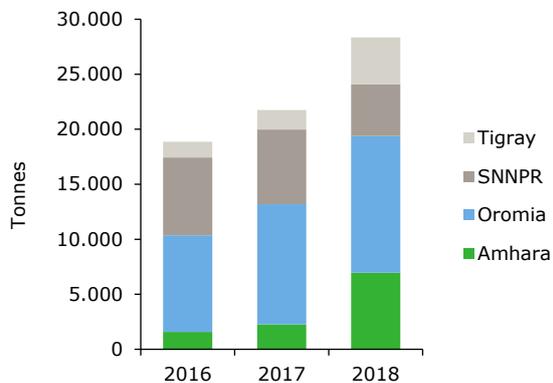


Figure 1a Quality seed of grains, legumes and oilseeds produced from 2016-18

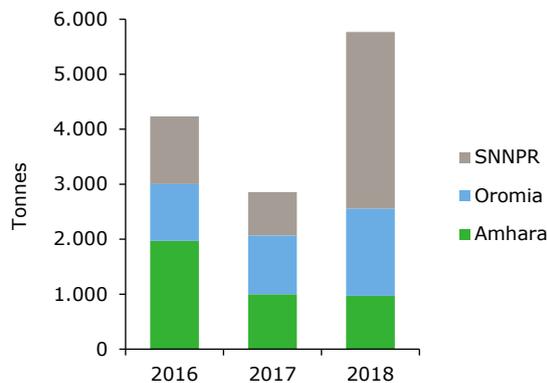


Figure 1b Quality seed potato produced from 2016-18

Despite the 30% increase in grain seed production and 102% increase in seed potatoes, 2018 saw a drop in overall sales. The trend goes hand in hand with a significant decline in bulk purchases by institutional buyers (Figure 2). This reiterates the importance of strengthening SPCs' and PSPs' capacities to process, package and sell their seed directly to farmers, a channel currently only accounting for 23% of all sales.

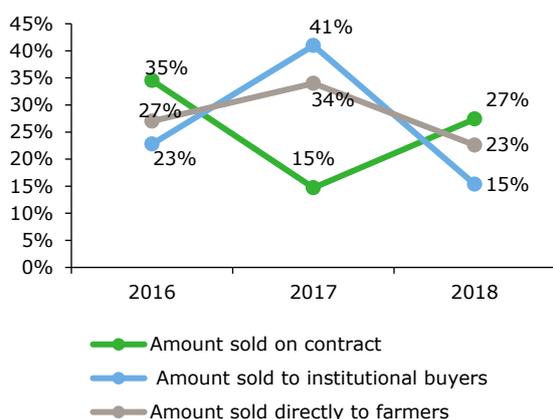


Figure 2a Trend in quality seed sales (%) by channel, 2016-18

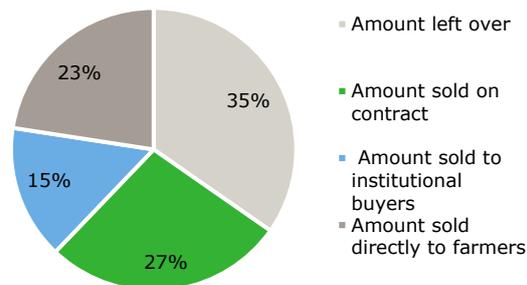


Figure 2b Quality seed sales by channel in 2018

Over the past year, ISSD provided its support to 149 SPCs, more than 20 PSPs, and the four public seed enterprises, which contributed to the increased production and dissemination/marketing of quality seed described above. The type of support given includes tailor-made trainings, field level coaching and follow up, and organizing experience sharing visits to strengthen capacities in quality seed production, processing, packaging, storage, marketing and distribution, entrepreneurship, and organizational and financial management. Innovation grants were provided as co-funding for strategic infrastructural developments in, for example, storage, packaging and processing. Furthermore, relationships were built for improving access to new varieties, basic seed, credit, seed inspection and certification and other inputs and services. Other more specific outputs in 2018 include:

- 7,267 farmers/farm employees and 296 experts from partner organizations were trained;
- 33 agronomists from selected SPCs, PSPs and public seed enterprises were trained on internal seed quality control procedures specifically;
- 398 SPC members from Oromia (south & west) and 25 from Amhara shared experiences;
- 111 SPCs obtained small grants for co-investment in infrastructure including offices, stores, and a potato mini-tuber screen house;

- 14 PSPs obtained small grants for co-investment in assets including pumps for irrigation, seed mini laboratories and improved packaging for small quantities of seed;
- 10 multipurpose cooperatives were licensed as seed retail outlets in SNNPR, which increased access of 7,315 smallholder to 533 t of quality seed;
- One seed cleaning machine that was previously standing idle at Haramaya University was donated to Chercher Oda Bultum union.

Increased demand for and availability of new, improved and/or farmer preferred varieties

Over the course of 2018, 280 varieties of 17 different crops (eight cereals, six legumes, two oilseeds and one spice) were deployed through participatory variety selection (PVS) and crowdsourcing (Figure 3). Crowdsourcing trials were conducted on a total of 13,309 smallholder farmer fields, of which 6,896 (51.8%) were managed by women, distributed over 48 woredas and 143 kebeles across the four regional states where ISSD operates. Participant farmers and development agents (DAs) in crowdsourcing and PVS are expected to save some of their harvests, sow and exchange seed, thereby further making these varieties available to others during the next cropping season. In addition to the exposure generated through crowdsourcing, 13,925 farmers compared the performance of different varieties during 113 field days. 15 of these field days were organized in Amhara, 35 in Oromia (east), 26 in Oromia (south & west), 24 in SNNPR and 13 in Tigray.

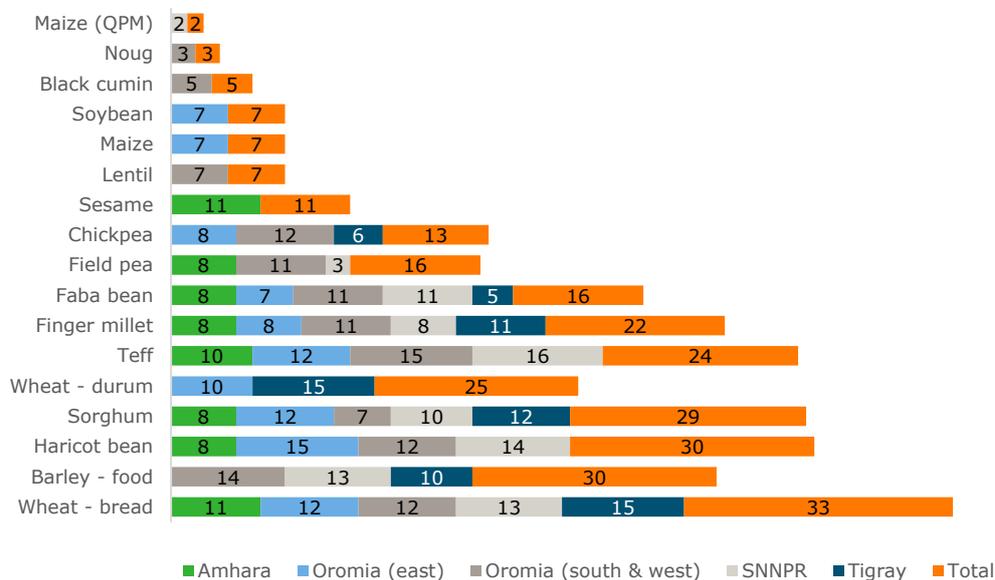


Figure 3 Number of varieties per crop demonstrated through PVS and crowdsourcing in 2018

In order to increase demand for new, improved and/or farmer preferred varieties among farmers, ISSD deploys varieties through crowdsourcing and PVS, collects and makes available data on farmers' preferences on an online platform called ClimMob, promotes seed extension, and facilitates research-extension-industry linkages. Demonstrations, experience sharing visits, mass media campaigns, mini-markets and both seed and food fairs have also been conducted to promote deployed varieties and products in the portfolios of supported seed producers. Other more specific outputs in 2018 include:

- Women's groups in Amhara scaled up multiplication of Mecha finger millet variety on 7 ha and produced 14 t of quality seed for informal distribution;
- Superior common bean varieties selected from crowdsourcing trials in Oromia (east) in 2017 were shared and popularized among farmers in Doba woreda;
- Varieties selected from crowdsourcing trials in 2017 were multiplied on 50 ha across Segen Peoples, Halaba, Kembata, Silte and Kefa zones in SNNPR;
- 400 kg quality seed of Melkam sorghum variety and 200 kg of Fetina barley variety were distributed to farmers in Tigray for multiplication to satisfy demand created in 2017;

- 1,200 crowdsourcing participants in Oromia (south & west) obtained PICS (Purdue Improved Cowpea Storage) bags to reduce post-harvest losses and improve their chances of disseminating varieties in 2019;
- 1,600 packs of 2 kg quantities of quality seed of new and improved varieties of chickpea, common bean and teff were sold by two SPCs directly to smallholder farmers;
- Quality seed promotion strategy developed by ISSD taken up and resourced by MoA.

Enhanced business orientation and financial viability of seed producers

Measured against key performance indicators (KPIs) and compared with 2017, the performance of PSPs in Oromia (south & west), SNNPR and Tigray increased slightly this past year by 6.2%, 1.4% and 3.3% respectively. Similarly, average performance of SPCs in Oromia (south & west) and Tigray also saw modest improvement by 0.6% and 9.1% respectively. In SNNPR and Oromia (east), however, the performance of SPCs declined by 0.2% and 12.8% respectively, which was attributed to change of leadership in the management ranks. The most common areas of underperformance across all seed producers are value addition, marketing and organizational and financial management. Significant effort in 2019 should be channelled into reinvigorating local seed business (LSB) development in Ethiopia.

Regardless of the marginal changes in performance against KPIs, most seed producers recorded profit in 2018 (Figure 4). Among those that were audited, 94% of SPCs were profitable in their seed business last year. In addition, of the 20 PSPs to which regional units provide their support, 16 could provide audit reports or income statements indicating profit.

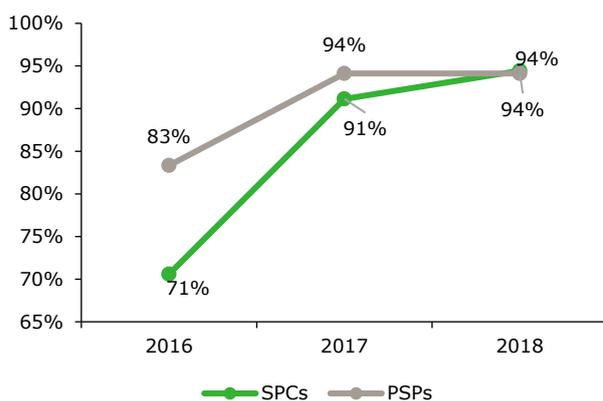


Figure 4 Proportion of audited seed producers profitable in their seed business ventures

Different efforts have been made to enhance the business orientation and financial viability of supported seed producers. Trainings have been provided to 890 members of the SPCs, 75 employees of PSPs and 68 experts of scaling partners on entrepreneurship, seed business plan development, financial management and record keeping and seed marketing. In two more specific cases, guidance has been given to SPCs in amending their by-laws for improved organizational governance, and data management training has been given to scaling partners. Other specific outputs in 2018 include:

- The impact that trainings provided has had on the business orientation of seed producers was assessed and results point to regulation of the seed market as well as a lack of financial credit as the main reasons why application of what has been learnt has been limited so far;
- 90 SPCs updated their business plans, 25 of which developed seed marketing strategies;
- 17 PSPs updated their business plans, 10 of which developed seed marketing strategies;
- 13 SPCs and one PSP from Tigray have obtained certificates of competency (CoCs) to produce and market quality seed;
- Kolbe SPC and Tuka Katara SPC in Oromia (south & west) have diversified their income by hiring out their tractors as a service to others, the former generating ETB 790,000 as a result;
- Four SPCs in Oromia (east) and a few in Amhara have diversified into other goods and service provision and are trading grain, part of which is sub-standard seed, for additional income;

- In Oromia (south & west), the regional unit promoted in-kind equity among five SPCs, one of which increased their working capital by ETB 126,750 as a result;
- 10 PSPs in Amhara were linked to financial institutes and one obtained ETB 750,000 credit;
- Dialogue with zone and woreda offices of agriculture in SNNPR has resulted in interest-free loans of ETB 600,000 to selected SPCs;
- 461 SPC members have started recording their costs subsequent to financial literacy training;
- In Oromia (south & west), cooperative by-law amendment has made it possible for management committees to serve an additional year between terms and for up to two-thirds of their members to serve longer if re-elected;
- A study on the performance of 33 SPCs that were graduated three years ago from the programme was commissioned, which gives insights into the viability of the LSB model.

Women have improved access and use of quality seed of their preference

At present, 9,745 women participate directly in the programme, which is quadruple that of 2016. Almost 30% of ISSD's target groups are women, representing a significant improvement in women's access to and use of quality seed. The increment in women's participation in SNNPR in particular is inspiring. The representation of women at SPC (sub-)committee level has now reached 15%, 14%, 13%, 12% and 7% in Tigray, Amhara, Oromia (east), SNNPR and Oromia (south & west) respectively, an increase on previous years.

Table 2 Women's participation in ISSD in general

	Amhara	Oromia	SNNPR	Tigray	Total
2016	12%	15%	14%	19%	14%
2017	21%	24%	30%	27%	24%
2018	26%	30%	39%	26%	29%

One particular area where women's participation rivals their male counterparts is variety evaluation and selection. Variety evaluation is conducted in a gender-sensitive way. Firstly, 52% of crowdsourcing participants in 2018 were women. Secondly, women's preferences are criteria mainstreamed into evaluation practices. For example, the scorecards used in crowdsourcing include women's preferred traits. Women-only focus group discussions were conducted in 2016 to reveal the crops and traits most preferred by women, which now govern the diversity deployed through PVS and crowdsourcing. Thirdly, data collection and analysis is gendered. Besides at least half the observations in crowdsourcing being generated by women, women are specifically invited to evaluate varieties at PVS trials and to conduct their evaluation separately from men. Other specific outputs in 2018 include:

- 1,700 female smallholders in Tigray were trained and empowered in quality seed production;
- 20,688 women will access new varieties through the exchange of seed harvested from crowdsourcing trials this past year;
- 456 female farmers evaluated improved varieties of nutritious chickpea, faba bean, field pea, haricot bean and lentil, and 2,280 more will be shared what was harvested this past year;
- Women preferred varieties and traits were documented and shared through different communication media, including print and e-news articles;
- Women hosted visitors at the sites of their plots at each field day organized this past year;
- 206 female farmers participated in different quality seed promotion events in Oromia (east), including seed exhibitions, experience sharing visits and field days, whom gained awareness on different sources of quality seeds;
- A gender analysis on the soybean and chickpea value chains in Oromia region was conducted in collaboration with CASCAPE's Jimma cluster and presented to the regional gender and nutrition working groups.

Improved food and nutrition security of farmers through increasing crop and varietal diversity

In 2018, SPCs produced quality seed of 80 varieties of 22 different crops, while PSPs produced quality seed of 31 varieties of 16 different crops. Collectively, 97 varieties of 26 crops were incorporated in the product portfolios of SPCs and PSPs this past year (Figure 5). Considering also those varieties not

included in the current product portfolios of SPCs and PSPs, but which were demonstrated through PVS and crowdsourcing, the total diversity deployed in 2018 is equal to 344 varieties, an increase of 8.5% on 2017.

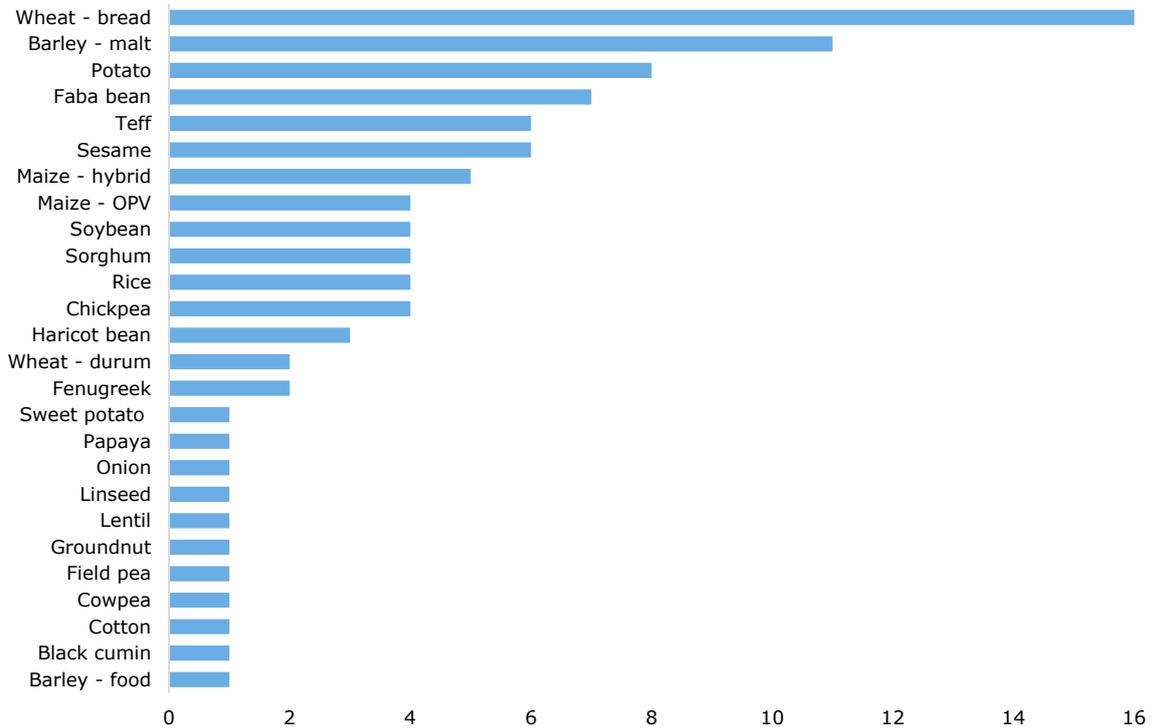


Figure 5 Collective crop and variety portfolio of SPCs and PSPs in 2018

In 2018, ISSD supported seed producers in diversifying their product portfolios. Advice was given in their preparation of seed business plans and seed marketing strategies, including what products to include in their portfolios. Some SPCs have already started multiplying seed of those varieties selected by farmers who participated in PVS and crowdsourcing trials in 2017. In addition, specific attention is given to legumes in our effort to diversify seed product portfolios, because of their value to soil fertility and human nutrition. Of the 22 crops produced by SPCs and PSPs, eight were legumes. Legumes represent almost a quarter of the portfolio in terms of varieties. Other specific outputs in 2018 include:

- More than 10 early maturing varieties of food barley injected into subsistence farming through PVS and crowdsourcing to shorten the hunger period and escape terminal drought;
- Varieties of quality protein maize (QPM) demonstrated in SNNPR;
- 12 varieties of nutritious chickpea and faba bean deployed to 600 farmers (half of whom are female) in Degua Temben and Tahtay Maychew woredas in Tigray;
- 200,000 sweet potato vines distributed to farmers (70% of whom are women) in Tigray;
- Training of trainers provided to 97 subject matter specialists and DAs in eight woredas of Oromia (east) on identifying nutritious crop varieties;
- A food fair in Oromia (east) demonstrated how common crops including wheat, common bean and potato, can be prepared as qixa, bread, cake, bombolino, biscuit and sambusa;
- Forum and field days created awareness among more than 4,500 farmers in Oromia (south & west) on nutrient dense crops;
- Nutrition education recommended by gender and nutrition analysis and given to 40 farmers (half of whom are female) in Tole and Goro woredas of Oromia (south & west) to raise awareness on the benefits of legumes.

Mainstreaming social inclusion and nutrition

ISSD has intermediary outcomes on gender and nutrition, namely: Women have improved access and use of quality seed of their preference; and Improved food and nutrition security of farmers through increasing crop and varietal diversity (see above). In addition, at least 50% participation of women in activities strengthening informal seed systems, which target in total 36,000 smallholder farmers by the end of 2019, has been set. Another way in which ISSD mainstreams gender is that it gives a balanced representation of men and women in the demonstrations it organizes and news items it publishes. Fundamental to ISSD's approach to mainstreaming nutrition is diversifying the crop and varietal portfolio for which quality seed is available. In addition, specific attention is given to the inclusion of nutrient dense crops and varieties, and, to a more limited extent, education and awareness raising about nutrition.

Conclusions and recommendations

Achievements

In summary, the main achievements of ISSD in 2018 were:

- The availability and use of quality seed has improved for 3,491,592 farmers since 2016;
- ISSD strengthened the capacities of 149 SPCs, over 20 PSPs and the four public seed enterprises to increase production and dissemination/marketing of quality seed in 2018;
- The production of quality seed of grains, legumes and oilseeds by ISSD target groups increased 27% in 2018 to a total of 28,353 tonnes;
- Selected target groups produced 5,768 t of seed potato in 2018, which is a staggering 91% increase on year before;
- The programme demonstrated 280 varieties to 13,309 smallholder farmers, over half of whom are women, through PVS and crowdsourcing to increase the demand for and availability of new, improved and/or farmer preferred varieties;
- Measured against KPIs, the performance of PSPs in Oromia (south & west), SNNPR and Tigray increased slightly this past year by 6.2%, 1.4% and 3.3% respectively;
- Similarly, average performance of SPCs in Oromia (south & west) and Tigray also saw modest improvement by 0.6% and 9.1% respectively;
- 94% of audited seed producers recorded profit in 2018;
- 13 SPCs and 1 PSP have obtained CoCs in 2018 for seed production and marketing;
- Women have improved access to and use of quality seed of their preference, now comprising 30% of the programme's target groups;
- The representation of women at SPC (sub-)committee level has now reached 15%, 14%, 13%, 12% and 7% in Tigray, Amhara, Oromia (east), SNNPR and Oromia (south & west) respectively, an increase on previous years;
- The total diversity deployed in 2018 is equal to 344 varieties, an increase of 8.5% on 2017, contributing to improved food and nutrition security of farmers.

Challenges, opportunities and lessons learnt

In 2018, we have learnt that crowdsourcing is a strong motivator for, in particular, extension, but other stakeholders as well. However, its sustainability in the long run really depends on its embedding with the research system. A number of opportunities have also emerged for ISSD. In addition to a growing number of programmes operating in agriculture, agroindustry in the country is expanding in capacity. Quality seed will likely increase in demand to sustain higher productivity targets set by government, industry and their development partners. Nevertheless, certain challenges persist:

- Pest and disease outbreaks are increasing in frequency and severity, which is a serious threat to quality seed production;
- Despite the 30% increase in grain seed production and 102% increase in seed potatoes, 2018 saw a drop in overall sales;
- Sales directly to farmers currently only accounts for 23% of the transacted volume of quality seed produced by ISSD-supported seed SPCs and PSPs;
- The most common areas of underperformance of SPCs and PSPs are value addition, marketing and organizational and financial management.

Way forward

In 2019, a greater deal of responsibilities in crowdsourcing will be handed over to research institutes. Significant effort in 2019 should be channelled into reinvigorating LSB development in Ethiopia. ISSD needs to increase investment in the promotion of quality seed products by scaling up innovations like packaging seed in small quantities, seed mini-markets, seed exhibitions and fairs, and mass media campaigning. Significant investment in documenting and sharing ISSD's knowledge and experiences in manuals, modules and materials for seed training and extension ought to take place.

Improved markets and trade

In ISSD we target the following outcomes for contributing to improved markets and trade:

- 2.1 Enhanced performance of seed value chains
 - 2.1.1 Strengthened strategic linkages between seed producers and input and service providers
 - 2.1.2 Increased business opportunities for seed and seed related services provided in Ethiopia by Dutch/International seed companies
 - 2.1.3 Piloted demand driven interventions to address seed value chain bottlenecks

Enhanced performance of seed value chains

ISSD managed to address 14 bottlenecks hampering seed value chain performance in 2018, ranging from the limited supply of quality early generation seed (EGS) to weak coordination of developments in the seed sector. Over 74 linkages between seed producers and input and service providers were strengthened. Business opportunities in the Ethiopian seed sector for two Dutch companies were increased whilst regulatory advice was given to an additional four. A high level committee of Dutch companies facilitated by ISSD in close consultation with the agricultural counsellor at EKN has a regular audience with the Minister of Agriculture in Ethiopia. At least eight different interventions into seed value chains were piloted and evaluated in 2018, such as the establishment of coordinating units in seed sector governance, forward contracting of EGS supply and establishing a national digital platform for seed marketing information, solving common problems in seed sector coordination, EGS supply and seed marketing.

Strengthen strategic linkages between seed producers and input and service providers

50 SPCs, 12 unions, 11 PSPs and one public seed enterprise were linked with suppliers of basic seed. 51 SPCs, four unions and 10 PSPs were linked to other inputs and services including seed inspection and certification, agrochemicals, credit, hermetic storage devices and agricultural machinery. 52 SPCs, two unions and three PSPs were linked to markets for the sale of their quality seed.

ISSD brokered linkages and build better relationships between seed producers and multiple input and service providers. It achieved this by having its staff members take an active facilitation role in the seed sector, but also by organizing events like field days, seed exhibitions and fairs, seed mini-markets, marketing and finance forums, stakeholder meetings and platforms, and mass media campaigns. Other specific outputs in 2018 include:

- 13 SPCs and two unions obtained sufficient EGS to sow 550 ha of land under certified seed production in Oromia (east);
- Seven SPCs, 10 unions, one PSP and Oromia Seed Enterprise (OSE) linked with barley, maize, teff, wheat, soybean and sesame EGS suppliers in Oromia (south & west);
- Five SPCs accessed 800 quintal of basic seed from OSE as a result of coaching provided to partners in scaling LSB in Oromia (south & west);
- Seid Bushra PSP obtained EGS of an improved cowpea variety from International Livestock Research Institute (ILRI) for forage seed production in Amhara;
- Two SPCs and four PSPs in SNNPR, 13 SPCs, two unions and three EGS producers in Oromia (east) and two PSPs in Tigray were linked with regulatory authorities for timely field inspection, seed certification and renewal of CoCs;
- Five SPCs were linked to Alema farm service centre (FSC) in Oromia (south & west) to increase their access to farm inputs and services;
- Four PSPs met with Development Bank of Ethiopia (DBE) in Amhara to discuss loan schemes and criteria;
- 28 SPCs and 5 PSPs met PICS suppliers in Amhara to learn about and purchase the product;

- Three SPCs and two unions participated in the 5th regional post-harvest technology exhibition organized by the Tigray Agricultural Marketing Promotion Agency;
- Market linkages for five SPCs created through marketing forum with woreda offices of agriculture and cooperative promotion in Oromia (south & west);
- Field days at Tuka Katara SPC and Amuari PSP in Oromia (south & west);
- 223 farmers (105 female), representing three SPCs, linked to buyers during a seed mini-market in Oda Bultum woreda of Oromia (east);
- Currently available quantities of quality seed, potential future volumes and major marketing problems in West Shewa zone of Oromia identified during marketing forum;
- Two PSPs in the Raya Valley of South Tigray brought into negotiations with Nunhems-BASF to produce vegetable seed for export.

Increased business opportunities for seed and seed related services provided in Ethiopia by Dutch/International seed companies

Business opportunities in Ethiopia for Enza Zaden and Nunhems-BASF have increased in 2018 with ISSD support. Three of Enza's hybrid onion varieties have been popularized among more than 100 farmers, one of which has become the leading variety in the Central Rift Valley. ISSD helped Nunhems-BASF resolve an impasse with EBI on the export of a consignment of its seed.

ISSD facilitated the high-level meetings of the Ethio-Dutch Seed Committee chaired by the Minister of Agriculture with the aim of supporting strong regulatory frameworks enabling of direct foreign investment in and trade with Ethiopia. Partly achieved during, but also in follow up to these meetings, ISSD frequently consults with Bejo, East West Seed, Enza Zaden, Nunhems-BASF, RijkZwaan and Syngenta in navigating regulatory procedures in Ethiopia. Other specific outputs in 2018 include:

- Market linkage for these onion growers has been facilitated in collaboration with ENTAG;
- Two joint ventures for 2019 designed with Nunhems-BASF and RijkZwaan for 2019;
- Proposal to simplify the variety release procedure for horticultural crops formulated in consultation with MoA and ATA;
- Proposal for and two subsequent updates on variety release reform in Ethiopia shared with Dutch/international companies;
- Dutch/international companies' ambitions and prospects for trade and investment in the Ethiopian seed sector surveyed and analysed for sharing with (State) Minister of Agriculture;
- Capitalizing on business opportunities, simplifying variety release and strengthening plant variety protection (PVP) raised as the agenda for discussion during the next Ethio-Dutch Seed Committee meeting;
- Proposal for support from the Dutch Ministry of Agriculture, Nature and Food Quality (LNV) PVP Toolbox to Ethiopia submitted and pending approval;
- Facts and recommendations presented to EKN Addis Ababa on how to mitigate reputational damage arising from the negative public opinion of the Dutch teff processing patent.

Piloted demand driven interventions to address seed value chain bottlenecks

Multiple interventions in seed value chains were piloted, evaluated and scaled in 2018. These aimed to solve common problems in seed sector coordination, EGS supply and marketing, among other topics. Recommendations to establish seed coordinating units within the regional state BoAs have been made, and terms of reference drafted. Clear roles and responsibilities in the production of quality EGS have been agreed upon, joint planning facilitated and contracting between parties commenced. Increased ownership of unions and multipurpose cooperatives in seed demand assessment and procurement was piloted in Oromia to improve conventional seed allocation and distribution. In SNNPR, licensing trained multipurpose cooperatives as seed stockists and retailers has been piloted, and Tigray plans to replicate this in 2019. The capacity of three private seed agents in Amhara has been increased through the construction of standard stores. Lastly, a national digital platform for seed marketing information is under development.

ISSD facilitated meetings of the regional seed core groups to get their strategic guidance in the design, monitoring and evaluation of pilot interventions. Together in partnership with others, important stakeholders take the lead in implementing pilot interventions. Interventions are appraised, successful interventions are documented and the lessons learnt are shared in events, meetings and

workshops and through communication products for multiple media and target audiences. Providing both technical and financial assistance where needed, ISSD brings promising innovations to scale, in part by embedding them institutionally. Other specific outputs in 2018 include:

- Seed coordinating units established as ad hoc committees within all four regional state BoAs;
- Greater legitimacy and enhanced mandate for the regional seed task force in Tigray sought for strengthening seed sector coordination in the region;
- Living variety register for EGS production compiled based on inventory of released varieties for which breeder seed is currently being maintained and those now obsolete;
- 19 seed producers in Amhara signed contractual agreements and purchased basic seed from Amhara Regional Agricultural Research Institute (ARARI), Amhara Seed Enterprise (ASE), and Avalo and Ethio-Agriceft PSPs;
- 19 seed producers in Oromia (south & west) signed contractual agreements and purchased basic seed from selected Oromia Agricultural Research Institute (OARI) centres and Oromia Seed Enterprise (OSE);
- Eight seed producers in SNNPR signed contractual agreements and purchased basic seed from EGS producers in the region;
- Agreements with selected EIAR centres and Ethiopian Seed Enterprise (ESE) signed for meeting the shortfall where regional EGS demands surpass regional supply;
- 52 researchers from EIAR and the RARIs trained on seed systems and EGS production;
- Erer Union differed from BoA in their estimates of seed demand for four woredas in Oromia (south & west) by 195 qt for Ada'a woreda to as much as 1,262 qt for Akakai woreda;
- DAs and two selected woreda committees trained to collect data on farmers' seed demands for Erer Union, and tentatively seed carryover has reduced in volume;
- Oda Bultum and Arfan Kelo unions in Oromia (east) conducted seed demand assessments and prepared plans for seed procurement in 2019;
- 10,362 qt of certified seed sold to smallholder farmers by 10 licensed multipurpose cooperatives trained as seed stockists for ESE, South Seed Enterprise (SSE) and Edget Union in SNNPR;
- Assessment on seed sector performance in Oromia (east) conducted and key challenges identified including that seed sourced elsewhere is not suitable for East and West Hararghe;
- Responsibility given to three research centres and Haramaya University and to three unions in East and West Hararghe to produce EGS and certified seed respectively for self-sufficiency in Oromia (east);
- The independent Oromia Agricultural Input Regulatory Authority (OAIRA) established after years of delay and continued advocacy by ISSD;
- 32 inspectors and laboratory technicians were trained on field and laboratory techniques of seed inspection and certification;
- Quality declared seed (QDS) inspection and testing for pepper, ginger and coffee introduced in three woredas in SNNPR in partnership to three seed producers.

Mainstreaming social inclusion and nutrition

In order to improve women's access to and use of quality seed of their preference, ISSD trains seed value chain actors on gender. Furthermore, ISSD does some significant grant making to third parties for piloting and scaling innovations, and has sensitized its investment decisions to gender. All investment decisions are documented on grant canvases, which explicitly ask: who benefits; and how is gender addressed in activities? With regards to nutrition, ISSD diversifies the crop and varietal portfolio in crop production. It achieves this in part by enhancing the performance of seed value chains in not only formal, but informal and intermediary seed systems as well. The latter two tend to have a much broader bandwidth with regards to diversity than the former.

Conclusions and recommendations

Achievements

In summary, the main achievements of ISSD in 2018 were:

- ISSD managed to address 14 bottlenecks hampering seed value chain performance in 2018;
- Over 74 linkages between seed producers and input and services including basic seed, agrochemicals, credit, seed inspection and certification and improved post-harvest technologies were strengthened;

-
- Business opportunities in the Ethiopian seed sector for two Dutch companies were increased whilst regulatory advice was given to an additional four;
 - A high level committee of Dutch companies facilitated by ISSD in consultation with the agricultural counsellor at EKN has a regular audience with the Minister of Agriculture;
 - At least eight different seed value chain interventions were piloted and evaluated in 2018;
 - Recommendations to establish seed coordinating units within the regional state BoAs have been made and terms of reference drafted;
 - Clear roles and responsibilities in the production of quality EGS have been agreed upon, joint planning facilitated and contracting between parties commenced;
 - 46 seed producers signed contractual agreements and purchased seed from EGS suppliers;
 - Increased ownership of unions and multipurpose cooperatives in seed demand assessment and procurement was piloted to improve conventional seed allocation and distribution;
 - Licensing trained multipurpose cooperatives as seed stockists and retailers has been piloted;
 - The capacity of private seed agents has been increased through standard store construction;
 - A national digital platform for seed marketing information is under development.

Challenges, opportunities and lessons learnt

In 2018, a number of lessons have been learnt. With AGP support in 2018, direct seed marketing has increased from 132 to 228 woredas across the country. This highlights the potential that MoUs can have in institutionally embedding our innovations. Concerted effort pays off, but institutional change takes time. For example, establishment of the OAIRA has just been endorsed, despite ISSD first recommending this in 2012. Opportunities for ISSD have also emerged. MoA has given the mandate to ISSD to better organise EGS supply and strengthening of the regional seed regulatory authorities has resulted in a number of new laboratories being constructed. Nevertheless, certain challenges persist:

- Quality EGS is in very short supply for legumes and oilseeds;
- SPCs are constrained in their ability to raise working capital;
- There are systemic reasons why current levels of investment in seed value addition and marketing are low;
- Relationships between SPCs and unions are poor, causing bottlenecks in seed marketing and disputes over seed pricing;
- Regional seed regulatory authorities are seriously resource-constrained, making it difficult to fulfil their service requirements.

Way forward

ISSD needs to consolidate what it has started in systematizing EGS supply in the country. Improving seed producers' access to credit requires further exploration. To increase the viability of the LSB model, support to and cooperation with unions requires more attention than what we have given so far, and reforms to seed marketing and seed premium price setting. Technical and financial assistance to the organizational development of the regional seed regulatory authorities has been planned.

Improved enabling environment

In ISSD Ethiopia we target the following outcomes for contributing to an improved enabling environment for the agricultural sector:

- 3.1 Improved enabling environment for enhanced performance of seed value chains
 - 3.1.1 Evidence-based innovations advocated and implemented
 - 3.1.2 Strengthened position of the Ethiopian Seed Association (ESA)

Improved enabling environment for enhanced performance of seed value chains

In 2018, ISSD made leaps and bounds in improving the enabling environment for the seed sector. ISSD has contributed significantly to the development of a national seed sector transformation agenda and chaired the panel revising the draft national seed policy. Three long-awaited directives, which ISSD helped formulate, have been approved, including the directive to dispose of less viable seed carried over in cooperative stores; clarity on the criteria for awarding seed producers CoCs; and official endorsement of direct seed marketing. ISSD has seconded a senior seed sector expert to the ministry, who serves in their seed coordinating unit and facilitates meetings of the national seed advisory group. In addition, ISSD strengthened ESA's technical capacity to deliver demand driven services to its members, in part by recruiting a secretariat officer. The total number of members of the association increased in 2018 from 32 to 36. The ESA secretariat managed to collect contributions from 23 members, which is a big improvement from the year before when only 7 membership fees were collected. We see this also as an indication of members' increased levels of satisfaction with the association and its services on offer.

Evidence-based innovations advocated and implemented

In 2018, ISSD made leaps and bounds in improving the enabling environment for the seed sector. Our collaboration with the federal government, made formal by our MoU with MoA and practical by our secondment of a senior seed sector expert to and regular consultation with its senior management, has led to a number of important results. ISSD has contributed significantly to the development of a national seed sector transformation agenda and chaired the panel revising the draft national seed policy. Three long-awaited directives have been rubber stamped, including the directive to dispose of less viable seed carried over in cooperative stores; clarity on the criteria for awarding seed producers CoCs; and official endorsement of direct seed marketing.

ISSD facilitated that regional seed core groups share evidence-based policy options in relevant fora. In April 2018, the programme brought representatives from each of the regional seed core groups and selected federal officials together, who described their vision for the seed sector in 2040, outcomes that should be pursued in six different building blocks of sector transformation, and new coordinating structures to govern the seed sector. Subsequently, in collaboration with the national seed advisory group, the convening of which ISSD facilitates, the national seed sector transformation agenda has been drafted. Furthermore, ISSD organizes policy workshops on different thematic areas including EGS supply and seed marketing, commissions relevant studies and consultancies on contractual seed production and LSB viability for example, and strengthens the capacity of organizations in governance. Other specific outputs in 2018 include:

- National seed advisory group reorganized to enhance independence of advice to MoA;
- Follow up and technical support given to MoA on the finalization, approval, awareness creation and implementation of three seed related directives;
- Symposium on the role of universities in agricultural innovation organized;
- ISSD approach shared at national AGP meeting, for inspiration of Bule Hora University, and with EIAR researchers at plant breeders' training, EGS supply consultation, wheat technology delivery workshop and sorghum seed production training.

Strengthened position of the Ethiopian Seed Association (ESA)

The total number of members of the association increased in 2018 from 32 to 36. The ESA secretariat managed to collect contributions from 23 members, which is a big improvement from the year before when only 7 membership fees were collected. We see this also as an indication of members' increased levels of satisfaction with the association and its services on offer.

ISSD strengthened ESA's technical capacity to deliver demand driven services to its members through technical assistance and recruitment of a secretariat officer. In 2018, the secretariat conducted two studies: an assessment of policy constraints to private seed sector emergence; and assessment of non-policy constraints to private seed sector emergence. Policy related challenges were summarized and presented to MoA, which has subsequently taken recommended action. The second study has been recently finalized and the findings approved by the ESA board. Other specific outputs in 2018 include:

- Discussion forum for private vegetable seed importers and producers organized with the objective of encouraging them to join the association;
- Three vegetable seed importers and producers and one cereal seed producer joined as new members of ESA;
- ESA website maintained with ISSD technical support, providing the medium for customers to enquire about the availability of quality seed.

Mainstreaming social inclusion and nutrition

ISSD advised SPCs in adopting new governing by-laws, subsequent to the amendment of the Cooperative Societies Proclamation in 2016. One new article to mention is that women's representation in management shall equal 30% if their number permits. In addition, ISSD has advocated by-law amendments to entitle women's equity in the business. Traditionally, the male head of the household owns shares in the cooperative. Should he pass away or divorce his wife, she will not be entitled to that equity. Therefore, we recommend permitting women to purchase shares and to have shares also registered in both the husband and wife's name.

Conclusions and recommendations

Achievements

In summary, the main achievements of ISSD in 2018 were:

- ISSD contributed significantly to the development of a national seed sector transformation agenda and chaired the panel revising the draft national seed policy;
- Three long-awaited directives have been rubber stamped, including the directive to dispose of less viable seed carried over in cooperative stores; clarity on the criteria for awarding seed producers CoCs; and official endorsement of direct seed marketing;
- The total number of members of the association increased in 2018 from 32 to 36;
- The ESA secretariat managed to collect contributions from 23 members, which is a big improvement from the year before when only 7 membership fees were collected;
- Discussion forum for private vegetable seed importers and producers organized with the objective of encouraging them to join the association;
- Three vegetable seed importers and producers and one cereal seed producer joined as new members of ESA;
- ESA website maintained with ISSD technical support, providing the medium for customers to enquire about the availability of quality seed;
- ESA conducted two studies: an assessment of policy constraints to private seed sector emergence; and assessment of non-policy constraints to private seed sector emergence;
- Policy related challenges were summarized and presented to MoA, which has subsequently taken recommended action.

Challenges, opportunities and lessons learnt

2018 has seen waves of change politically, including a number of cabinet reshuffles and reduction in government departments. Identifying the right moment to advance our agenda was an important lesson learnt. After H.E. Abiy Ahmed, the Prime Minister, announced late last year his challenge to his ministers to come with their revised strategies within the next 100 days, ISSD decided to reconvene

higher officials in proposing the national agenda for seed sector transformation. Opportunities for ISSD have also emerged. Firstly, government is committed to transform the seed sector. ISSD has become a preferred partner of government due to the positive recognition of our work. MoA has given the mandate to ISSD to facilitate reforms to seed sector governance and seed regulatory functions, and offered ISSD the opportunity to chair the panel revising the draft national seed policy. Also, the Plant Breeders' Rights Proclamation has been amended, which provides greater opportunity for plant variety protection and (inter)national private investment in variety development and release. Nevertheless, certain challenges persist:

- Limited availability of data on the performance of the seed sector makes evidence-based regulatory reform and coordination challenging;
- Implementation is not always conducted in accordance with policy due to strong traditions;
- Capacity strengthening in policy implementation requires significant investment of resources;
- There is weak alignment between regional state and federal governments in governing the seed sector;
- Commitment of resources, in particular trained personnel, in coordinating developments in the seed sector needs to increase;
- The climate for private investment in (local) seed business is not all that favourable, in part because marketing is still so heavily regulated and so is the price of quality seed.

Way forward

In 2019, ISSD plans to establish a system and indicators for measuring seed sector performance. Elaboration of a plan, including activities at regional state level, would make for meaningful follow up to the endorsement of the national seed sector transformation agenda. Close consultation with and support to senior management of MoA in policy implementation will be offered. To promote better coordination, ISSD will advocate for the establishment of an independent agency governing the seed sector. To empower promising innovations of SPCs across the country and to consolidate capacities for LSB, we aim to actively engage FCA and ATA in experience sharing. FCA and ATA ought to mediate better relationships between SPCs and unions and broker credit to these organizations.

Collaboration

ISSD collaborates closely with MoA, AGP, ATA, Food and Agriculture Organization of the United Nations (FAO), Ethiopian Institute of Agricultural Research (EIAR), selected CGIAR institutes and German Development Agency (GIZ) at national level and with BoAs, regional cooperative promotion agencies (RCPAs), regional agricultural research institutes (RARIs), selected universities and non-governmental organizations (NGOs) at regional state level. Currently, ISSD collaborates with six Dutch/international companies invested in the Ethiopia seed sector. Key thematic areas of collaboration with BENEFIT partners specifically, include: value chain development of malt barley, potato, sesame, sorghum and soybean; gender; nutrition; scaling; capacity strengthening; access to finance; and M&E and communication. In 2019, ISSD has committed 10% of its budget to collaborative activities with BENEFIT partners.

M&E and communication

Internal systems of planning, monitoring and evaluation have been improved through the introduction of grant canvases and seed producer profiles for justifying grant making and measuring target group performance respectively. These complement earlier investments in an M&E matrix and manual; data sheets for management of basic, production and marketing data; key performance indicators (KPIs) for seed producers; BENEFIT indicator tracking table; baseline seed availability and use survey; most significant change stories; mid-term review (MTR); seed systems security assessment; and other studies including those in informal seed systems and on seed sector transformation. In addition, ISSD PMU conducts quarterly visits to regional units to monitor outputs and expenditure and to participate in activity planning for the coming three months. Annually, the regional workshops and regional unit planning meetings are important moments for evaluation and planning in the presence of senior management from PMU and WCDI. Once a year, all staff members come together for the purpose of sharing and learning from experiences, exploring important thematic areas of intervention and to build a constructive social working environment and team spirit.

At each of the regional units and PMU is a knowledge sharing and communication expert synthesizing our knowledge into communication products for multiple media and target audiences. In 2018, 12 newsletters; 11 brochures and flyers; 12 workshop proceedings; 13 radio and five TV broadcasts; five documentary films; and 38 press releases were produced and shared. In addition, two websites (www.ISSDethiopia.org and www.ISSDseed.org) and several Facebook pages are maintained.

Collaboration

Collaboration with BENEFIT programmes

In collaboration with BENEFIT partners, ISSD supports value chain development of malt barley, potato, sesame, sorghum and soybean. Annually, collaborative planning workshops are organized with the aim to review activity plans, celebrate success, discuss challenges and share lessons learnt in implementation. This is done under the leadership of BENEFIT PCU.

CASCAPE and ISSD work together in developing malt barley value chains in Amhara, SNNPR and Tigray. ISSD supported SPCs have been strengthened in their capacity and supported in their application for CoCs for malt barley seed production and marketing. Selected SPCs have been selling their seed to CASCAPE supported malt barley suppliers to Dashen Brewery, Asela Malt Factory and Raya Brewery. Specific outputs in 2018 include:

- 57 SPC (executive) members trained on seed business management;
- 412 stakeholders participated in field days on quality seed production in SNNPR and Tigray;
- 289 malt barley growers in Tigray trained on best agronomic practices;
- Regional malt barely platforms created for better linkage between supply and demand.

CASCAPE, ENTAG and ISSD work together in developing the potato value chain in Amhara. ISSD is increasing the availability of disease-free tubers for quality ware potato production in the region. Key to the intervention is availing plantlets cultured in vitro for disease-free potato mini-tuber production in phytosanitary safe screen houses. Specific outputs in 2018 include:

- Provision of plantlets facilitated;

- Second screen house constructed and farmers trained on screen house management;
- Mini-tuber and seed tuber production supervised in screen house and field respectively;
- Field day and potato platform organized;
- Specific gender gaps in the potato value chain identified and awareness created.

CASCAPE, SBN and ISSD work together in developing sesame value chains in Amhara and Tigray. ISSD's contribution focused on facilitating the availability of quality sesame seed produced by selected SPCs and PSPs in the north-western-most woredas of Ethiopia. Specific outputs in 2018 include:

- PVS and crowdsourcing trials conducted for the evaluation of 11 sesame varieties on research and farmer fields in Amhara;
- Trainings (of trainers) on quality sesame seed production, seed business management, SPC organizational management, and seed marketing provided;
- Agronomic trials on 10 ha of 10 farmers' fields aimed at increasing Setit-2 improved sesame variety productivity in two different locations in Tigray;
- 32 researchers, five subject matter specialists from woreda offices of agriculture and selected SBN staff members trained on seed production, seed value chains, ISFM, IPM, post-harvest management, marketing and gender mainstreaming for key rotational crops;
- Gender and nutrition analysis conducted to be used in future collaborative activities;
- Multiple experience sharing visits and fields days attended by among others policy makers.

SBN and ISSD work together in developing the sorghum value chain in Tigray. Key to the intervention were variety adaptation trials and striga management. Specific outputs in 2018 include:

- Six sorghum varieties, four improved and two local, evaluated by 27 farmers in adaptation trials at three locations in West Tigray and North West Tigray zones;
- 79 participants attended field day on sorghum adaptation and crowdsourcing trials;
- 125 participants visited evaluation of crop rotation on soil fertility and sesame yield trials;
- Laboratory analysis of environmental impact of different chemical applications in striga management underway;
- 26 woreda subject matter specialists from woreda offices of agriculture trained on integrated striga management and issues of gender mainstreaming.

CASCAPE, ENTAG and ISSD work together in developing the soya bean value chain in Oromia. Major activities include identifying stakeholders, organizing trading platform, capacity strengthening in quality seed production, facilitating collaboration and undertaking gender analysis in the value chain. Specific outputs in 2018 include:

- 80 qt certified seed produced by Homa PSP from four qt basic seed obtained from Bako ARC;
- 35 CIG members and five DAs trained on quality soya bean seed production, principles and practices of SPCs organization and management, seed business, seed marketing and gender in the soybean seed value chain;
- Collaboration between AGP and CASCAPE Jimma cluster facilitated to scale up best practices of ISSD in the thematic area of seed business and to transform CIGs into SPCs;
- Agreement reached to distribute the quality seed of soya bean produced in the project intervention area;
- Two soya bean trading platform meetings organized and facilitated by CASCAPE, ENTAG and ISSD with the participation of Clinton Health Access Initiative, N2Africa and seven unions including the cooperative federation linked to interested buyers/processors in Addis Ababa.

Collaboration with other projects and partners

ISSD collaborates closely with MoA, AGP, ATA, FAO, EIAR, selected CGIAR institutes and GIZ at national level and with BoAs, RCPAs, RARIs, selected universities and NGOs at regional state level.

Collaboration with Dutch private sector

Currently, ISSD collaborates with six Dutch/international companies invested in the Ethiopia seed sector (see chapter on improved markets).

Thematic collaboration

In addition to value chain development other important thematic areas of collaboration with BENEFIT partners include: gender; nutrition; scaling; capacity strengthening; access to finance; and M&E and communication.

Mainstreaming social inclusion & nutrition

ISSD gender and rural development experts share knowledge and plan collaborative activities in BENEFIT gender think tanks convened at national and regional state levels, and ISSD commits resources to collaborative interventions on nutrition, specifically home gardening, but to a rather limited extent.

Transferring responsibilities and ownership

With regards to the transfer of responsibilities from WCDI to PMU, ISSD is largely on schedule with what was proposed in 2015. Please see Table 3 for more details.

Table 3 Status update on transfer of responsibilities WCDI-PMU in ISSD

Responsibility	Transfer	Explanation
Annual planning and budgeting	Partially complete	PMU proposes focus areas for the coming year and WCDI gives feedback. Jointly, PMU and WCDI set boundaries to work planning, for example outputs targeted and criteria for target group selection and resource allocation. Activities are then proposed by regional units to which PMU and WCDI give critical feedback. WCDI compiles the consolidated plan, PMU reviews it and suggests edit before it is submitted to EKN. Based on the plan, WCDI proposes budget to which PMU gives feedback. PMU regularly consults regional units about budget utilization and allocation, which is valuable information incorporated in budgeting.
Staff recruitment	Complete	PMU is fully in control and consults with WCDI when need be, for example in developing/revising job descriptions and in shortlisting candidates.
External communication	Partially complete	BENEFIT Portfolio Director is lead contact with EKN unless delegated to BENEFIT Coordinator. EKN consults directly with PMU on technical issues ad hoc. PMU leads contact with Ethiopian partners. Due to practical reasons, WCDI is lead contact on international partners.
Program and financial reporting	Complete	Narrative and financial reports are drafted by PMU, reviewed by WCDI and compiled and controlled by PCU.
Technical assistance	Partially complete	PMU consults regional units on capacity needs and shares assessment with WCDI. WCDI evaluates and prioritizes capacity needs and provides or procures to provide technical assistance.

Conclusions and recommendations

Achievements

In summary, the main achievements of ISSD in 2018 were:

- CASCAPE and ISSD work together in developing malt barley value chains in Amhara, SNNPR and Tigray, where ISSD strengthened SPCs to produce and market quality malt barley seed;
- CASCAPE, ENTAG and ISSD work together in developing the potato value chain in Amhara, where ISSD is increasing the availability of disease-free tubers for ware potato production;
- CASCAPE, SBN and ISSD work together in developing sesame value chains in Amhara and Tigray, where ISSD's contribution focused on increasing availability of quality sesame seed;
- SBN and ISSD work together in developing the sorghum value chain in Tigray, where key to the intervention were variety adaptation trials and striga management;
- CASCAPE, ENTAG and ISSD work together in developing the soybean value chain in Oromia, where major activities include identifying stakeholders, organizing trading platform, capacity strengthening in quality seed production, facilitating collaboration and undertaking gender analysis in the value chain;
- ISSD collaborates closely with MoA, AGP, ATA, FAO, EIAR, selected CGIAR institutes and GIZ at national level and with BoAs, RCPAs, RARIs, selected universities and NGOs at regional state level

on increasing the availability and use of quality seed of new, improved and preferred varieties among female and male smallholder farmers;

- Currently, ISSD collaborates with six Dutch/international companies;
- Other important thematic areas of collaboration with BENEFIT partners include: gender; nutrition; scaling; capacity strengthening; access to finance; and M&E and communication;
- ISSD gender and rural development experts share knowledge and plan collaborative activities in BENEFIT gender think tanks convened at national and regional state levels;
- ISSD commits resources to collaborative nutrition interventions, specifically home gardening;
- With regards to the transfer of responsibilities from WCDI to PMU, ISSD is largely on schedule with what was proposed in 2015.

Challenges, opportunities and lessons learnt

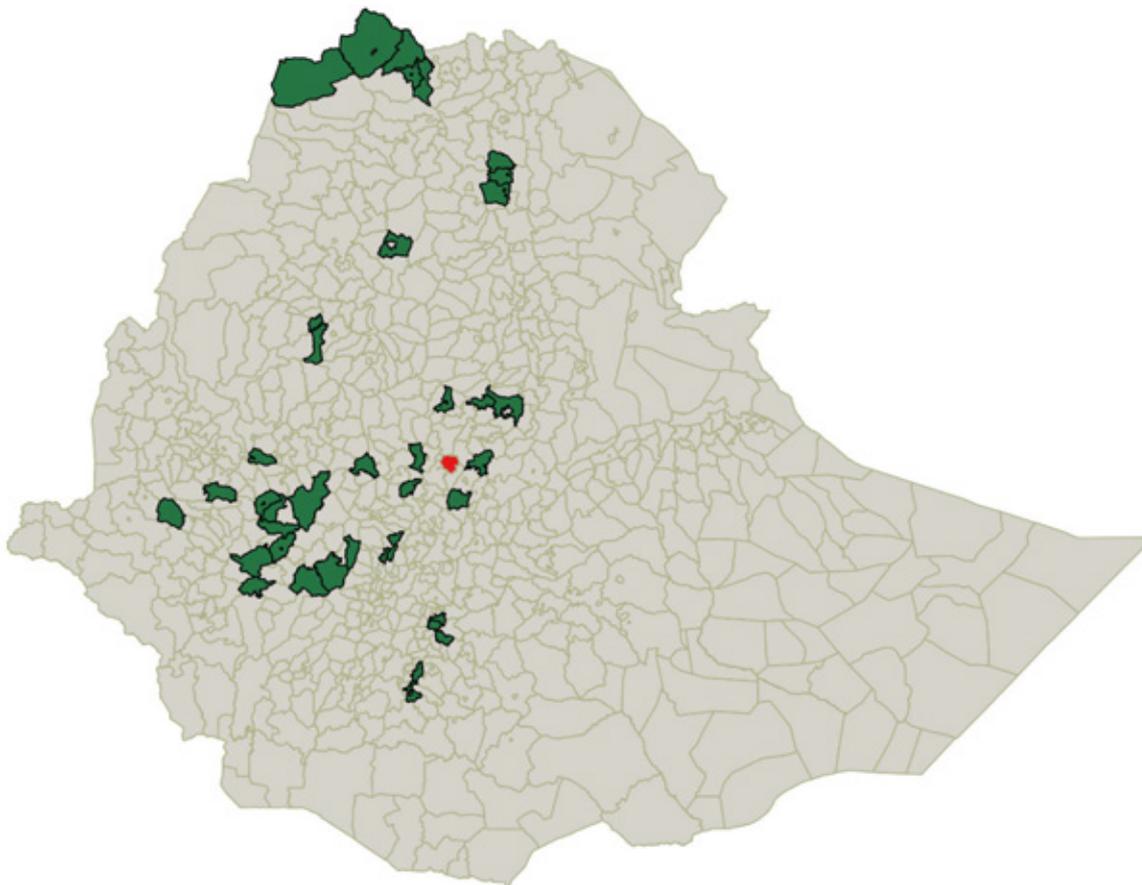
Collaborative activities generate results when partners jointly plan; coordinate tasks and allocate sufficient resources. Targets for resource allocation and shared outcomes should be set. An opportunity for ISSD is the investment in PSNP woredas that REALISE is making. REALISE can replicate and adapt ISSD best practices in the safety net woredas. However, challenges do persist, including weak integration of collaborative activities through limited resource allocation.

Way forward

In 2019, the commitment has been made to allocate 10% of each programme's budget to collaborative activities. Delegation of responsibility to focal persons in the coordination of collaborative activities is working well.







Introduction

The goal of BENEFIT CASCAPE is to support the Ethiopian government to increase agricultural productivity in a sustainable way in order to enhance agricultural growth and to achieve food security. The expected outcome of CASCAPE2 is 'Enhanced capacity of the research and extension system to generate demand-driven best-fit technologies and deliver these to farmers and conditions for uptake of these technologies is in place'. The planning emphasis in 2018 was to take-off in direction of more scaling than to direction of more testing and validation to reach about 300,000 farmers both directly and indirectly. However, we continued to finalize the nationally organized blend fertilizer trials started in the previous years. In 2018 we also planned to address the key challenges such as the seed supply for faba bean, potato, malt barley, food barely, bread wheat etc..., within ourselves and in collaboration with our BENEFIT partner ISSD. Proper alinement with AGP to incorporate our best fit practices in to the extension system of the country was one of our plan, together with the cascading of previously given ToTs in the form of capacity development to DAs and farmers. In addition to the cascading activities planned to be given by the support of AGP, we have also planned to give capacity development training to 95 research staffs and 960 extension personnel. To make our scaling approach more innovative, we planned to prepare recommendation mapping of some commodities such as malt barley and soya bean. With due emphasis to the mainstreaming of gender and nutrition activities in CASCAPE, a separated proposal was developed and submitted to World bank to bring an ad-on project on-board that can take these activities in a broader scale than to the level we were trying in our previous activities. The whole plan of the 2018 year was to attain a yield increase of at least 30% increase in all our intervention areas.

Major achievements

Table 1 summarizes major achievements in testing/validation, PEDs, scaling support, training and capacity building activities in 2018.

Program Reach and impact

- In the 2018 the program reached more than 361,000 farmers of which 2657 are reached directly through the CASCAPE's training, testing and validation, PED, trials and the nutrition sensitive agricultural activities on 32,299 ha of land. Of the total reached farmers, 54,553 (15%) were female farmers. The indirect reach including cascaded training provided by DAs, organic scaling and field days. The total reach is 97.5% against plan for the year;
- The adoption of improved technologies and practices have increased crop yields by about 25-100% (depending on crop type and agro-ecology) that has improved the income, nutrition and livelihoods of participating farmers.

Capacity development

- The programme also trained 809 (89 female) experts TOTs at woreda level on topics identified through the training need assessment (TNA);
- The SMS (subject matter specialists) and experts cascaded training and reached 4433 (1291 female) who in turn trained 1689 farmers. The TOTs were cascaded to DAs and farmers level with financial support provided by the AGP as per the existing agreement and joint plan with CASCAPE;
- CASCAPE trained a total of 192 (4 female) researchers on various topics including quality bottom up planning and participatory action research model; seed production, integrated soil fertility management, integrated pest management (IPM), gender mainstreaming, nutrition-sensitive agricultural practices and research impact assessment;
- In-house training was organized for 125 experts at national level including program experts in university clusters in five-rounds on topics identified by the TNA.

Best- practice validation and scaling support

- In 2018, the program conducted 58 testing and validation trials, 19 pre-extension demonstrations (PEDs) and pilot scaling demonstrations. In addition, 57 woredas were supported with woreda development plan preparation;
- In the reporting year, 16 best-fit practice manuals have been prepared of which 8 best fit practices (potato and Rhodes grass from Bahir Dar, papaya, mung bean and garlic from Mekelle, soybean and maize from Jimma, malt barley from Hawassa) selected to be incorporated into the national extension package;
- A total of 349 home gardens were established to promote diversified and nutrient dense food production for household consumption. As much as possible, women at reproductive age and with children below 2 were targeted. The launching of CANAG (CASCAPE Nutrition and Gender) project (World Bank funded) has assisted in scaling out of CASCAPE practices in 12 more woredas.

Stakeholder meeting and policy influence

- A national stakeholder workshop was organized to share the bottom-up planning and participatory action research pathways piloted by CASCAPE. Over 60 participants including State Minister of MoA, EIAR Director General and Deputy DGs, presidents and deans of universities, Directors of the Regional Agriculture Research Institutes (RARIs), heads of Bureaus of Agriculture and MoA Extension Directorate and BENEFIT staff members attended the workshop;
- CASCAPE in collaboration with the Ministry of Agriculture (MoA) organized a high level policy field excursion with members of the parliaments to visit scaling-up support activities around Hawassa (Boricha woreda) in October 2018;
- CASCAPE-supported the establishment of Research-Extension-education platform following the high level policy dialogue and national stakeholder meeting in which CASCAPE's approach was presented and discussed;
- CASCAPE supported the extension directorate to organize two national ADPLAC (Agricultural Development Partners Linkage Advisory Council) meetings to strengthen linkage between research and extension actors.

Dissemination and knowledge sharing

- In addition, the programme prepared a policy brief and two technical papers focusing on technical and agronomic issues and constraints concerning blend fertilizer recommendations and soil fertility mapping in Ethiopia;
- A number of in-depth study reports highlighting technical and policy aspects of agricultural research and extension in Ethiopia have been completed. These include the gap assessment in implementation of participatory action research (PAR) and extension; policy landscape analysis elaborating on the processes and impact of agricultural research and extension policies; analysis of panel data on drivers of adoption of agricultural technologies; identification and mapping of recommendation domains based on biophysical (soil, agro-ecology, length of growing period, pests and disease, etc) and socio-economic variables (market access, input supply, etc). These results have formed the basis for national stakeholder meeting and policy dialogue that are mentioned above;
- By the order from the state minister and director general of Extension directorate, a documentary film was prepared to disseminate successful positive experiences and best practices. Some examples of mass media that broadcast the documentary include Ethiopian TV and Watla TV broadcast (dated October 9, 2018), a column on nationally prominent Newspapers such as the Ethiopian Herald ([Sunday 30 December 2018](#)) and Addis Zemen (Saturday, November 10, 2018);
- A number of journal papers on the project results have been submitted. Prominent of these is a paper entitled, "Explaining bread wheat (*Triticum aestivum*) yield differences by soil properties and fertilizer rates in the highlands of Ethiopia" has been published online by Geoderma (Elsevier). This paper is highly policy-relevant as it provides some degree of validation for the blend fertilizer approach taken, and is shows what would be needed in terms of fertilizer investment to reach self-sufficiency as an alternative to expensive imports.

Major challenges, opportunities, lessons learned and way forward

Challenges

- Lack of adequate amount of early generation seeds (EGS) and variety replacement when required (scaling challenge);
- Extremes moisture regimes and shortage of rainfall in some areas during the grain filling stage; hail and rain during harvest time in the highlands;
- High staff turnover and institutional setup at national regional, woreda and kebele level for extension;
- The political instability in some parts of the country forced frequent rescheduling of meetings and affected project reach;
- Lack of labour-saving technologies (e.g. row planter and harvester for sesame) for demonstration and dissemination (plans not implemented);
- Pests and diseases such as bacterial blight and late blight on potato, American fall army worm on maize, ring spot virus on papaya;
- Lack/shortage of agro-chemicals for disease, insect pests and weed management;
- Distance from cluster to field sites in some clusters (e.g. Kafta Humera Woreda and Tsegede for Mekelle University clusters);
- Weak market linkage for some of the produce (e.g. Soya bean) and the exclusion of soya bean from the main government extension packages;
- Participants' misconception about CASCAPE as an NGO, especially expecting better per diem payments even when they participate at woreda level trainings;
- Seasonal workload on DAs and woreda SMS team has limited their engagement in capacity development support;
- Shortage of land to conduct trials (e.g., Endamehoni Woreda in Tigray region);
- Work load of the CASCAPE staffs that overstretched the experts.

Opportunities

- High demand for high yielding, locally adaptive and disease resistant crop varieties;
- The presence of regional and federal research centres in CASCAPE interventions areas;
- Availability of Government structure at Kebele level;

- Presence of highly organized communities ready to adopt best-fit technologies. Regional policy makers also recognized the importance of research for development more than ever;
- Presence of conducive agroecology and international market for some of the commodities (e.g., Sesame);
- The new policy of woreda development plan that gives CASCAPE the opportunity to incorporate validated practices;
- The BENEFIT level collaborative activities added value in terms of value chain development and refining extension message;
- Improved linkage and developing partnership with EIAR to institutionalize CASCAPE validated best-fit practices and approaches;
- Collaboration avoids duplication of efforts and resources of BENEFIT Staffs and stakeholders.

Lessons learned

- Early selection of farmers and sites and making timely arrangement of inputs is important for proper implementation of the trials;
- Enhancing the capacity of seed producers by aligning with seed multiplication groups at kebele level;
- Promoting green banking can contribute to improving sesame production and sustainable business by investors;
- Platforms are important forum to bring key stakeholders together to discuss on issues of common interest and share responsibility;
- Farmers to farmers visit are key for quick technology dissemination and sustainable adoption;
- We learned that linking farmers to potential market and strengthening the existing once motivate farmers to produce good quality output (e.g., malt barley);
- Clustering extension approach is an appropriate tool for seed multiplication and effective scaling of best fit technologies;
- Involvement of the woreda and regional extension personnel increases the uptake of validated best fit practice manuals;
- Joint planning is effective tool in cascading ToTs at kebele level (DAs and farmers).

The ways forward

- Institutionalisation of CASCAPE validated best practices within the research and extension system is the most important next activity for our programme;
- The exposure visits and dialogue with higher level policy makers such as MPs and ministers will be the focus to enhance institutionalisation;
- The research-extension-university linkage is an important institutional innovation that needs to be promoted at regional and national levels;
- Preparation of extension package (including mechanisation) for wealthier and model farmers needs to get focus;
- Documentation and dissemination of outputs from the four years' intervention (e.g. CASCAPE research book, publication from PRA & baseline reports, proceedings) should be the focus to turn data into information and wisdom;
- Conduct end line survey and impact assessment of CASCAPE intervention.

Quality and quantity of sustainable agricultural production

In 2018, the programme conducted 58 testing and validation trials, 19 pre-extension demonstrations (PEDs) and pilot scaling demonstrations. In addition, 57 woredas were supported with woreda development plan preparation which also served as a means to incorporate CASCAPE validated practices.

Based on the results of the testing, validation and pilot scaling demonstrations conducted over the past 3 years, 16 best-fit practice manuals have been prepared. Through consultation with regional and national extension programme and with endorsement of the state minister, 8 best fit practices (potato and Rhodes grass from Bahir Dar, papaya, mung bean and garlic from Mekelle, soybean and maize from Jimma, malt barley from Hawassa) selected to be incorporated into the national extension package. In addition, the extension director has requested CASCAPE to assist with the formulation of extension package for model farmers based on verified best fit practices.

A total of 24 (about 4 practices per cluster) best technologies were incorporated in the woreda development plan reaching 26,991 (7680 female) smallholder farmers which is about 80% achievement against plan for 2018. This is termed as the "organic scaling". The woredas are implementing the practices with their own budget and support of AGP with CASCAPE providing some M&E and training support alone.

The programme trained 809 (89 female) SMS and experts TOTs at woreda level on topics identified through the training need assessment (TNA). The SMS (subject matter specialists) and experts cascaded training reached 4433 (1291 female) who in turn trained 1689 farmers. In addition, the programme trained a total of 192 (4 female) researchers on various topics. In-house training was organized for 125 experts at national level including programme experts in university clusters in five-rounds on topics identified by the TNA.

Improved enabling environment

One of the result areas in CASCAPE is to support policy makers to make informed decisions at national and regional levels about agricultural sector development. In order to provide demonstrated evidence for policy makers and other stakeholder, the programme implemented 9 in-depth studies on strategic issues such blend fertilizer recommendation, drivers of adoption survey, policy landscape and formulation study, etc. The findings of some of these studies and broader program results are shared in 8 thematic platforms and 13 stakeholder workshops at regional and national levels (Table 10). In addition, one policy brief on blend fertilizer and three technical papers focusing on soil fertility and participatory action research were prepared and shared to policy makers and other stakeholders. Specifically, CASCAPE in collaboration with the Ministry of Agriculture (MoA) organized a high level policy field excursion with members of the parliament to visit CASCAPE scaling-up support activities around Hawassa. The field visit was followed by a one-day panel discussion on policy and research implications of CASCAPE results. Drivers for adoption (D4A) using panel data are investigated and a comprehensive report at national level is prepared on the factors that inhibit or promote the adoption of agricultural best practices by farmers. A national workshop will be organized to share results in addition to technical reports and science paper.

Partnership and collaboration

CASCAPE is aligned with the Agricultural Growth programme (AGP) component 2 (best practice identification, validation and scaling). For each CASCAPE supported PEDs, AGP conducts 4 in all the scaling woredas. For all TOTs CASCAPE conducted at woreda level, AGP conducts cascading at kebele level with DAs and farmers. At regional and national levels, CASCAPE is involved in quarterly TC meetings and working groups of AGP. In addition, regional university clusters work in close collaboration with RARIS and BoA extension department. Part-time researchers and extension workers are assigned to work on regular basis with the project experts. This is considered as one mechanism of institutionalisation and transfer of skills. Within BENEFIT partnership, CASCAPE works closely with ISSD, SBN and ENTAG in place product combinations in four regions. In the framework of this collaboration, CASCAPE leads in identifying best-fit technologies and practices with recently released crop varieties. Provided that seed is crucial scaling challenge, CASCAPE seeks for the assistance of ISSD in establishing community-based seed systems and transforming them in SPCs (seed producer cooperatives). Several commodities including sesame (Humera and Matama with SBN), soybean (Jimma), sorghum, food and malt barley and potato in Amhara are being addressed through this collaboration.

Table 1 Summary of CASCAPE achievements in 2018

Indicators	Plan 2018	Achievement 2018	
		No	%
Number of smallholder farmers reached	370, 892	361,620	97.5
Testing and validation trials/demos	316	309	97.8
Number of farmers reached through pilot scaling and PED	1978	2067	104.5
Hectares of farmland (direct)	31,892	32,299	101.3
New best-fit practice manuals prepared	16	16	100
Organic scaling	33,934	26,991	79.5
No. of farmers trained on improved	3,642	3,618	99.3
Extension experts and DAs trained	3,248	3,292	101.4
Number of participants - cascaded TOTs	2,000	6,277	313.9
Number of researchers trained (EIAR/RARIs)	95	192	202.1
In-house training in 5 round	125	125	100
Home garden established (diet diversification)	330	349	105.8
In-depth studies conducted	10	9	90
Stakeholders workshop conducted (national/regional)	20	24	120
National/regional Platforms established/strengthened	8	8	100
Policy briefs prepared based on in-depth study results	2	2	100

Quality and quantity of sustainable agricultural production

Best fit agricultural practices developed and made available for dissemination

Testing and validation

In 2018, the programme conducted 58 testing and validation trials, 19 pre-extension demonstrations (PEDs) and pilot scaling demonstrations (Table 2). A substantial increase in yield was shown as compared to the CSA reported yields (Table 3). In addition, 57 woredas were supported with woreda development plan preparation which also served as a means to incorporate CASCAPE validated practices. Through scaling and PEDs, the programme reached 361,620 (54218 female) farmers. Based on the results of the testing, validation and pilot scaling demonstrations conducted over the past 3 years, 16 best-fit practice manuals have been prepared. Through consultation with regional and national extension programme and with endorsement of the state minister, 8 best fit practices (potato and Rhodes grass from Bahir Dar, papaya, mung bean and garlic from Mekelle, soybean and maize from Jimma, malt barley from Hawassa) selected to be incorporated into the national extension package. In addition, the extension director has requested CASCAPE to assist with the formulation of extension package for model farmers based on verified best fit practices.

Table 2 Number of testing and validation trials conducted in 2018

Cluster	No. of activities			Total
	Crops	Fertilizers/ISFM	Livestock (forage)	
Addis Ababa University	3	3	-	6
Bahir Dar University	7	3	3	13
Hawassa University	9	4	-	13
Jimma University	10	3	-	13
Mekelle University	10	3	-	13
Total	39	16	3	58

Table 3 Yield increment as a result of CASCAPE best fit practices in PEDs/scaling activities

Cluster/region	Crop/variety	CASCAPE PED/scaling trial yield (t/ha)	Regional CSA (yield (t/ha))	% increment over CSA
Oromia-Central Oromia & Amhara-North Shewa	Bread wheat (Sanate)	5.77	2.9	99
AAU/Oromia-central	Food barley (HB-1307)	6.53	2.2	196.8
AAU/Oromia-central	Teff (Dega teff)	2.45	1.9	28.9
BDU/Amhara	Food barley (HB-1307)	2.65	1.97	34.5
BDU/Amhara	Wheat	4.18	2.53	65.2
BDU/Amhara	Potato (Belete)	40.35	14.9	170.8
HU/SNNPR	Maize (BH661)	4.73	2.45	93.1
HU/SNNPR	Malt barley	3.75	1.9	97.37
HU/SNNPR	Haricot bean	1.94	1.56	24.36
HU/SNNPR	Wheat	3.46	2.66	30.08
HU/SNNPR	Maize (BH661)	4.73	2.45	93.06
JU/Oromia southwest	Maize (BH661)	6.2	4.1	51.2
JU/ Oromia southwest	Wheat	5.23	2.4	117.9
JU/ Oromia southwest	Soybean	2.5	1.7	47.1
MU/Tigray	Wheat	36.5	19.8	84.3
MU/Tigray	Faba bean	20.7	16.5	25.5
MU/Tigray	Potato (Belete)	210	77.4	171.3
MU/Tigray	Garlic	93	72.3	28.6

Enhancing capacity of EIAR/RARIs in best-fit technology testing

CASCADE trained a total of 192 (4 female) researchers on various topics including quality bottom up planning and participatory action research model; seed production, integrated soil fertility management, integrated pest management (IPM), gender mainstreaming, nutrition-sensitive agricultural practices and research impact assessment. With specific request from Oromia Agricultural Research Institute (OARI), a total of 104 researchers were trained on topics such as experimental design and Data analysis, Impact analysis tools and approaches, communication, nutrition mainstreaming and gender mainstreaming supported by appropriate tools. Similarly, 54 researchers from TARI trained by CASCADE on topics such as quality seed production in sesame, ISFM (QUEFTS), storage management, marketing, gender mainstreaming and IPM and integrated protocol for validation of best practices and preparation of best practice manuals. In addition, Mekelle and Bahir Dar university clusters have conducted a joint research programmes with TARI (Tigray Agricultural Research Institute) and ARARI (Amhara Region Agricultural Research Institute). Topics include crop variety adaptation trial on durum wheat and malt barley (Alamata research centre) and banana production technologies (western Amhara).

Delivering demand-driven technology to the extension department at regional and woreda level

Based on the results of the testing, validation and pilot scaling demonstrations conducted over the past 3 years, 16 best-fit practice manuals have been prepared and delivered to the regional BoA and federal MoA. Through consultation with regional and national extension program and with endorsement of the state minister, 8 best fit practices (potato and Rhodes grass from Bahir Dar, papaya, mung bean and garlic from Mekelle, soybean and maize from Jimma, malt barley from Hawassa) selected to be incorporated into the national extension package. More importantly, the participation of CASCADE in the woreda development plan preparation has created ample opportunity to incorporate validated best practices in the woreda agricultural development plan. Accordingly, a total of 24 demand driven best technologies were incorporated in the woreda development plan. The woredas are implementing the practices with government allocated budget in addition to the financial support from AGP.

The collaboration of CASCADE with Canadian supported project, CDSF (capacity development support facility for AGP) enabled the translation of four best practices into simplified extension manuals for use by DAs and SMS in training farmers at FTC level. The commodities include malt barley (SNNPR), food barley (Bahir Dar cluster), Hidase wheat variety (Addis Ababa cluster) and Papaya (Mekelle university). The extension materials include posters and laminated charts with simplified key agronomic messages from the BPMs. To support better scaling, these products are printed and disseminated to FTCs and WoA in our reach and beyond

Research priorities and results are discussed between RARIs, Universities and Extension Department at federal and regional level

Regional and national workshops were organized with EIAR and RARIs to share research priorities in the regions. In 2018, we have conducted 10 stakeholder workshops in the regions and 3 national workshops with EIAR. EIAR-CASCADE workshop discussed bottom-up planning and participatory action research pathways piloted by CASCADE. Over 60 participants including State Minister of MoA, EIAR Director General and Deputy DGs, presidents and deans of universities, Directors of the Regional Agriculture Research Institutes (RARIs), heads of Bureaus of Agriculture and MoA Extension Directorate and BENEFIT staff members attended the workshop. As per the recommendations, PAR based trials have been implemented in 400 ha across four regions.

In-depth research and surveys

At national level, the programme completed a number of in-depth studies that have important policy relevance. These include policy landscape analysis, drivers for adoption (D4A) panel data analysis with 2280 farm households to identify promoters and inhibitors of adoption; soil characterisation and mapping in two woredas (K/Humera and Matama); recommendation domain identification and mapping in 7 woredas, and blend fertilizer trials to develop crop-site and soil specific fertilizer recommendation. The regional cluster themes have also completed a number of in-depth studies such as determinants of sesame yield in Humera (Mekelle); row-spacing and seeding rate of teff and rhizobium strain efficiency in N-fixation on chick pea (Addis Ababa), and soybean intercropping; and land use efficiency of relay

cropping of maize-chickpea and composting and mineral fertilizer combinations in enhancing wheat yields (Hawassa cluster) to mention few. The findings of these surveys and studies will be used in policy dialogues and stakeholder platforms (e.g., D4A findings will be discussed with MoA officials). The sustainability of recommendation mapping depends on the institutionalisation of the approach. To this effect, two Ethiopian universities—Addis Ababa and Mekele—have been identified and have the software, hardware, basic capacities and the mandate to make the maps and support woredas to use the maps as a tool for woreda planning. These two universities will serve as centres of excellence to institutionalize the approach within the research (EIAR and RARIs).

Increased capacity of woredas to develop and implement agricultural development plans, including strategies for scaling

Capacity of extension to disseminate best-fit technologies through implementing scaling strategies enhanced

Back in 2016, training need assessment (TNA) was executed to identify priority needs of extension experts, DAs and subject matter specialists. Based on the findings, series of TOT and cascaded training activities were implemented in 2018 (Table 4). The programme trained 809 (89 female) SMS and experts TOTs at woreda level on topics identified through the training need assessment (TNA). The SMS (subject matter specialists) and experts cascaded training reached 4433 (1291 female) who in turn trained 1689 farmers. The TOTs were cascaded to DAs and farmers level with financial support provided by the AGP as per the existing agreement and joint plan with CASCAPE. As result, the programme achieved 121% of the plan to train DAs.

In addition, the programme trained a total of 192 (4 female) researchers on various topics. Topics include: Identification of major pests & diseases, Approach of Value chain analysis, experimental design and field trials management, Participatory Monitoring and Evaluation, Data collection, analysis and Report writing skills, Managerial leadership, Research paper writing skill and documentation (for OARI and CASCAPE staff), Impact analysis tools and approaches (for OARI and JU-CASCAPE staff), Gender mainstreaming supported (for OARI and JU-CASCAPE staff), Nutrition mainstreaming (for OARI and JU-CASCAPE staff), Garlic white rot management and potato scaling. Best practice validation and scaling strategies, Participatory extension approaches, Post-harvest management, Gender and nutrition, tropical fruit production and management, Seed production, management and marketing and many more for both SMS and research experts. As result of this training and subsequent stakeholder discussion with research directors at EIAR and RARIs, the PAR approach is now being promoted within the research system.

In addition, in-house training was organized for 125 experts at national level including programme experts in university clusters in five-rounds on topics identified by the TNA (such as; ISFM Nutrition and gender, Post-harvest management of crops, PAR to EIAR and RARIs, documentation and data management, value chain analysis and development). An outcome level assessment of the impact of the ToTs have shown that the new skills acquired through the trainings have enabled the experts to do their jobs better. This is because the ToTs were conducted based on real need that bridges the skill gaps. Full report of the outcome level assessment is available. In addition, University clusters have supported 6 postgraduate student to pursue their MSc in the country.

Table 4 Number of extension experts (SMS & DAs) trained by CASCAPE and cascaded by AGP in 2018

University cluster	No. Trainees		
	ToTs organized by CASCAPE	Cascaded training (AGP organized training)	On-spot training
Addis Ababa	147	654	142
Bahir Dar	103	792	70
Hawassa	162	2318	695
Jimma	181	383	536
Mekelle	216	286	246
Total	809	4433	1689

Support development and implementation of agricultural woreda plans

Support to the bottom up planning and woreda development plan preparation has been highlighted in the AGP PIM to which resources have committed, particularly in the first and second level intervention woreda. In 2018, the programme supported the preparation of 57 woreda development plans (Table 5). The nature of support takes different forms in different regions including priority setting using PRA and CLPP tools; training in the bottom up planning process, revision of budget and plans prepared by woreda experts, participation in the plan preparation workshops, etc. The regional team shared experiences of CASCAPE to AGP and BoA how to conduct focus group discussion, problem identification and prioritization strategies. The support given to the AGP and BoA ranges from creating conceptual clarity on the agricultural development plan to field level practical training. During the support, CASCAPE also facilitated to incorporate its best fit practices into woreda development plan.

Table 5 Number of woredas received support on preparation of development plan

University/Cluster	No of woredas supported
Addis Ababa University	9
Bahir Dar University	12
Hawassa University	10
Jimma University	13
Mekelle University	13
Total	57

Pre-extension demonstration (PED)

PEDs are key activity in the CASCAPE innovation pathway in which practices that have proven to be best fitting to a given agro-ecology, soil and socio-economic conditions in the testing/validation phase are passed to the next level – on a large number of farmers and 0.5 ha plot size. In 2018, the programme executed 19 PED plots (Table 6) while AGP laid out more than 100 PEDs in scaling woredas. Special arrangement (20/80) has been made to finance and manage 20% of the PEDs by CASCAPE and 80% PEDs by AGP. In South, AGP financed and managed scaling instead of doing further PEDs. One PED activity covers a large number of farmers allowing the total reach of 1205 in CASCAPE implemented PEDs alone (Table 7).

Table 6 Number of PEDs conducted

University/Cluster	PEDs
Addis Ababa University	3
Bahir Dar University	3
Hawassa University	7
Jimma University	3
Mekelle University	3
Total	19

Table 7 Number of farmers reached through pre-extension demonstrations (PED) on farm fields

	No. of farmers			FTC
	Male	Female	Total	
Addis Ababa University	91	11	102	7
Bahir Dar University	341	70	411	19
Hawassa University	210	179	389	0
Jimma University	211	64	275	0
Mekelle University	17	11	28	3
Total	870	335	1205	29

Enhanced capacity of the woredas to implement effective woreda agricultural development plans including strategies for scaling

Best-fit practices that were tested and validated in CASCAPE phase I are now in scaling stage, but scaling is not primarily mandate for CASCAPE. Our role has been to provide training support and methodological backstopping and M&E for the scaling activities in 55 scaling woredas. These are conceptualised as the “pilot scaling and scaling support activities”. The technologies include improved crop varieties and package of management practices (row planting, fertilizer application, weed control, etc). We also evaluate how the scaling activities are being implemented by the woredas and the AGP. Cluster teams make a number of field visits and there is plan to follow up, monitor and evaluate the impact of these activities. The number of farmers reached through scaling support activities in 2018 are presented in Table 8. Having been impressed by the increased productivity with best fit practices, the AGP and WoA are providing the necessary resources for inputs and assigned devoted extension experts to implement the scaling trials and PEDs.

Table 8 Number of farmers reached through scaling support (including organic scaling)

	No. of farmers			FTC
	Male	Female	Total	
Addis Ababa University	33934	1672	35606	
Bahir Dar University	34048	4329	38377	
Hawassa University	148,492	30,937	179,429	
Jimma University	67,102	9,553	76,655	
Mekelle University	22,621	7,727	30,388	
Total	306197	54218	360415	

Diversified agricultural products are made available

Agriculture is the only realistic way for most people to get the nutrients they need. Agriculture has also its own potential to alleviate people from malnutrition and hunger. Given the potential of the sector, it is very important to give attention to the diversity of products from the sector. In this regard, CASCAPE is working hard to support the nutrition requirements of the community through production, promotion, and consumption of nutrient dense crops through the different activities. Fruit and vegetable production through home gardening is one of the approach which the programme follows. These activities have been recognized as a nutrition- and gender-sensitive intervention and there is an ad-on project CANAG included in last quarter of the reporting year so that these are aggressively expanded in the coming year. Accordingly, in 2018 CASCAPE through its cluster projects have established and supported 349 home gardens with the aim of promotion, production and consumption of nutrient dense fruit and vegetables (Table 9). Of these farmers the vast majorities are women at reproductive age and having young children. Such an activity also increases access to micronutrient intake and support households’ income generation from the sale of vegetables produce. The project has provided training on modern gardens production techniques, and management system for the farmers.

Table 9 Home garden activities per university cluster

University cluster	No of home gardens	Nutrition dense crops promoted
Addis Ababa University	60	Swiss chard, carrot, read beat, and Ethiopian kale
Bahir Dar University	64	Swiss chard, carrot, head cabbage, beet root, and lettuce)
Hawassa University	60	Carrot, head cabbage, and beet root
Jimma University	90	Swiss chard, carrot, kale, lettuce, and head cabbage
Mekelle University	75	Sweet potato, Swiss chard, cabbage, lettuce, and carrot
Total	349	

Mainstreaming social inclusion and nutrition

With respect to gender & nutrition sensitive agriculture, a training was organised in February 2018 jointly for ISSD gender experts and CASCAPE gender/nutrition focal persons. The training was meant to exchange lessons learned on gender mainstreaming and nutrition-sensitive agriculture among the two projects. ISSD shared their relevant experiences on how they were able to meet their self-declared target of 50% female beneficiaries for informal seed system activities. This resulted in new insights among CASCAPE gender/nutrition focal persons so as to what they could practically do to increase the target of female farmers in CASCAPE regular activities. Practical tips were exchanged such as organising field days and trainings on convenient times for women, and organising specific field days for female farmers on topics relevant for them. On the other hand, CASCAPE staff shared experiences on how to work on nutrition dense crops, and how to work in a nutrition-sensitive manner on agricultural activities. Lessons learned for ISSD staff were that working on seed alone will not automatically increase the nutritional status of men and women. More work is needed such as awareness raising on the nutritional status of farming communities & why nutrition is important, as well as practical complementary activities such as recipe demonstration and practical trainings on hygiene and processing of nutritious food crops. As a result of this training, ISSD and CASCAPE agreed to conduct a seed system analysis for specified nutrition dense crops (such as indigenous kale types and some pulses). Moreover, ISSD committed to support in linking CASCAPE to suppliers of seed for hybrid varieties of nutrition dense crops such as carrots, pumpkin, lettuce, and others.

Conclusions and recommendations

Achievements

The following are key achievements of the 2018 reporting year:

- In 2018 CASCAPE reached 361,620 farmers directly and indirectly; of these the testing and validation and PED covered an area of 32,299 ha farm land;
- 16 different technologies mainstreamed in the extension systems through the woreda development;
- Significant yield increase was achieved during the reporting year from the different clusters on different crops (e.g. 72.2% increase for lentil, 14.5% increase for teff row planting, 171.8% increase for barley over the regional average, 154.6% increase for potato over the regional average, 77% increase of faba bean variety over the local varieties, average maize productivity reached 68.07 qt/ha (with 40.74 min. and 94.90 qt/ha) in mid-land of Jimma area);
- All the fertilizer trials and the PED activities across the different clusters were conducted as planned;
- 28 best fit practices are being prepared by 5 university clusters for handover and incorporation into the national extension package;
- Translation of four BFPM into simplified extension material for farmer training by DAs has progressed well in collaboration with CDSF;
- In an effort to alleviate the seed problem, four seed producing groups were organized in four woredas of Jimma area and produced 653 quintals of improved wheat seed; similarly, 3 seed producer groups in Tigray has produced 3,871.5 quintal of improved wheat;
- Capacity development training was given across the different clusters and the SMS and DAs are more capacitated than ever and the AGP is also started cascading activities on our agreed 80/20 proportion;
- With aim of sharing CASCAPE approach and key results, a high level political excursion and workshop was successfully conducted involving the agriculture standing committee of the MPs, RARI DGs and DDGs, AGP officials;
- Thematic platforms and value chain development workshops were conducted (Malt barley platform and value chain, soya bean platform and value chain etc).

Challenges, opportunities and lessons learnt

- Restricted mobility due to security problems was a serious problem in some parts of Oromia, South and Amhara, which affected follow of trials and data collection;
- Pests and diseases were also another problem affecting our trials and validation activities;
- Access to good quality seed, especially that of vegetables was again a challenge this year;
- Weather related problems include low and erratic rainfall (e.g., in Tigray), hail, frost damage etc. have affecting crops;

-
- High turnover rate of subject matter specialists and DAs at woreda and kebele level remains a problem.

Among the emerging opportunities are:

- Alignment and joint planning with AGP enabled cascading of training at kebele levels with DAs;
- High demand for high yielding, locally adaptive varieties by farmers;
- The involvement of CASCAPE in the woreda development plan preparation opens up room for incorporation of BFPs;
- The good working relation with extension directorate and EIAR provides good grounds for the institutionalisation of project approach and successful results. In 2018, EIAR supported the implementation trials following PAR approach in 400 ha in four regions;
- The launching of CANAG provides additional funding to advance nutrition-sensitive agriculture (home gardens);
- The presence of part time staffs at RARIs and seconded staffs in the MoA facilitated communication of evidences including cascading trainings (e.g. Jimma CASCAPE alone trained 292 SMS and DAs, of which 79 were female);
- Collaborative activities between the BENEFIT programmes was also an opportunity to accomplish our activities.

Way forward

Based on successful results and best practices, institutionalisation of programme approach (e.g., bottom up planning, university-research-extension linkage, etc) and best fit practices into the research and extension system remains the main focus for 2019. Based on the TNA, capacitating the research and woreda extension staffs through training also contributes towards sustainable implementation of CASCAPE piloted approaches. In addition, experience sharing and dissemination of results to influence policy will be emphasised. For this reason, national synthesis and regional policy documents will be prepared; science papers will be written and stakeholder workshops will be organized.

Improved enabling environment

One of the result areas in CASCAPE is to strengthen the enabling institutional environment for the agricultural sector development. In order to attain this strategic objective, the project has assisted policy makers to make informed decisions at national and regional levels about research and extension, thereby addressing the agricultural production constraints while at the same time seizing the existing opportunities. Activities carried out in 2018 towards contributing to this result area are discussed in the following sections

Regional and national policy makers make informed decisions about agricultural research and extension opportunities and challenges

Policy dialogue conducted

CASCAPE in collaboration with the Ministry of Agriculture (MoA) organized a high level policy field excursion with members of the parliament to visit CASCAPE scaling-up support activities around Hawassa (Boricha woreda) on October 1-2, 2018. About forty high level officials were participated, including agricultural affairs standing committee of the members of the parliament, federal MoA and South bureaus of agriculture directors and experts, researchers from Ethiopian Institute of Agricultural Research (EIAR) and South region agricultural research Institutes, directors from south seed enterprise, federal and regional AGP representatives, staffs of Hawassa universities and the media.

The field visit was followed by a one-day panel discussion on policy and research implications of CASCAPE results, to inform and sensitize stakeholders (policy makers, researchers, seed multipliers, etc.) on the challenges related to agriculture scaling and determine how each organization can contribute towards an efficient technology transfer in the agriculture sector. Key issues discussed included how to ensure sustainability through institutionalization, strengthening linkage among researchers, universities and the extension system, how to address availability and quality seed issues and the great need to work on specific fertilizer recommendations that takes soil health and management into consideration.

In the regional clusters a number of policy dialogue were organized including policy dialogues on seed delivery system and human-wild life conflict (e.g., Jimma cluster).

Policy briefs prepared

The NPMU prepared one policy brief on blend fertilizer and three technical papers focusing on soil fertility and participatory action research. A one-day workshop (during high level policy field excursion) was organized for the agricultural standing committee of the parliament to acquaint them with technical and economic issues related to blend fertilizer recommendations that have recently been promoted in the country. The policy briefs and technical documents were distributed to different stakeholders.

Planned and agreed to incorporate CASCAPE BFPs in extension package (special package for model)

Different best fit practices have been identified, verified and documented by CASCAPE project. But incorporation of these best fit practices in the framework extension package has been lacking. Currently, the extension directorate of MoA has planned and agreed to incorporate the best practices of CASCAPE during the preparation of package for the model farmers in this year. In line with this, the extension directorate has requested CASCAPE to assist with the formulation of this special package.

Project results, in-depth studies, and policy briefs are actively shared with stakeholders for uptake of agricultural technologies & practices is strengthened

Commodity platforms and stakeholder meetings

A national stakeholder workshop was organized to share the bottom-up planning and participatory action research pathways piloted by CASCAPE. Over 60 participants including State Minister of MoA, EIAR Director General and Deputy DGs, presidents and deans of universities, Directors of the Regional Agriculture Research Institutes (RARIs), heads of Bureaus of Agriculture and MoA Extension

Directorate and BENEFIT staff members attended the workshop. After deliberating on the CASCAPE innovation pathways, the meeting recommended the approach to be institutionalized within the research and extension system. EIAR takes the lead in taking the approach forward and during the 2018 plating season alone, 400 ha of land was planted with CASCAPE approach in four regions (Tigray, Amhara, Oromia and South). Currently, CASCAPE is preparing CASCAPE approach paper for use by the researchers at EIAR and RARIs as part of the institutionalization of the approach.

ADPLAC (Agricultural Development Partners Linkage Advisory Council) is one the innovation platforms used to bring together different stakeholders to identify solutions to common agricultural production and productivity problems. CASCAPE, as the main stakeholder, had supported and participated at nation ADPLAC meeting. One of the CASCAPE staff actively involved in organizing the national meeting. In addition, regional teams have participated in regional, zonal and woreda ADPLAC meeting, taking this as opportunity to share programme results and experiences with wider stakeholders. In these meetings, heads of WoA, AGP focal persons, Regional AGP coordination, BoA extension heads, and RARIs were in attendance. CASCAPE support ADPLACs platform meetings in creating institutional linkages and synergies among actors operating in the Woreda; in identification and prioritization of existing critical challenges and their possible interventions; and in sharing project results and outputs that are relevant to ADPLAC's priority interest.

Eight platforms meetings were organized on regionally prioritized commodities including malt barley value chain (Tigray, Amhara & SNNPR), sesame and papaya (Tigray), soybean and wheat (Jimma), chick pea (Addis Ababa). The objective was to create and strengthen commodity platforms to enhance feedback between research and extension (Table 10).

CASCAPE-supported the establishment of Research-Extension-education platform following the high level policy dialogue and national stakeholder meeting in which CASCAPE's approach was presented and discussed. The CASCAPE commissioned study has shown that weak research-extension-university linkage has been a major bottleneck for effective and efficient technology transfer to farmers. CASCAPE's approach of working with universities (education institutions) in close collaboration with EIAR, RARIs and extension (MoA, BoA) has been considered as an important institutional innovation that has enhanced the delivery of technologies to the end-users. In addition, thirteen national and regional stakeholder workshops have been organized and addressed a number of issues (Table 10).

Table 10 List of platforms strengthened and stakeholder workshop organized

Cluster	Platform organised	National/regional stakeholder workshop organized
AAU	<ul style="list-style-type: none"> Strengthened chickpea platform 	<ul style="list-style-type: none"> Annual regional planning and review workshop
BDU	<ul style="list-style-type: none"> Strengthened malt barley platform 	<ul style="list-style-type: none"> Annual regional planning and review workshop
Hawassa	<ul style="list-style-type: none"> Established regional malt barley value chain development platform 	<ul style="list-style-type: none"> Annual regional planning and review workshop AGP woreda planning support workshop
Jimma	<ul style="list-style-type: none"> Strengthened soybean value chain development platform Strengthened wheat value chain platform organized 	<ul style="list-style-type: none"> Two stakeholder workshop on joint planning and result sharing
Mekele	<ul style="list-style-type: none"> Strengthened papaya platform Strengthened sesame platform Established malt barley platform 	<ul style="list-style-type: none"> Annual review and planning workshop Handing over of spatial maps workshop PRA report validation workshop Green banking concept workshop Share result of in-depth study on determinates of sesame yield gaps workshop
NPMU	<ul style="list-style-type: none"> Soil fertility and blend fertilizer recommendations Research-Extension and University linkage Bottom-up planning and participatory action research pathways workshop 	<ul style="list-style-type: none"> Effective Technology Generation and Delivery through Linking Agriculture Education, Research and Extension workshop Policy and research implications of CASCAPE results for policy makers and members of parliament workshop Bottom-up planning and participatory action research pathways workshop

Mainstreaming social inclusion and nutrition

BENEFIT-CASCAPE is committed to mainstreaming gender issues in its activities. It works to support the Ethiopian government in different intervention areas of testing, validating, pre-extension demonstration (PED) and pre-scaling best practices to increase agricultural productivity to ensure sustainable food security through significant inclusion of female farmers.

With respect to gender & nutrition sensitive agriculture, training was organised in February 2018 nationally through joint effort of ISSD gender experts and CASCAPE gender/nutrition focal persons. The training was meant to exchange lessons learned on gender mainstreaming and nutrition-sensitive agriculture among the two projects. ISSD shared their relevant experiences on how to meet their self-declared target of 50% female beneficiaries for informal seed system activities. This resulted in new insights among CASCAPE gender/nutrition focal persons so as to learn how to target female farmers in CASCAPE regular activities. Practical tips were exchanged such as organising field days and trainings on convenient times for women, and organising specific field days for female farmers on topics relevant for them. On the other hand, CASCAPE staff shared their experiences how to work on nutrition dense crops and how agricultural activities can be more productive and nutrition-sensitive.

Moreover, CANAG- the Gender and Nutrition component of CASCAPE was finally approved by the World Bank and launched in 2018. This extra funding paved the way for CASCAPE to accelerate the mainstreaming of nutrition and gender in the programme. While previously lacking resources for major activities, this has now relatively solved. From June 2018 onward, gender and nutrition expert staffs were recruited in all clusters and organised an orientation training (December 10-12, Addis in Ababa) for all the newly recruited staff. CANAG is now well positioned to align with the relevant ministries, departments, international and local NGOs working on gender and/or nutrition. Unfortunately, we could not have achieved the target of validating labour saving technologies in 2018. This is because the collaborative agreement (MoU) was not signed between BENEFIT, EIAR and ATA in 2018. This implies that demonstration of labour saving technologies take off in 2019.

Conclusions and recommendations

Achievements

Various stakeholder workshops and platform meetings were successfully undertaken at national and regional levels. These enabled to share project results and informing policy. The policy briefs and technical papers produced addressed key policy-related messages. Good example is blend fertilizer production and use by smallholder farmers. High level meeting with policy such as agriculture standing committee of the MPs enabled linking field experiences with policy. Engagement with EIAR enabled the establishment of the research-extension and university linkage platform that is jointly organized by CASCAPE and EIAR. This is accepted as an institutional innovation piloted by CASCAPE and for strengthen research-extension linkages.

Challenges, opportunities and lessons learnt

While the majority of the regional officials are supportive of our research and development activities, involving (getting) influential officials during field days and workshop remains a challenge. The political instability in some part of the country was a deterring factor to access some of our activities. For example, the MPs could not visit malt barley seed and grain producing farmer groups in Malga woreda, SNNPR due to political unrest. Considering CASCAPE as an NGO was another challenge, because some farmers and experts were asking for high per diem.

The institutional advisors at national and regional levels has improved institutional alignment with research, extension and AGP. Increased alignment with extension directorate enables initialisation of approaches and results in the extension system. Regular meetings with the (state) minister organized by BENEFIT facilitates field-policy linkages, which is an opportunity.

Way forward

The following are important action points – (1) to still organize political and policy maker field excursion, but on a date and time that match their busy schedule; (2) capacity building training and monitoring and evaluation support to research and extension system; (3) institutionalize the thematic

platforms and transfer the ownership and the leadership to the public institutions; (3) strengthen the linkage and collaboration among the stakeholders so that the different actors have a shared common goal; (4) give due emphasis to the regional stakeholders where the real work is going on and disseminate research and policy dialogues to these groups so that communication is very much smooth (5) whenever possible, collaboration among the BENEFIT partner in organizing joint platform meetings and workshops so that we don't take much time of the participants (especially the officials).

Collaboration

M&E and communication

The M&E guideline has been finalized and training was given on its implementation. NMPU has tried to provide backstopping and follow up support to the M&E focal persons. With the objective of learning from the impact of the scaling activities in scaling woredas and high intensity woredas and in non-PED kebeles and non-research kebeles, CASCAPE has set up a scaling and monitoring protocol that will be carried out by each cluster in 2019. The scaling and monitoring protocol was set up collaboratively with cluster teams and NMPU/WUR. The learning that will be derived from this activity will support CASCAPE and the Ministry of Agriculture in assessing the impact of the scaling activities. Furthermore, in collaboration with BENEFIT PCU, CASCAPE participated in joint monitoring of programs to various regions as part of the benefit partnership collaborative activity.

On regular basis, the M&E focal persons collect both quantitative and qualitative data nationally and by the cluster teams. The later helps to capture the project stories in terms of going in-depth in to specific success story from farmers, experts and other stakeholders. So far, the 2016-2018 ITT and success stories were collected and communicated to donors in accordance to the requirements. However, data inconsistency has been a great deal across years. In order to have consistent data across the project and across years, updated data collection sheets were developed, communicated to clusters to capture the information the project needs regarding the monitoring and evaluation. To this effect, methodological backstopping and follow up was also carried out in order to have consistent data across years. Accordingly, 2018 cluster data was received on time and feedbacks were given from NMPU to the clusters.

With BENEFIT partnership, CASCAPE facilitated and produced most significant stories (at farmers, Woreda experts, regional level, and university and research linkage) at national and regional level. The same stories were also shared to the MTR teams to have an in depth understanding of the project. CASCAPE management teams also contributed to the discussions at MTR debriefing in Addis Ababa and The Netherlands. In addition, with the help of the communication expert at PCU, selected best practices and success stories were documented for Jimma and Addis Ababa clusters. In collaboration with the extension directorate of the MoA, a documentary film was prepared on CASCAPE innovations and disseminated through national TV and newspapers. Annex 1 presents the scan version of the newspapers featuring CASCAPE in their column.

Major challenge in 2018 with regards to M & E is inconsistency of data from clusters; inconsistency of requests from donor and BENEFIT partnership. Hence clusters should give attention to data quality and the NMPU will make efforts to resolve the issue.

Collaboration

CASCAPE is aligned with the Agricultural Growth programme (AGP) component 2 (best practice identification, validation and scaling). At regional and national levels, CASCAPE is involved in quarterly TC meetings and working groups of AGP. In addition, CASCAPE implementing universities (Mekelle, Bahir Dar, Addis Ababa, Jimma and Hawassa) are working in close collaboration with RARIS and BoA extension department as per the existing MoUs and sub-grant agreements. At regional level, senior institutional advisors composed of AGP coordinators, university presidents, BoA heads and Directors of RARIs oversee proper implementation of the project. Part-time researchers and extension workers including a woreda extension focal persons are assigned to work on regular basis with the project experts. This is seen as one mechanism of institutionalisation and transfer of skills. At national level, senior institutional advisors include head of federal AGP, Director General of the extension directorate, and DG of EIAR meets on quarterly basis to discuss issues of alignment and institutionalisation. CASCAPE managers are members of the regional TC and at the national level the programme manager is a regular member of AGP-TC and steering committee chaired by the state minister (MoA). There is also a seconded staff in the MoA facilitating communication between the ministry and CASCAPE. This enables the programme to achieve better alignment, refinement of work plans and institutionalization of results and piloted approaches (when proven successful).

Collaboration with BENEFIT programmes

Within BENEFIT partnership, CASCAPE works closely with ISSD, SBN and ENTAG in place product combinations in four regions. In the framework of this collaboration, CASCAPE leads in identifying best-fit technologies and practices with recently released crop varieties. Provided that seed is crucial scaling challenge, CASCAPE seeks for the assistance of ISSD in establishing community-based seed systems and transforming them in SPCs (seed producer cooperatives). Several commodities including sesame (Humera and Matama with SBN), soybean (Jimma) sorghum, food and malt barley and potato in Amhara are being addressed through this collaboration. The collaboration is crucial to increase productivity and beyond that the efforts also helps to strengthen the forward linkage such as easy communication with the farming communities and reliable market linkage. To strengthen this, farmer field days, training, and consultation workshops were organized at various locations collaboratively.

Collaboration with other projects and partners

The soil characterisation and mapping work is being implemented in collaboration with ISRI (International Soil Reference and Information Centre) based at Wageningen. While CASCAPE implements field survey and profile observations, ISRIC is responsible for base map preparation and validation by applying the random forest model. CASCAPE has been collaborating with CDSF in producing simplified extension manuals in respective local languages to contribute to the scaling and capacity building of DAs & farmers in using CASCAPE's best fit manuals. Following the competence framework given to each regional working group, simplified manual of Rhodes grass and poultry production were prepared in Amhara region; soybean in Jimma cluster; garlic white rot management and improved faba bean in Tigray region. The project selector (Sustainable value Creation for Title holders funded by the UK development AID) is a scaling out CASCAPE best practices in nine additional woredas in Amhara and Oromia.

Transferring responsibilities and ownership

CASCAPE is included in the AGP-PIM (programme implementation manual) as partner in piloting best practice validation activities, develop scaling strategy and capacity building for implementation. Hence, programme activities are well-aligned and integrated within the nationally mandated programme – the AGP. In addition, clear understanding has been created from the very beginning that all testing and validation activities are owned by the RARIs who are mandated to carry out these activities in the country. The federal MoA and regional BoAs extension directorates are responsible for scaling activities. Accordingly, CASCAPE has handed over 20 validated best-fit practices for uptake and implementation through the extension system. AGP continues providing the necessary technical and financial support for the scaling activities. In the meantime, the involvement of CASCAPE in the woreda development plan preparation has enables us to incorporate regionally suitable best-fit practices into the woreda plan. At the moment, we are working with the extension directorate to prepare extension package for model farmers. In addition, 16 new best-fit practices manuals are available for handover for incorporation into the national extension package. CASCAPE has been accepted as member of the package formulation team at national level. At the same time, a senior agricultural economist has been assigned or seconded to work closely with the extension directorate thereby facilitating the spread of best practices into the extension system.

Soil mapping and characterisation work has been implemented in close collaboration with the soil resource information directorate of MoA. Data, maps and tools will be handed over to this directorate and subsequently to the Ethiopian Soil Resource Institute (ESRI), an institution being set by the government. With regard to recommendation domain identification and mapping, the two centres of excellence – Mekelle and Addis Ababa university – are equipped with the necessary skills and knowledge to implement the approach within the research system in Ethiopia.

Conclusions and recommendations

Achievements

The overall achievement of the programme in 2018 can be rated as high in terms of attaining reach targets, yield increment, best practice validation and scaling and capacity development. We are pleased with the achievement with cascading training activities with AGP money this year which was not the case last year. This is due to improved alignment and joint planning with AGP and WoA. The

high level policy engagement including the field visits to CASCAPE sites by the MPs (agricultural standing committee) and stakeholder meetings on bottom up planning and research-extension-education linkages are most successful examples of influencing policy at national level. Institutionalisation of the approaches and best fit practices will be the main focus in 2019.

Challenges, opportunities and lessons learnt

Challenges

- Security issues around Oromia and some parts of Amhara has restricted mobility;
- Lack of good quality seed remains scaling challenge – cluster approach and community based seed multiplication groups need to be strengthened;
- Staff turnover at all level;
- There was a delay in planning the joint activities. It was done after each partner finalized their own annual plan and this led to shortage of time to organize the activities in a synergetic manner;
- BENEFIT partners were busy with their own project activities;
- Distance in working stations among the BENEFIT partners (e.g. SBN);
- Lack of clear working procedure and rules that BENEFIT partners should follow for the collaborative activities.

Opportunities

- The assignment of Dr Mandefro Nigusse as DG of EIAR is a great opportunity to institutionalise bottom-up planning processes and CASCAPE innovation pathways in to the research system;
- The 400 ha demonstration plots in four regions implemented by EIAR on CASCAPE approach is one step forward in nationalisation of our innovation pathways;
- The alignment and respect that AGP and extension directorate has developed for the project provides added advantage for ploughing in CASCAPE-validated best practices in the national extension package;
- The involvement of CASCAPE in the preparation of the woreda development plans facilitates organic scaling;
- Partnership with CDSF and Selector provides additional outreach and scaling up of CASCAPE best practices in woredas beyond the 65 intervention woredas. The production of simplified extension materials facilitates uptake of innovations at farm level.

Lessons learnt

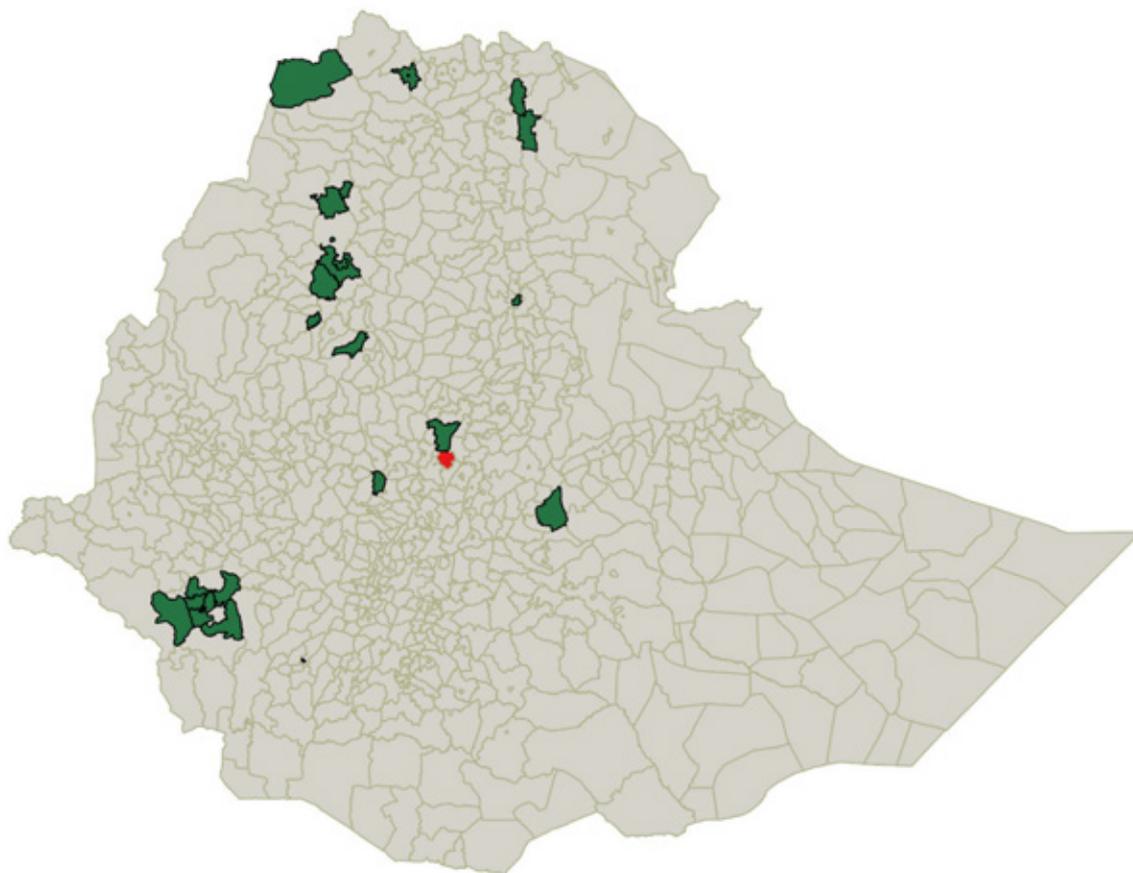
- Alignment and close collaboration with national and regional research and extension partners facilitates uptake of approaches and results;
- BENEFIT projects considered as working teams with the same objective by stakeholders (at region, zone and woreda);
- Collaboration avoids duplication of efforts and resources of BENEFIT Staffs and stakeholders;
- Widens the technical capacity of BENEFIT staffs;
- Enable stakeholders to look the whole value chain of an intervention of BENEFIT project;
- Opportunity for resource pooling for big events.

Way forward

- Institutionalisation, capacity building and dissemination of results remains the way forward. Institutionalisation of CASCAPE innovation pathways, PAR methods and research-extension and education linkage will be a priority;
- Capacity building training (e.g., recommendation mapping, scaling), M&E of scaling activities and validation at all levels;
- Analysing huge sets of agronomic data and turning them into information and wisdom through scientific publications, manuals and policy briefs will be emphasised while capacity building at all levels will be continued.







Introduction

The Ethiopia-Netherlands Trade for Agricultural Growth (ENTAG) programme has been supporting agribusinesses & entrepreneurs operating in Ethiopia. At impact level, ENTAG aims for improved sustainable food, income, and trade among rural households in Ethiopia. ENTAG's goal is: To increase agribusiness productivity, trade and foreign direct investment by strengthening the private sector in working more effectively with smallholders in applying new technologies and accessing finance for investment purposes. The Theory of Change (ToC) of the programme is based on the following three primary outcomes:

1. Increased demand for and use of ENTAG's market information services, and provision of hands on support to both domestic and foreign entrepreneurs/investors in selected sub-sectors;
2. Enhanced performance of selected sub-sectors; raise the volume and value of trade in domestic and high-value international markets;
3. Attracted and engaged companies to pursue more inclusive and sustainable value chain development.

ENTAG has selected a few priority sectors for its intervention. These sectors are aquaculture, legumes, poultry, spices, sesame, dairy and potato. The main components of programme activities namely are: Front office & hands on technical support; Inclusive business models; Subsector business platforms; Agribusiness innovation fund; Support of Private Sector Associations (PSA), B2B linkage & Match making and the Internship programme.

Major achievements

- More than 148 beneficiaries representing commercial farms, entrepreneurs, government offices, associations and NGOs were given sector based information on start-up business, production and productivity of sustainable agribusiness;
- A total of ten hands-on local trainings were given to 277 model farmers, private companies, farmer unions and cooperatives, traders and exporters, agricultural experts, and NGOs on improved best practices of doing sustainable agribusiness. Some of the themes of the trainings were on spice production, marketing and postharvest handling, chicken slaughtering and processing, poultry financial model analysis, and basics of aquaculture management;
- Five international exposure visits, an expo and international conferences were made to Vietnam, the Netherlands, Egypt, United Arab Emirates and India. A total of 58 private companies, 2 farmer unions and 11 government agencies joined and benefited from these visits;
- ENTAG created export market linkage of 1967 Tons of spices, with a value of \$1.89 million, between five Ethiopian exporters and foreign companies in Russia, Bangladesh, India and Israel. A trade mission organized to India resulted in export of legumes worth of \$1.2 million;
- More than 11 B2B linkages were facilitated between Dutch and Ethiopian companies; several hundreds of business linkages were also created among Ethiopian companies. In the legume subsector, 56 B2Bs were facilitated among 7 soya bean supplying unions and 8 food and feed processing companies and exporters;
- ENTAG organized 13 business platforms in its four priority subsectors. These business platforms brought together stakeholders from within and outside Ethiopia to discuss the most pressing issues in the agribusiness sector of the country. Some of the themes of the platforms, among others, were regular sectoral updates, challenges of export markets and production quality, access to finance, research findings on food safety, and policy, institutional and strategic frameworks. Participating private sector actors and some government agencies have shown strong commitment to take up issues raised in the meetings;
- ENTAG lobbied to solve the problems facing the Ethiopian poultry, spices, aquaculture and legumes sectors. Some of the critical issues in these sectors have been brought to the attention of respective government agencies and other relevant stakeholders. As a result of this effort:
 - A poultry disease control strategy document has been developed and handed over to the Ministry of Agriculture (MoA);
 - A poultry policy has been drafted and it is under review; where ENTAG is engaged as an advisor and facilitates stakeholders meetings to refine the policy;
 - Consultative meetings were organized for the MoA to meet the ambassadors of some target countries, for example Pakistan, and prominent private companies to discuss on the export challenges of commodities in priority subsectors, especially regarding quality and food safety issues. The food safety agenda was further taken up;
 - The first Ethiopian spice market regulation has been drafted and reviewed by stakeholders;
 - A new strategy and action plan for the Ethiopian Aquaculture Association has been drafted and is under review;
 - A strategic roadmap document has been developed for the establishment of an Ethiopian Pulses Council; content.
- From the 21 ENTAG innovation fund winners so far, six of them have now completed the implementation of their projects and disbursement of the final 20% grant has been released. These projects benefited more than 537 smallholders in provision of agricultural inputs like seedlings and feed. 69 smallholders benefited in market linkages and capacity building from these innovation fund grantees and the company's revenue directly related to the innovation fund is around 60,000 euros. 26 new jobs were also created from these 6 projects;
- Private sector association support has resulted in an increase in the annual income of the associations and strengthened the membership bases for the sustainability of sectoral development. The membership base of the spices, aquaculture and poultry private sector associations increased by 29%, 100% and 20% respectively. The spices sector association particularly has increased its income from membership fee by 30%;
- Through ENTAG's internship initiative, in 2018, 83 agricultural graduates were assigned to 37 agribusiness companies out of the 83 interns, 30% were female.

Major challenges, opportunities, lessons learned and way forward

Challenges

- ENTAG's intervention is oriented towards buyers and processors, which makes it difficult for the programme to generate impact data on production and productivity at smallholder level;
- Volatile security issue throughout the country have hindered implementation of planned activities as per schedule (e.g. the poultry slaughter training), and eroded the confidence of foreign investors to communicate, collaborate and work with Ethiopian counterparts;
- Strong commitment from government stakeholders for better collaboration and subsector development has been lacking;
- The B2B and market linkages support of ENTAG has been constrained because of exporters' contract default and stringent food safety and quality control by importing countries for agricultural products from some countries including Ethiopia;
- The implementation of several innovation fund projects and their expected impacts have been constrained due to various reasons, such as foreign currency shortage to import machines and materials from abroad; grantees', both in the innovation as well as IBM, inability to raise their share, poor financial administration and reporting and mismanagement of the money they received from the fund. This has led to changing the instalment process for innovation grantees to first requesting the use of grantees' share of the finance and a frequent supervision and evaluation by coordinators;
- For the soya bean trading platform, which is meant to link producers with central buyers, deal making did not happen in 2018 as suppliers could not come up with the required quality and quantity as well as expected price. For 2019 the market linkage between producers and processors/exporters from ENTAG will not take place due to the integration of soya bean as a mandatory crop to be marketed through ECX only;
- Lack of responsiveness and misunderstanding on goal of the establishment of Ethiopian Pulses Council by Ethiopian Pulses, Oilseeds and Spices Processors-Exporters (EPOSPEA);
- Slow progress of some of the associations to take up lobbying activities and recommendations that came out during the platform meetings.

Lessons and Opportunities

- Increased government commitment and support is required to promote agribusiness sector in Ethiopia and to consider suggested solutions to solve sector problems;
- Only company owners, shareholders or general managers should join trade missions, with regular employees the risk is too high for half-hearted participation;
- For the innovation fund projects to be successful, a flexible fund disbursement approach should be followed depending on the project nature such as implementation period and financial requirement. Disbursement of a significant portion of the fund before the project is implemented caused lots of evaluation and follow up problems for ENTAG;
- B2B and market linkages are a major driving force for the subsector development;
- Increasingly, foreign and local investors are showing increasing interest in subsector investment;
- The platform meetings, as a pillar of ENTAG, are crucial for availing and maintaining sustainable information exchange among actors in the subsectors. Furthermore, it is critical to actively engage actors in the development of the subsectors.

As the way forward ENTAG plans to

- Follow-up and support the pending drafted regulations and strategies to improve the performance of priority sectors in terms of improved quality and quantity of production;
- Food safety and quality issues should be sensitized and properly addressed across the subsectors;
- Close follow-up of the innovation fund projects has to be strengthened to expedite implementation of innovations;
- Strengthen sectoral platforms and hand them over to local players for their sustainability;
- Focus on strengthening the private sector associations, as they can be the agents to sustain activities of ENTAG and therefore are part of its exit-strategy.

Quality and quantity of sustainable agricultural production

Target beneficiaries of ENTAG are mostly companies, commercial farmers and farmer cooperatives and unions. However, through its activities the programme indirectly has been working on the quality and

quantity of sustainable agriculture. To improve the quality and quantity of agricultural production in four of its priority subsectors, ENTAG has been working on provision of technical assistance, trainings and innovation funds to increase the financial and technical capacity of private business companies, private sector associations, farmer unions, commercial farmers, government agencies and research centres. These interventions of ENTAG, indirectly improve the quality and quantity of sustainable agriculture through smallholder. Some of the achievements of the programme in this regard are:

Platform meetings: The programme organized 13 platform meetings that initiated discussion on pertinent challenges and opportunities in relation to improving quality and quantity of sustainable agriculture. These platform meetings also highlighted nutrition and social inclusion issues in the Ethiopian poultry, aquaculture, legumes and spices sectors.

Innovation fund: Through its innovation fund component and capacity focused activities, ENTAG has enhanced the production potential of commercial farmers and smallholders. In this reporting year, six projects have been completed benefiting 537 smallholders in Amhara, Oromia and SNNPR. In the same year, the second, third and fourth innovation fund rounds were announced and selection and disbursement of the fund is in the pipeline. These projects are expected to further enhance the contribution of ENTAG towards quality and quantity of sustainable agricultural production.

Trainings, Exposure visits and Competence development:

- Skills and awareness of private companies, commercial farmers and union representatives has improved through exposure visits for new technologies and training programs. 59 private companies were brought to Egypt, Dubai, the Netherlands, India and Vietnam for exposure visit on technologies of productivity and production in aquaculture, legumes, poultry and spices subsectors;
- Training on aquaculture production and productivity, fish postharvest processing and basics of aquaculture management, was given to 55 individuals from private aquaculture farms, fish traders and government;
- 198 turmeric and black pepper producer smallholders have been trained and linked with technology suppliers to enhance their competencies and capacities of production in this reporting year. Among them were 157 model farmers, 25 primary cooperatives and 2 unions. In addition, 2 unions, 7 model farmers, 1 private company and 10 traders also benefited from the turmeric quality laboratory analysis which was done for 46 samples collected around Mezan and Tepi areas;
- 10 private companies engaged in commercial production and exports were given technical support on improved production technologies of black cumin, coriander, white cumin and fenugreek.

Improved markets and trade

In 2018, the ENTAG programme worked on a range of activities on backward and forward market linkages, trade and investment integration among local and foreign agribusiness companies.

- Market linkage–The total volume (1967 Tons) and value (\$1.89 million) of export contract that was made through ENTAG increased by 59.5% and 47% in volume and value respectively. This was reached through the link made between five Ethiopian exporters and foreign companies in Russia, Switzerland, Bangladesh, India and Israel. Out of the total export market to these countries, annual sales of two exporting companies increased by over \$0.8 million through exporting 875 Tons of turmeric and 38 Tons of black cumin. A trade mission to India resulted in export of legumes worth of \$1.2 million.
- Trade missions–The programme organized 4 trade missions in poultry, spices, legumes and aquaculture to the Netherlands, India, Vietnam and Egypt. The programme also took 16 private companies, a farmers union and 5 government agencies to the Gulf Food Expo in Dubai and the Indian International Spices Conference. These trade missions and international events enabled private companies and farmers unions to share experience and create market linkage with other international participants.
- Technical support and front-desk services– This facility has been supporting the private sector in Ethiopia on farm management, production quality, contract farming, financial modelling, new investments, quality inspection and efficient agro-logistics. In 2018, ENTAG supported more than 140 private companies on access to improved markets and trade through its front desk, hands on advisory services and provision of graduate interns.

- **Matchmaking** -As part of the trade missions and Business-to-Business (B2B) component, ENTAG has also been working on match making and market integration among Ethiopian and foreign agribusiness companies. In 2018, the programme successfully established business contacts with more than 133 foreign companies through its trade missions, and one local international conference (EPOSPEA annual conference). Over 11 B2B linkages were facilitated between Dutch and Ethiopian poultry companies. 56 B2Bs were also facilitated among 7-soya bean supplying coops, unions and 8 food and feed processing companies and exporters.
- **Value chain integration** - In addition, the programme also established backward integrations among Ethiopian private companies, commercial farmers and smallholders. ENTAG has been working on contract facilitation and trade negotiations among local companies, farmers and foreign buyers and traders. Through its backward integration, ENTAG supported 2 unions, 1 commercial farmer and 8 local traders to sell 941.6 Tons of turmeric and 38 Tons of black cumin, in 2018 with a value of ETB 18.87 million.
- **Innovation fund** - The programme approved 7 innovation projects, 4 projects on marketing and trade in agribusiness have already been financed.

Improved enabling environment

The ENTAG program, through its platform meetings and other high-level engagements, has been serving as a catalyst for some of the national and regional policy, strategy and institutional reforms and drafts of new regulations on Ethiopian poultry, spices, aquaculture and pulses subsectors. ENTAG has provided support to:

- **Trade barrier negotiation**-In this year, trade barrier from India and Pakistan, and series of warnings from other countries in relation to food safety were the key issues challenging the export of Ethiopian legumes. In this respect, a series of high-level consultative meetings were organized to frame interventions and create sense of urgency to the respective public institutions to undertake government-to-government negotiations. Besides, to own and lead such issues, establishing Ethiopian Pulses council to provide sustainable advisory role to the sub-sector actors is undergoing;
- **Amhara One Stop Shop**-Amhara One Stop Shop (AOS) was finalized in first quarter with validation meeting in Bahir Dar and incorporating comments of the meeting. The report was intended to improve investment service of Amhara Investment Commission. Four crucial pillars were identified in the report (1) scope of possible service of the organization (2) possible organization structure and models for the one stop shop (3) required equipment (4) required skills and competencies of people. The validation workshop was conducted in Bahir Dar in the presence of H.E. Mr. Melaku Alebel and Representative of EKN Mr. Frerik Kampman and was followed up by ENTAG with the new Amhara Investment Commissioner, Mr. Getahun Mekonnen. Final design and edited version of the report was delivered to EKN and AIC. Moving forward, it is considered that either World Bank / IFC takes up the follow-up or a new assignment is facilitated by e.g. EKN to further build the capacity of the Amhara Regional Government;
- **Establishing Ethiopian Pulses Council**- A strategic road map document was developed and shared among platform participants in 2 series meetings. Though council does not require legal body to function, in order to get recognition from government and stakeholder, registration was sought. Article of Association and council chairperson election was conducted to effect the registration. But there was no Ethiopian proclamation that either permits or hinders the registration of such type of organization. Hence, lobbying the relevant ministries to get recognition and realize the establishment of Ethiopian Pulses Council is planned for 2019;
- **Poultry disease control strategy**- In 2018, after much analysis and discussions in numerous workshops organized, ENTAG in collaboration with GD animal health group in the Netherlands have successfully developed and delivered the strategic plan for disease prevention and control in commercial poultry and handed the document over to the State Minister of livestock;
- **Food Safety-Aflatoxin Consultative Meeting**-Due to a food safety warning that the export businesses were receiving, ENTAG had commissioned a study on Aflatoxin. Following the findings of the study, ENTAG facilitated a series of consultative meetings to identify the key interventions to support the national food safety control system. The initiative got interest from the ministry of trade

and willingly led the task-force that was selected to frame the action plan and scope the key national stakeholders. Through series of engagement of the task-force, action plan and demand for capacity building of the national food control system stakeholders is outlined;

- **Interviews with diverse group of Dutch investors on their experiences and recommendations regarding the Ethiopian investment climate** – After a request of the Federal Government of Ethiopia and assigned by the Netherlands Embassy, ENTAG and an independent consultant conducted interviews with about 15 Dutch investors in Ethiopia, from different sectors, regions and sizes. This resulted in the *Investing in Ethiopia – The Dutch experience*, report which is now being used by Netherlands Embassy, Ethiopian-Netherlands Business Association (ENLBA) and ENTAG as a strategic lobby-document in suitable meetings with high government officials from the Ethiopian government;
- **Various Social Impact Assessments including for the Kunzila Horticulture Cluster**-The Kunzila Social Impact Scoping study was conducted during the second and third quarter of the year. Five Dutch horticulture investors are interested to set-up a new horti corridor in Kunzila-53KM North West of Tana. The social impact assessment identified the possible risks (social, economic, environmental and political) in relation to the envisaged investment;
- **Draft national poultry policy** - The lack of poultry policy on production, processing and marketing has been identified by many of the stakeholders in the poultry sector platform. In this reporting year, a draft national poultry policy, which is expected to address many poultry issues in the country, has been under development by the Ministry of Agriculture and Livestock (MoAL). ENTAG poultry platform meetings will review the draft policy in the subsequent sessions of 2019;
- **Develop spices market regulations** - In its spices subsector ENTAG has also managed to advocate and lobby the government to launch spices market regulation. The draft regulation has already been reviewed and it is going to be handed over to the Council of Ministers for approval;
- **Stakeholder Mapping Ethiopian Horticulture Sector** – ENTAG has facilitated a stakeholder mapping of the Ethiopian Horticulture sector at the request of the Netherlands Embassy. The results of the stakeholder mapping will be crucial input for the policy of the Netherlands Embassy on the Ethiopian horticulture sector and the most important private sector for the Netherlands in Ethiopia. The final results of the stakeholder mapping will be presented on January 30 2019;
- **Consultancy Assessment** - The Netherlands Embassy requested ENTAG to make an overview of quality Ethiopian consultancy companies, also to further facilitate short-listed tenders within the programme and as an important resource of other programs and projects funded by the Netherlands Embassy. ENTAG interviewed about 30 Ethiopian consultancy companies, which enabled faster and stronger project implementation.

Support to Private Sector Associations:—One of the major components of ENTAG towards creating enabling environment for the private sector is through support given to sector associations. The programme has been supporting the sectoral associations of poultry, spices and aquaculture. As a result, the membership base and annual revenues of these associations has been increasing. Through technical and financial support of ENTAG the membership base of the Spices, Aquaculture and Poultry private sector associations has increased in 29%, 100% and 20% respectively in 2018.

Partnership and collaboration

- Soya bean has been an emerging commodity both in production and consumption for the past years. Though the end markets are developing, there is a bottleneck towards extending soya bean production. There was a perception with producers, cooperatives and unions that there is lack of consistent market that challenged the increase in production. On the other hand, domestic processors are extremely challenged by lack of supply. Hence, a collaboration activity of facilitating trading platforms to create networking among suppliers and buyers has been organized several times by BENEFIT partner programmes. In this partnership, CASCAPE and ISSD supported farmers' organizations to create linkages with domestic food and feed processing companies, ENTAG

facilitated the trading platforms and ensured the presence of potential buyers. As soya bean has become a mandatory ECX crop, the soya bean trading platforms has become obsolete. ENTAG will however, still continue on working on legumes of which soya bean is one;

- ENTAG in its spices subsector increased its collaboration with national research institutions, NGOs and other government agencies on platform meetings, food safety, production, quality, marketing and postharvest handling. Some of the collaborative organizations are Research institutions-TNSRC, WARC, SARC, GARC and BRI; NGOs-NABU, SITA and ATA; government agencies-FMHACA, EIC, ERCA, ECTSA, MoA and MoT&I. Regarding advocacy, platform organization and lobby, ENTAG has been collaborating with its usual partner, the private sector association ESAHGPA;
- ENTAG poultry subsector collaborated with various Dutch based and national government and non-government organizations on policy and strategy development, platform organization, training delivery, market and trade. Some of the collaborative organizations are EPPPA, MoALR, EMDTDI, NAHDIC, NVI, EIAR, EVA, ATA and VDFACA. Dutch private sector collaborators are HAPP/DAPP, NABC, GD, CVI, Trans National Agri, Advance Consulting, Aeres University of Applied Science, Trouw nutrition, Wageningen Bioveterinary institute and Hendrix Genetics. Two Dutch companies are direct beneficiaries in the first round of the innovation fund, while a third company is affiliated with Dutch entrepreneurs. In addition, ENTAG collaborated with these companies in its internship programme;
- The aquaculture sector in ENTAG has established and strengthened collaboration with various partners on research, training, platforms and trade missions. These include BioMar Group in France, Ziway Fisheries and Aquatic Life Research Centre, WorldFishCentre in Egypt, MoA, MoT&I, Ethiopian Aquaculture Association, Hawassa University, Hawassa Fish Research and Breeding Centre, Debre Birhan University, National Fisheries and Aquatic Life Research Centre, Bahir Dar Fisheries and Aquatic Life Research Centre, and FAO-China-Netherlands Triangular Cooperation;
- In its trade missions, ENTAG collaborated with the Vietnam pepper association, the World Fish Centre (Egypt) and SITA (India);
- Clients and staff of the BENEFIT partner programmes participated in various ENTAG activities, notably in the business plan development trainings, business platforms and innovation fund. Several also made use of the front desk service.

In the sections below the intermediary outcomes are reflected under the 3 pillars. For the first pillar ENTAG does not have any intermediary outcomes, but activities under the other 2 pillars actually contribute to the production objectives.

- Agribusinesses operating in Ethiopia are solving bottlenecks in selected subsectors;
- Individual company performance is improved;
- Selected subsectors have an operating stakeholders' network;
- More companies are engaged in inclusive business models resulting in sustainable value chains (increased uptake);
- Results of innovation fund programmes are utilized to solve key issues (uptake by stakeholders);
- Strategies to solve selected sector-wide issues are developed and implemented.

Quality and quantity of sustainable agricultural production

The ENTAG programme has limited interventions on production and productivity of smallholders. In ENTAG, we mainly work with the private sector and farmer cooperatives & unions, to develop market linkage and trade of these actors in Ethiopia, and hence most of our outcomes towards quality and quantity of production are indirect. As a result, the programme has no major outcome statements on this pillar. However, some of our activities contributed to production and productivity of smallholders and commercial farmers indirectly. The section below states some of these activities that contributed to this pillar.

ENTAG organized several platform meetings where discussions and research findings were presented to inform sector actors, including ministries and other relevant government bodies on new technologies and pertaining challenges in relation to increased production and productivity. As a notable example, ENTAG, in collaboration with Dutch experts, has developed and handed over to the MoA the national poultry disease control strategy, which should highly increase the quality of poultry production. The ministry is expected to plan its activities around poultry disease control and implement the recommendation. ENTAG on its side has taken the initiative to implement some pilots from the recommendations along with the ministry and relevant stakeholders.

Through its innovation fund component and focusing on enhancing capacity of entrepreneurs, ENTAG has enhanced the production potential of commercial farmers and smallholders. In 2018, six projects have been completed benefiting 537 smallholders in Amhara, Oromia and SNNPR. In the same year, the second, third and fourth innovation fund rounds were announced and selection and disbursement of the fund is in the pipeline. These projects are expected to further enhance the contribution of ENTAG to quality and quantity of production. Detail of the impact of these innovations is described under pillar 2.

ENTAG, through its trainings, and other technical support, has reached smallholders, farmer unions and commercial farmers on productivity and production of spices, aquaculture and poultry subsectors. In 2018, ENTAG supported more than 69 private companies, 281 farmers, 25 primary cooperatives and 2 unions to bring about enhanced productivity and production, as well as improved best practices of doing sustainable agribusiness. Thousands of smallholders, through their primary cooperatives and unions, indirectly benefitted from the efforts of ENTAG to improve spices production and quality in Amhara, Oromia and SNNPR. One of these cases is the on-farm training provided to more than 160 smallholders producing spices and as a result they adopted improved black cumin, white cumin and coriander production technologies on 128 hectares of land in Bale and Gondar.

ENTAG also provided a high standard poultry slaughtering and processing training to selected private companies which should enhance the quality of poultry meat. A team of Dutch trainers developed a tailor made training for one week and provided the theoretical and practical training at Chico meat Plc, a Dutch Chicken slaughtering company in Debre Zeit.

Training on aquaculture production and productivity, fish post-harvest processing and basics of aquaculture management, were trainings given to 55 individuals from commercial aquaculture farms, fish traders and government experts, which should enhance the production and productivity of fish farms and processors.

ENTAG organized experience-sharing visits to high standard farms within and outside Ethiopia, to demonstrate the management of these companies towards high quality and production in the priority sectors. Details of these visits are discussed under pillar 2.

Mainstreaming social inclusion and nutrition

In 2018, two trading platforms were facilitated with the intention of creating end market linkage for smallholder farmers to fetch better margins for their soya bean production. Accessing high-end markets will encourage them to increase the production of high valued, nutritious crop, in this case soya bean, and supplement their home consumption. Hence, 56 B2B opportunities were facilitated and contacts were established with smallholders including women farmers.

In 2018, several ENTAG platform meetings were organized to address issues related to nutrition. The platforms brought stakeholders from a range of institutions and government agencies to stimulate discussion on sustainable agribusiness in light of nutrition and inclusiveness. These would enhance awareness among actors of Ethiopian agribusiness on quality of production and market commodities to contribute to nutrition.

The number of women members of ENTAG supported private sector associations has been increasing. In the spices subsector, in particular, the number of women members of ESAHGPA increased from 7 to 13; the number of women headed companies receiving technical assistance from the front desk service increased from 7 to 11; the number of women that participated in ENTAG spices platform also increased from 27% to 31% and in training and trade missions increased from 36 to 38 as compared to last year. However, the change in women participation in the other subsectors is not significant.

In July and October 2018, ENTAG organised two policy level consultative workshops on food safety and nutrition respectively. As a result the Ethiopian food safety and nutrition policy was reviewed and current constraints were brought to the attention of relevant government agencies, MoH, MoTI and MoA. Awareness creation was also done through public media which sparked follow up media coverage on food safety in the country and measures to be taken by responsible public offices.

Conclusion and Recommendations

Achievements

- More than 148 commercial farms, entrepreneurs, associations and NGOs were given sector based information on production and productivity of sustainable agribusiness;
- 13 platform meetings were organized to determine challenges and opportunities in poultry, spices, aquaculture and legumes subsectors production and productivity;
- 4 trade missions, exposure visits and 2 international events were organized with a total of 84 private farms, entrepreneurs, government experts and associations drawn from the priority sectors. The missions helped the actors of these sectors to access new and latest technologies that should improve the quality and quantity of production in their respective subsectors;
- 160 model farmers, 25 primary cooperatives and 2 unions improved the quality of their black cumin, white cumin and coriander production through the support of ENTAG;
- 55 individuals from private aquaculture farms, fish traders and government experts were given training on aquaculture production and productivity, fish postharvest processing and basics of aquaculture management. This will enhance the production and productivity of fish farms and processors;
- Black pepper and turmeric production and the number of companies involved in these spices also increased through support of ENTAG;
- Thousands of smallholders indirectly benefit from trainings offered by the ENTAG to farmer organizations on spice production, quality and postharvest handling.

Challenges, opportunities and lessons learnt

- ENTAG's intervention is limited to buyers and processors, which makes it difficult for the programme to generate outcome level data on production and productivity at smallholder farms' level;
- The fragile peace and insecurity of various target areas limited the on-farm technical supports planned;
- Slow response from government bodies in taking up points raised and delegated at platform meetings regarding extension services;
- Soya bean supplies during the soya bean trading platforms by the Unions and Cooperatives, and also by commercial farms, have been low compared to the demand of big buyers like FAFFA, AlemaKoudijs Feed, etc. This is partly associated with the poor quality product being supplied;

Way forward

ENTAG plans to further follow up on the pending policy reforms on the priority sectors performance in terms of improved quality and quantity of production. The project will also continue awareness creation of the private sector and its partners in these sectors on the level of quality demanded by local and international buyers. It will also facilitate efforts on demand and supply profiling to show the gap between the two and shed light to value chain actors where they should improve the performance of their operations.

Improved markets and trade

In ENTAG we target the following outcomes for contributing to improved markets and trade:

1. Increased demand for and use of ENTAG’s market information services, and provision of hands on support to both domestic and foreign entrepreneurs/investors in selected sub-sectors
 - 1.1 Agribusinesses operating in Ethiopia are solving bottlenecks in selected subsectors
 - 1.2 Individual company performance is improved
2. Enhanced performance of selected sub-sectors; raise the volume and value of trade in domestic and high-value international markets
 - 2.1 Selected subsectors have an operating stakeholders’ network
 - 2.2 Results of Innovation Fund Programmes are utilized to solve key issues (uptake by stakeholders)
3. Attracted and engaged companies to pursue more inclusive and sustainable value chain development
 - 3.1 More companies are engaged in inclusive business models resulting in sustainable value chains (increased uptake)

Demand for and use of ENTAG’s market information services, and provision of hands on support to both domestic and foreign entrepreneurs/investors in selected sub-sectors

Technical Support, Front-desk service and Trainings

In 2018, ENTAG supported more than 130 private companies in four of its subsectors on sector specific technical expertise and provision of market and investment information. The technical support provided to these companies was mainly related to setting up a business, farm management, feed processing, quality and market competitiveness, backward and forward integration, processing, postharvest handling and disease control. Technical on-farm trainings have been given in the poultry, aquaculture and spices subsectors of the programme to commercial farmers and small holders. The trainings were aimed at forward and backward market integration of companies through improving the quality and quantity of production.

The missions organized by ENTAG also helped companies and farmer organizations that participated to have better understanding about the international market standards, latest technologies and expertise for improved market competitiveness. In this reporting year, 59 Ethiopian private companies, from four of the subsectors of ENTAG, were taken to Egypt, the Netherlands, India and Vietnam.

Private sector association support has resulted in an increase in the annual income of the associations and strengthened the membership base of the associations for the sustainability of sectoral development. The membership base of the spices, aquaculture and poultry private sector associations increased in 29%, 100% and 20% respectively. The spice sector association in particular has increased its membership fee income by 30%. ENTAG has also assisted the Ethiopian Poultry Producers Processors Association to participate in the ALEC/Ethiopex exhibition. In the establishment of a pulses council that will address value chain issues of the sector and put forth possible solutions, a strategic road map document was developed and shared among the legumes platform participants. The setting up of a task force to develop working procedures and documents is in progress and will be finalized in 2019.

As a result of technical support, the backward and forward integration of producers, suppliers, traders and processors has increased in the four priority value chains of the programme. Various commercial farmers and small holders have improved their production and post-harvest handling. The awareness of traders and suppliers has improved regarding local and international standards and requirements in supplying products. Companies and commercial farmers are now aware of issues hindering their international trade competitiveness from growing despite the potential of the country. The export market of the spice sector in particular has improved greatly because of ENTAG's support. One of these supports is the testing of 46 samples of turmeric from various areas of the country which proved the good quality of the product hence, giving exporters and farmer organizations better bargaining power in international markets.

Dutch, Ethiopian, Belgian, French, Indian, Swiss, Bangladeshi, Israeli & Russian companies received front desk advisory service, and the latest information about market trends and investment opportunities in Ethiopia. The support provided enabled the companies to make informed decisions on their investment and partnering. It also helped them establish market linkages with companies where they are processing agreements and sample testing in some cases.

The programme worked on company profiles in its four subsectors; more than 100 company profiles are now published (here) and additional profiles are still being compiled. The profiles are being used by sector actors as source of information about who is doing what in four of the main subsectors of ENTAG.

ENTAG has been working on financial product profiling for private agribusiness companies in Ethiopia. And hence, opportunities under five funding categories (1) grant, (2) international loan, (3) matching fund, (4) local loan and (5) technical assistant were addressed. Specific opportunities under each of the above categories were compiled and full report (here) has been submitted to EKN in May 2018.

Enhanced performance of selected sub-sectors; raise the volume and value of trade in domestic and high-value international markets

Trade missions, B2B and Match making

More than 58 Ethiopian companies, 11 government agencies and 2 farmer unions participated in 4 missions organized in 2018 (Egypt, Netherlands, Vietnam and India). The programme also took 16 private companies, a farmers' union and 5 government agencies to Gulf Food Expo (UAE) and Indian International Spices Conference. These trade missions and international events brought private companies, farmers unions, government agencies and experts from Ethiopia as well as buyers, processors, traders, producers and government institutions from the visited countries together to share experiences and create market linkages among participants.

Through the match making and market integration (B2B linkage) among Ethiopian and foreign agribusiness companies, in 2018, the programme successfully established market linkages business contacts with more than 133 international companies through its trade missions to India and Vietnam, and one local international conference (EPOSPEA annual conference). At least 11 B2B linkages have been registered as facilitated between Dutch and Ethiopian companies but the results of the links have not yet materialised into trade in 2018. In the legume subsector, 56 B2Bs were facilitated among 7 soya bean supplying unions and 8 food and feed processing companies and exporters. 6 companies in India, Switzerland, Bangladesh, Israel and Russia have been linked with 7 Ethiopian spice exporters. Two of the exporting companies exported over \$800,000 through exporting 875 Tons of turmeric and 38 Tons of black cumin. In addition, the programme established 10 backward linkages among Ethiopian private companies, farmer unions, traders and commercial farmers. In its legumes subsector, a trade mission organized to India resulted in export of legumes worth of \$1.2 Million. The total spice volume (1967 tonnes) and value (\$1.89 million) of export contract that is made through ENTAG, this reporting year, increased by 59.5% and 47% in volume and value respectively. As a result of the spice export deals, 1728 smallholder farmers, 1 commercial farmer, 7 turmeric and 1 black cumin aggregators has benefited from this.

Innovation fund and Support to Sectoral Associations

From the 21 ENTAG innovation fund winners since 2017, six of them have now completed the implementation of their projects and disbursement of the final 20% grant has been released. More than 70 smallholders benefited in market linkages and capacity building from these innovation fund projects and the net income of these six grantees from the innovation fund projects is around 60,000 euro. At least 26 new jobs were created from these six projects. All of them, except for one, which is involved in technology transfer to smallholders, are working on marketing in addition to production and processing. Accordingly, notably through the programs innovation fund, is supporting private agribusiness companies, commercial farmers and smallholders in their local and international market competitiveness, which eventually adds value to Ethiopian agribusiness and commercialization. The below table shows the details of the impacts of these 6 grantees.

Description	Volume/Amount
Companies' turnover in euros	59,477
No of female workers	36
No of workers < 35	25
Volume of animal feed supplied to smallholder farmers in tones	97.764
Number of smallholders purchased feed from the Company	11
Total number of workers employed in connection to the innovation	39
Total number of farmers that are benefited from the project	537
Number of contracted farmers that deliver raw material (Ton)	4
Number of non- contracted farmers that deliver raw material (Ton)	18
Total number of products sold in Tons	272
Total number of products cardamom seedlings sold to smallholders	304,500
Total number of raw materials sourced from farmers (Ton)	147
Total number of raw materials sourced from contracted farmers (Ton)	90
Total number of raw materials sourced from non-contracted farmers (Ton)	57
Number of company's other than the grantees that have started business based on the innovations	5
Percent increase in profit based on interviews with farmers buying the seedlings	18
Percentage increase in milk for small holder farmers	10

The programme has also been supporting private sector associations of poultry, spices and aquaculture subsectors. As a result the membership based and annual revenues of these associations have increased. In 2018, through technical and financial support of ENTAG the membership base of the spices, aquaculture and poultry private sector associations has increased in 29%, 100% and 20% respectively. In the same year, a new strategy and action plan for Ethiopian Aquaculture Association has been drafted. The programme also supported private sector associations by provision of trainings on trade negotiations and marketing as well as B2Bs and trade mission linkages to their members. Strengthening of these associations would lead to ability of the organizations to make international and local trade links for their members.

Sector Platform Meetings and International Conferences

To address the multi-faceted challenges of its priority subsectors, ENTAG organizes quarterly platform meetings that bring together multi-stakeholders from the government, private sector, research institutions, NGOs and associations. The aim of the platform meeting is to address private sector issues and furthermore enabling knowledge transfer, experience sharing, new market information, technologies, policy and regulations to better equip the sector players. Furthermore, these platforms are structured in a way that allow the private sector to raise and discuss its challenges and pose questions to concerned governmental and non-governmental bodies that are present in the meeting.

In 2018, 13 national sector platforms were organized, these were focused, among many others issues, on the challenges and opportunities of market and trade in four of the focus subsectors of the programme (poultry, spices, aquaculture and legumes). The platform meetings initiated discussions on challenges that the export and local market are facing as well as production of spices, aquaculture, legumes and poultry subsectors. The meetings served as channels for private sector associations and

companies to discuss their trade and finance issues with the relevant governed agencies such as the MoA, customs authority, coffee, tea and spices agency and MoT&I.

Major issues covered in the poultry subsector platform meetings were poultry research towards the expansion of private sector investment and poultry disease control strategic plan in Ethiopia. These meetings entailed exchanging of views regarding poultry product importation, to clarify the expected value addition in the processing of poultry products, to ensure the safety of the community through the delivery of safe and quality product. As a result, ENTAG, in collaboration with Dutch experts, developed and handed over the first national poultry disease control strategy to the MoAL.

Market challenges in relation to production quality, food safety standards, mycotoxin and other quality problems on spices and legumes products as well as lack of market information and linkage were identified as critical challenges of the export market in the legumes and spices platform meetings. ENTAG created, through the platforms, the venue for actors to discuss possible solutions and strategies for these markets, investment, finance and trade problems. A notable platform meeting on the aquaculture subsector reviewed the National Aquaculture Strategy of Ethiopia. The meeting brought relevant government agencies, the private sector players, academia and the association together to review and update the strategy; this will support the development of the sector. Accordingly, a new strategy and action plan for the Ethiopian Aquaculture Association has been drafted and is under review; a strategic roadmap document has been developed for the establishment of Ethiopian Pulses Council; spice market regulations and the drafting of a poultry policy at national level are some of the results of the different platform meetings.

In 2018 private companies, government agencies and farmer unions attended international events, including trade missions. Ethiopian private companies, government agencies and farmer unions participated in trade missions and international events on trade, technology transfer and business. Notably, the programme organized missions to Gulf Food Expo (UAE), Indian International Spices Conference and Vietnam international pepper event. ENTAG was represented and took stakeholders to the 8th international conference on pulses held in Ethiopia, spices and oilseeds; the African livestock conference and VIV Europe 2018. In these international events networking and B2Bs have been created with both local and international companies.

Attracted and engaged companies to pursue more inclusive and sustainable value chain development

This component of the ENTAG programme focuses on developing inclusive and sustainable business models which entails the incorporation of out-growers scheme and contract farming which supports smallholder farmers and the sector at large to develop. Under the inclusive business model activities, ENTAG has been providing support to businesses by strengthening the value chain from training of smallholders to market linkages.

An innovative revolving fund has been granted to Damacene plc. to establish a smallholder programme in Kaffa. Training women groups to grow rosemary and other herbs. Damacene produces seedlings on credit and the farmers pay back the loan in new seedlings and the cost of the seedling production. Farmers are trained and will have a guaranteed market to sell to. The programme is still ongoing and will be fully evaluated in 2019.

In 2018, through the innovation fund programme, 24 smallholders were supported through an inclusive business model contract that has been entered with the farmers and two completed projects. As part of ENTAG agreement with the companies for implementing an out grower scheme, the projects have been engaged in activities that aim to increase income of targeted local communities through identification and development of poultry, spices, aquaculture and legumes products. The general objective of the projects is to establish effective ways and systems in order to enhance production, processing, marketing and utilization technologies through capacity development of outgrowing farmers and promotion of agro-based industrialization to improve the livelihood of the local communities and then to maximize the return on investment. This should consequently lead to an increased supply of products and help local community members enhance their production.

Two companies entered into contract farming on black cumin with 120 smallholder farmers in Bale and ENTAG supported them technically in training the smallholders in production and postharvest handling.

Two soya bean trading platforms were organized in collaboration with ISSD and CASCAPE in Addis Ababa. ISSD and CAPCAPE support and bring producer organizations and union managers to meet potential buyers of soya bean, processors and exporters while ENTAG linked potential buyers, and facilitated market linkages and networking. In both platform meetings, 56 soya bean-trading deals have been initiated and most of the farmers involved in these deals were women and young farmers.

Through ENTAG's internship initiative, 83 agricultural graduates assigned to 37 Agribusiness Companies in this budget year; out of the 83 interns 30% are female. 7 of these interns were already hired permanently in the companies they were working in.

A success story from spices subsector was published (here) on the aflatoxin free export of red pepper. The owner of the company, a woman, gave interviews about the process and the key success milestone achieved with the support from the sub-sector platform.

Mainstreaming social inclusion and nutrition

Most of the activities of the ENTAG programme involved women and youth who are owners of private companies, commercial farmers and small holders. Thus, in most of the activities described above, directly or indirectly, youth and women have been involved in a significant proportion. The innovation fund supported around 537 smallholders from six completed projects; 20% of them are women. These smallholders benefited from the various projects in terms of access to inputs as well as diversification of household consumptions from dairy and poultry projects. The six completed projects created job opportunities for 36 female and 25 young workers under 35. This increases the participation of women and youth in the production and marketing of the priority sectors products. The below table is a summary of the direct impact of the Innovation grantees.

Description	Volume/Amount
Companies' turnover in euros	59,477
No of female workers	36
No of workers < 35	25
Volume of animal feed supplied to smallholder farmers in tones	97.764
Number of smallholders purchased feed from the Company	11
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Total number of raw materials sourced from non-contracted farmers (Ton)	57
Number of company's other than the grantees that have started business based on the innovations	5
Percent increase in profit based on interviews with farmers buying the seedlings	18
Percentage increase in milk for small holder farmers	10

Conclusions and recommendations

Achievements

- Trade mission organized to India resulted in export of legumes worth of USD 1.2 million. Besides, Methyl Bromide fumigation was demonstrated and visit was paid to a standard processing company to initiate fumigation and modern processing business by Ethiopian companies;
- Innovation fund granted in the remote area Amhara contributed to the improvement of white pea bean grade at ECX trading platform from low grade to Grade 3;

- 56 B2Bs were facilitated among 7 soya bean supplying unions and 8 food and feed processing companies and exporter;
- Financial product profile document was developed;
- The market and trade support for the spices sector in terms of product diversification is increased from 2 products, turmeric-bulb and finger, to 6 products, red pepper, black pepper, black cumin and turmeric powder products were added;
- The total volume and value of spice export contracts facilitated by ENTAG was increased by 59.5% and 47% in volume and value respectively;
- Income of 1728 smallholder farmers, 1 commercial farmer, 7 turmeric and 1 black cumin aggregators increased by selling 941.6t of turmeric and 38t of black cumin, which is worth of 18.87 million ETB;
- Successfully organized 4 trade missions (India, Egypt, the Netherlands and Vietnam) and participated in a number of international events that established contact with more than 144 international business companies;
- Through ENTAG's internship initiative, 83 agricultural graduates were assigned to 37 Agribusiness Companies in this budget year; out of the 83 interns 30% are female. And 7 already secured a permanent position.

Challenges, opportunities and lessons learnt

- The B2B and market linkages support of ENTAG has been constrained because of exports contract default and stringent food safety and quality control by potential buying countries of Ethiopian products;
- Volatile peace and instability throughout the country has hindered some of the programme's planned activities from effective implementation;
- The implementation of innovation fund projects and their expected impacts have been constrained due various reasons, such as foreign currency shortage to import machines and materials from abroad; grantees' incapability to raise their share, poor financial administration and mismanagement of the money they got from the fund;
- For the soya bean trading platform, though it is meant to link the producers with central buyers, the match making could not happen because the suppliers couldn't come up with the required quality and quantity as well as expected price;
- Lack of responsiveness and misunderstanding on the aim of the pulse council establishment by EPOSPEA;
- Communication and negotiation skills of some of the suppliers appears to be limited, hampering direct supply from them to the buyers. Collaboration with other programmes could be explored to work on this issue;
- Slow response from government bodies in taking up points raised and at platform meetings by the multi-stakeholders attendants;
- Mismatch of demand and supply of trade and marketing;
- Slow progress of some of the associations to take up market linkage activities;
- In trade missions only company owners, shareholders and general managers should be allowed to join; regular employees are too often participated half-heartedly.
- There is high demand for rosemary, thyme, and gums and resin products in the international market. Focus on market and trade support for next year should be in this direction.
- B2B and market linkages support are major driving forces for the subsector development;
- The platform meetings are crucial for availing and maintaining sustainable information exchange among actors of the subsectors. Moreover, it is critical to actively engage actors in the development of the subsectors.

Way forward

- ENTAG should when possible diversify its trade and investment support, supporting more and different companies;
- Platform meetings and trade missions should be strengthened and more work should be done to build upon the business relationship among Ethiopian and Dutch companies as well as companies from other countries;
- More intervention is needed in awareness creation, extension (mobilization), skill development and financing of the private sector, smallholder farmers and professionals;

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- Government commitment and support is required to promote the agribusiness sector in the focus subsectors of the programme hence, ENTAG should ensure its participation in subsector platform meetings to support actors on tasks like implementation of market regulation;
 - Strengthening the private sector associations is essential as they can play central and key roles in their respective sectors through its strong relations with its company members as well as government agencies (hence ENTAG's strong cooperation with PSA's).
 - There is a clear need for continuing provision of technical support and sector based information to new and existing businesses to bridge the gap between demand and supply.

Improved enabling environment

In ENTAG we target the following outcome for contributing to improved enabling environment in our priority sectors:

1.1 Strategies to solve selected sector-wide issues are developed and implemented

Strategies to solve selected sector-wide issues are developed and implemented

ENTAG has supported 3 private sector associations and one council in developing and fine tuning their strategic plan by providing technical support through its coordinators as well as hired local and international consultants. This support, along with the finance provided to run some of the planned activities are expected to strengthen the associations so they take over the lobby and advocacy work for their respective sectors.

ENTAG in collaboration with an international expert, GD Animal Health, have delivered the strategic plan for disease prevention and control in commercial poultry to the State Minister of livestock. The development of the document was done with the contribution of several public and private stakeholder discussions both in Ethiopia as well as a mission to the Netherlands. The main objective of the strategic plan was to analyse the current situation, identify the gaps and to advice on how to strengthen/ improve the institutional poultry health and disease control in Ethiopia considering the current expansion of the poultry industry. The Ministry is currently reviewing the document to plan interventions and come up with plan of action.

ENTAG organized a platform on import of poultry products, and the safety precautions that need to be taken in value addition. The platform included a poultry research review for the development of the poultry sector in Ethiopia and panel discussions on problem oriented and basic research for the advancement of the poultry sub-sector.

Mainstreaming social inclusion and nutrition

Following a series of consultative meetings with various stakeholders, it was agreed that the issue of food safety is a critical matter, which needs multi-faceted solutions. Hence, a task force, led by MoA and the then MoT&I was formed to start the initial work of stakeholders mapping and outline the possible activities to be taken up. Identification of the gaps in capacity was also done in a workshop with the public sector actors, which will be followed up with capacity building actions in 2019.

ENTAG conducted several social impact assessment studies in 2018. From these one was around Kunzila area where five Dutch horticulture investors are setting up a new horticulture cluster about 55 km west of Bahir Dar. The social impact assessments identified the possible risks (social, economic, environmental and political) in relation to the envisaged or existing investments. The findings of these assessments are being used to advise the companies to tailor their CSR work and general engagement and coexistence with the surrounding community. The programme did 7 social impact assessments for different companies.

Conclusions and recommendations

Achievements

ENTAG lobbied to solve the problems facing the Ethiopian poultry, spices, aquaculture and legumes sectors. Some of the critical issues in these sectors have been brought to the attention of respective government agencies and other relevant stakeholders. As a result of this effort:

- A poultry disease control strategy document has been developed and handed over to the Ministry of Agriculture;
- A poultry policy has been drafted and it is under review;
- The first Ethiopian spices market regulation has been drafted and reviewed by stakeholders;

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- A new strategy and action plan for Ethiopian Aquaculture Association has been drafted and it is under review;
 - A strategic roadmap document has been developed for the establishment of Ethiopian Pulses Council;
 - Consultative meetings were organized for the MoA to meet ambassadors of few target countries, for example Pakistan, and prominent private companies to discuss on the export challenges of commodities in priority subsectors.

Challenges, opportunities and lessons learnt

- High interest and motivation of most relevant government offices to consider suggested policy and strategic solutions to solve sector problems;
- The lesson learnt on this aspect is that there is lack of a well-defined and structured enabling environment for investment and private businesses operating in the four priority sectors of the programme. The relevant bodies are however, increasingly becoming keen to address issues that have been raised by the private sector.

Way forward

These policy and strategies under development need further regulations and standards to address specific issues of the sectors-poultry, spices and legumes. As a way forward, ENTAG will follow up on the ratification of the draft policy and strategies, as well as their corresponding specific implementation regulations and standards:

- Implementation of the pilot projects for the poultry disease control strategic plan;
- Ratify the investment incentive package and poultry policy;
- Formal engagement of EPOSPEA in the process;
- Ratify the national spices market regulation document;
- Lobby and engagement of the upper end actors of Ethiopian pulse sub-sector;
- Engaging MoA and MoTI to lead and recognize the establishment of Ethiopian Pulses Council.

This will be done by strengthening the platforms that will increasingly aware relevant government bodies on specific challenges within the sectors and give support on how detailed implementation plans can be developed.

Collaboration

M&E and communication

In 2018, ENTAG produced various communication materials (here) to enhance its visibility and communicate its impact to its stakeholders and partners including the EKN. The programme produced three quarterly newsletters; 4 most significant videos for the BENEFIT midterm evaluation; several articles for its website, social media and BENEFIT level newsletters; brochures and training leaflets. ENTAG made a case study video and printed material on aflatoxin related problems of the spices export in Ethiopia. Moreover, communications and PR activities were done on several ENTAG and national events related to agribusiness and these were covered on Ethiopian and other countries media, in addition to ENTAG web-based and print communications outlets.

As part of a follow up from 2017, ENTAG has also been working on profiles of its target private companies. In this reporting year, the programme published more than 100 company profiles for companies active in the legumes, spices, poultry and aquaculture subsectors. More profiles of additional companies are coming up in the following year. The programme website, which has received more than 100,000 views in 2018, is integrated with functional ENTAG social media pages and a Youtube channel. The website of ENTAG has also served as a source for some news and updates on the BENEFIT website. In 2018, ENTAG co-organized the business drinks every 2 months together with AgriProFocus and communicated its impacts and brand through invited winners of the innovation fund and its own team members. These business drinks also helped facilitate business linkages as 50 to 70 entrepreneurs and people from companies, development organization and universities attend each event.

Regarding public relation activities, ENTAG has been working with the national print and broadcasting media to enhance the visibility of its interventions, the BENEFIT office and the general development cooperation of the EKN in Ethiopia. The national broadcasting and print media covered most of the sector platform meetings. The state TV and other notable broadcasting media in the country produced news and special coverages on the activities of ENTAG in relation to food safety, mycotoxins and other agribusiness development efforts of ENTAG. Three featured articles on local print media and two others on Egyptian and Vietnamese newspapers were published.

Regarding M&E, ENTAG, based on its own theory of change and BENEFIT key performance indicators, has been regularly collecting data for the bi-annual BENEFIT report and ITT. Activities of the programme have also been monitored based on the performance evaluation tools in biweekly regular meetings; weekly reports; regular management meetings to check activities against the set plan; and data collection for the ITTs. Innovation fund projects have been monitored using a baseline and endline data for completed projects. Six projects from the first round winners are now completed; and hence, the outcome of these projects has been synthesised and documented in 2018. Conducting baseline and end line of innovation projects will be continuing as new round winners are coming in and older projects are close to completion. The baseline is a requirement for the release of first disbursement for winning projects as it facilitates future follow ups and monitoring of the grantees. ENTAG, as part of BENEFIT, also has taken part in the regional monitoring of the collaborative activities.

Collaboration

Collaboration with BENEFIT programmes

ENTAG has organized 2 soya bean trading platforms in collaboration with ISSD and CASCAPE in Addis Ababa. The collaboration with ISSD and CAPCAPE is to support and bring producer organizations, Union managers to meet potential buyer of soya bean Processors and exporters while ENTAG was to call for the potential buyers and facilitated market linkages and networking. In both of the platforms, 56 soya bean trading deals have been initiated for 9300 Tons but until the compilation of this report deals were not yet finalized.

Monitoring of some of the innovation fund projects was done together with BENEFIT-ISSD and Dairy BISS in 2018.

ENTAG also has been working with other BENEFIT programmes on product and place (P&P).

Staff of the BENEFIT partner programmes participated in various ENTAG activities, notably in the gender mainstreaming, platform facilitation, change management and business plan development trainings, as well as platform meetings. Several also made use of the ENTAG front desk service. ENTAG also involved actively in product place collaboration meetings and field visits.

Collaboration with other projects and partners

CBI Oilseed and Pulses Scoping Study: this assignment was executed on behalf of CBI but strong collaboration was maintained with ENTAG. The study intended to address possible intervention areas for CBI in Ethiopian oilseed and pulses exports for the next four years. Given that ENTAG is also active in the sector the study fully accounted ENTAG's current intervention and any future take off by CBI will be linked with ENTAG. Discussions were held with the ENTAG team in Addis Ababa as well as in NL to ensure proper synergy is achieved.

ENTAG in its spices subsector increased its collaboration with national research institutions, NGOs and other government agencies on platform meetings, food safety, production, quality, marketing and postharvest handling. Some of the collaborative organizations are Research institutions-TNSRC, WARC, SARC, GARC and BRI; NGOs-NABU, SITA and ATA; government agencies-FMHACA, EIC, ERCA, ECTSA, MoA and MoT&I.

ENTAG poultry subsector collaborated with various Dutch based and national government and non-government organizations on policy and strategy development, platform organization, training delivery, market and trade. Some of the collaborative organizations are EPPPA, MoA, EMDTDI, NAHDIC, NVI, VDFACA, EIAR, EVA, ATA and VDFACA. Dutch private sector collaborators are HAPP/DAPP, NABC, GD, CVI, Trans National Agri, Advance Consulting, Aeres University of Applied Science, Trouw nutrition, Wageningen Bioveterinary institute and Hendrix Genetics. Two Dutch companies are direct beneficiaries of the first round innovation fund, while another company is affiliated with Dutch Entrepreneurs.

The Aquaculture sector in ENTAG has established and/or strengthened collaboration with various partners on research, training, platforms and trade missions. These include, BioMar Group in France (in research), Ziway Fisheries and Aquatic Life Research Centre (research, training, trade mission), WorldFishCentre in Egypt (trade mission, joint platform meeting), MoA (trade mission, sector association), MoT&I (sector association), Ethiopian Aquaculture Association (trade mission), Hawassa University (training, international conference, platform meeting), Hawassa Fish Research and Breeding Centre (training, field visits), Debre Birhan University (research, graduate student supervision), National Fisheries and Aquatic Life Research Centre (research), Bahir Dar Fisheries and Aquatic Life Research Centre (training), and FAO-China-Netherlands Triangular Cooperation (feasibility study, project formulation).

In its trade missions, ENTAG collaborated with Vietnam pepper association for Vietnam; NABC for the Netherlands; World fish centre for Egypt and SITA for India.

ENTAG has actively participated in the NICHE-EMBA programme between Jimma University and Maastricht. ENTAG's network was used for marketing and selection of advisory committee. Case studies of ENTAG supported companies were conducted and ENTAG provided backstopping to the programme from the perspective of private sector.

ENTAG legumes and spices business platforms have actively been working with ITC-SITA in resolving the potential trade barrier to export destinations. SITA and MoA have presented a national pulses strategy on ENTAG's legume platform meeting. In addition, SITA was involved in the concept development and discussion with H.E. Minister of Trade to resolve the trade barrier to India and Pakistan. UN-ITC-SITA and ENTAG have also been working on aflatoxin issues on turmeric production and export.

Collaboration With Dutch Private Sector

- Two Dutch private business companies (ASA plc and Meta Meta plc) are direct beneficiaries of first round innovation fund while another Company is affiliated with Dutch Entrepreneurs;
- ISA Hendrix Company: collaborated with this company on preparation for the ALEC/Ethiopex exhibition;
- ENTAG in collaboration with AgriProFocus Ethiopia successfully organized 6 business drinks in 2018. These events brought players of the agribusiness sector in Ethiopia to share new experience and best practices and sell their products;
- Trans national Agri: collaborated with this company to conduct the training on poultry slaughtering;
- Trouw nutrition, Nutreco: collaborated with this company on market data on Information regarding animal feed in Ethiopia;
- HAPP/ DAP: collaboration on HAPP representative here in Ethiopia on sector information, market linkage, etc. we are also strategically supported them to create networking section by creating B2B and group visiting them on their both during trade missions we organized;
- NABC: collaboration on business by organizing the trade mission together with ENTAG poultry coordinator;
- Other Dutch based private sector collaborators are GD, CVI, Advance Consulting, Aeres University of Applied Science, Wageningen Bio veterinary institute and Hendrix Genetics.

Mainstreaming social inclusion & nutrition

ENTAG, in its collaborative activities and initiatives, it analyses the opportunities and risks from a community perspective in a series of dialogues with the local community members, women and the youth. Thus, the activities and their outcomes should equally address the needs of communities, smallholders, women, children and the youth.

Conclusions and recommendations

Achievements

- Through collaboration with BENEFIT partner programmes 56 B2Bs were facilitated among 7 soya bean supplying unions and 8 food and feed processing companies and exporter;
- Soya bean trading platforms were organized in strong collaboration with ISSD and CASCAPE;
- Effective trade missions and exposure visits were made through collaboration with World Fish Centre, Vietnam Pepper Association, NABC and SITA;
- ENTAG in collaboration with AgriProFocus Ethiopia successfully organized 6 business drinks in 2018. These events brought players of the agribusiness sector in Ethiopia to share new experience and best practices and sell their products.

Challenges

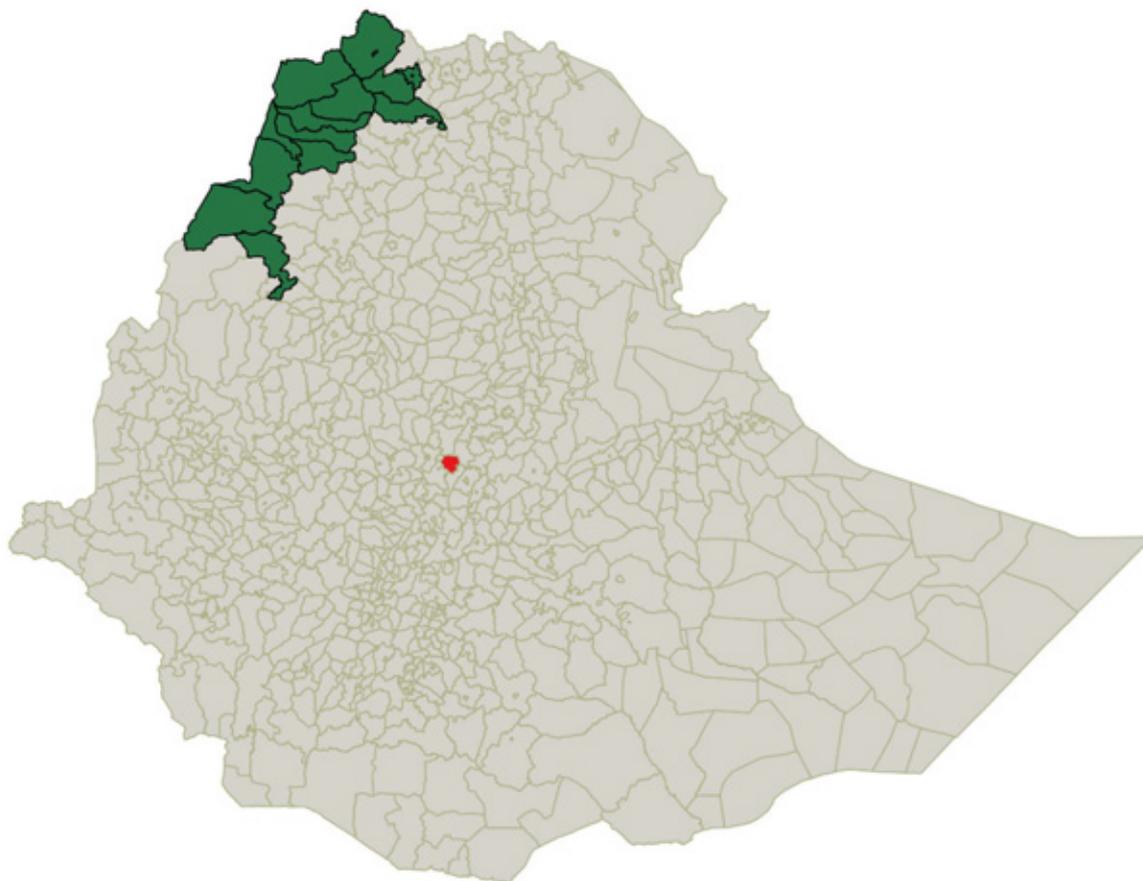
The financial support policy of ENTAG and the financial need of government sectors, research and professional associations has limited the extent of collaboration between ENTAG and some subsector stakeholders.

Way forward

To enhance efficiency and avoid duplication of efforts, ENTAG will strengthen its partnership with existing and new partners that work on its priority subsectors. Some of the outcomes that have been achieved so far need further collaborative interventions that consolidate the results and facilitate sustainability. To this end, ENTAG will increasingly work on new and existing collaborations within the BENEFIT umbrella as well as other actors from outside.

SBN

The logo for SBN features the letters 'SBN' in a bold, green, sans-serif font. The letter 'N' is partially overlapped by a circular green emblem containing a white silhouette of a plant branch with leaves and flowers.



Executive Summary

Introduction

The SBN Theory of Change is that the combined effect of three primary programme outcomes, which are aligned to the three main pillars of the overall BENEFIT result chain, induce the overall project goal. The three primary outcomes reflect the project strategy to combine production-push and market-pull value chain development, with strong stakeholder collaboration, both at local and strategic level. This is at the heart of the agribusiness cluster and network approach that SBN applies for sesame sector development. The project goal, the three primary outcomes and the 10 intermediary outcomes, of which one is cross-cutting, are summarized in the figure below.

Goal	Competitive, sustainable and inclusive sesame sector development for farmers' income improvement and spill-over effects		
Primary outcomes	1. Production cost price reduction	2. Product and market development	3. Strengthened enabling environment for the Ethiopian sesame sector
Intermediary outcomes	Yield and quality improvement (1.1)	Post-harvest value creation (2.1)	Evidence-based information and sharing (3.1)
	Harvest, transport and storage loss reduction (1.2)	Improved market linkages and sales (2.2)	Stakeholder capacity development (3.2)
	Improved farmers' access to input credit (1.3)	Improved access to marketing credit (2.3)	Enhanced stakeholder collaboration (3.3)
	Strategic sesame sector innovation (3.4)		

Main achievements

- 163,679 farmers and experts trained in good agricultural practices, weather data interpretation, loan management, nutrition sensitive agriculture, home garden, ... etc.
- Clustered based roll-out of the sesame package is getting momentum in both regions, facilitating wider use of machinery and extension service.
- For the 6th year in a row, field evidence showed that improved practices can double yield/ha, reduce costs of production and improve farmer income.
- Continued adoption of machinery (9 row planters and 5 harvesters purchased by investor farmers in Tigray) is stimulating adoption of other agronomic practices as well.
- Field guides for organic production, pest and disease control prepared and shared. Cotton production guide prepared, but will be printed and shared in 2019.
- The weather forecasts shared with 3,060 farmers and experts were reliable, timely & appreciated.
- >15,000 farmers trained in financial literacy and record production costs. Enthusiasm at household level, with involvement of women and children. Banks and MFI's also interested in the approach.
- Facilitated 30.5 million marketing credit from CBO, Abay and Lion banks to 3 unions and 22 coops, which. raised a lot of interest of banks, MFIs, government agencies and sister projects.
- Regional stakeholders' networks are in place for supporting and developing the sesame sector.
- Soya bean in Amhara and mung bean in Tigray production is radiating very fast.
- Staking sesame hillas in cone shape is used widely in Amhara, Metema area.
- Two new sesame varieties released (Setit 3 and Gonder 2) for moisture shortage areas.

Major challenges and opportunities

By the end of the year 2018, the SBN team organized regional meetings in Tigray and Amhara, during which ten strategic issues were shared and discussed.

- For production and yield improvement (pillar 1): a) machinery and mechanization; b) performance of investor farmers; c) input credit for production improvement, d) farmers' literacy and savings; e) high insect pest and disease infestations, f) erratic rainfall; g) low input.
- For Product and market development (pillar 2): a) financing cooperative marketing credit; b) cooperative as business organisations, and c) value chain development were discussed.
- For Enabling environment (pillar 3): a) information and communication management system; and b) establishing and sustaining regional and national platforms.
- A cross-cutting point of attention is social inclusion: a) labourers, b) food and nutrition, c) gender and youth, and
- A point of concern is the security situation in the SBN intervention areas.

Stakeholders discussed on the strategic issues, identified opportunities and challenges presented in the respective chapters and in the paragraphs on social inclusion. Based on lessons learned stakeholders defined orientations for the way forward.

Lessons learned

The lessons learned relate to the adoption of best-fit practices, mechanization, financial literacy, marketing credit, post-harvest loss reduction and value creation; weather forecasting, and stakeholder collaboration. New insights of 2018 are the following:

- The input finance challenge slowed down full adoption and take-off of the 20 steps, but mechanized row planting is increasing, demand for policy measures and linking with supplying companies.
- Encouraging integration of soybean in Amhara and mung bean in Tigray is achieved. The recent inclusion of these crops in the ECX platforms is expected to trigger production of these crops.
- Adoption of 65kg/ha urea recommendation in Amhara expanding; amount applied doubled in 2018.
- There is spontaneous adoption of the cone shaped hilla stacking methods, and making of larger hilla sites, which reduced wind damage and served as a threshing ground.
- The demand for weather forecast services is strong. But institutionalization and sustaining the service delivery needs multi-stakeholder action as farmers are ready to pay for the services.
- The season was accompanied with bumper and meagre harvests; because of good or bad rainfall distributions; waterlogging or drought, pest incidences, hail and windstorm damages. Affecting yield and farmer income improvement.
- The financial literacy training aimed at crop production cost recording increasingly perceived as an opportunity for farmers to be linked to MFIs. Needs increased involvement of women and school children in cost recording, cost-benefit analysis and agro-economic decision making.

- The observed cooperative general assembly's decision to train members' in financial literacy with own contributions is a sign of institutionalization. Strong interest in the developed approach and tools within and outside BENEFIT. This encourage further scaling and sustaining the cost recording.
- Cooperatives increasingly emerge as business organisations that are eligible for loans. In 2018, several banks and MFIs showed interest to provide marketing credit to cooperatives and the guarantee fund modality was expanded to 22 cooperatives with 30.5 million ETB marketing loan.
- The marketing credit allowed for coop internal on-lending to members who repay in kind, improved cooperative presence in the market, reduced dependency on informal money lenders and leads to higher incomes for farmers: direct contribution to the goal "farmer income improvement". There is however still quite a journey to make before having professional and trustful farmer-bank relations.
- In-country value addition and local sourcing and contract farming are almost a non-starter in the current context, marked by highly inflated domestic ECX prices.
- SBN, by virtue of its agribusiness cluster and network approach, works with implementing partners via collaboration agreements. Stakeholder ownership of the programme is high. Basically, regional and local organisations see it as a player that is supporting their endeavours.
- Time is ripe to establish a formal regional sesame stakeholder association or network in both Amhara and Tigray. This could be the stepping stone towards the national sesame platform.

Way forward

In 2019, the focus is on scaling and institutionalization, collaboration and capacity development of implementing partners. More specifically the focus of SBN will be put on the following subjects:

- Bottom-up agro-economic planning for improved and sustainable farmers' access to input credit, risk reduction of MFIs and agri-finance as instrument of good agricultural practices adoption. In partner with FIs, BoA and cooperatives focusing on strengthening coordination and collaboration.
- Sustainable seed system development (multiplication and marketing) in collaboration with ISSD.
- Optimal and adoptable integrated soil fertility management system, with due attention for rotation crops and smart use of chemical fertilizers, in collaboration with CASCAPE.
- Scaling of mechanization options for different farmer categories and mechanization business models, in collaboration with MoA and BoA, ATA, cooperatives, investor farmers and companies.
- Up-scaling and institutionalization of weather forecasting and advisory services for farmers' climate change adaptation, in collaboration with Weather impact and NMA.
- Integrated insect pest and disease management, with emphasis on transferring best practices to extension officers, input dealers and farmers, in collaboration with BoA and Selet hulling.
- Scaling of best options for drying, threshing and storage of sesame and rotation crops.
- Institutionalization of financial literacy training (FLT) with inclusion in the regional and national extension training and implementation programmes. Scale FLT with active participation of women.
- Look for practical cases of local value addition in collaboration with ENTAG.
- Facilitating marketing credit for unions and cooperatives via the guarantee fund and towards trustful relation building between banks/MFI's and unions/cooperatives.
- Documenting the three years of experience in guarantee fund and sharing lessons learned; working for sustaining the risk sharing/guarantee in the form of revolving fund at regional and federal level.
- Evaluating and capacitating coops with unions/coops, FCA, RCPA's, Ardaita college and GIZ.
- Assessing challenges and opportunities for adapting the ECX marketing system, with lessons learned from other countries or the coffee sector in Ethiopia, organize a high level workshop.
- Development of digital information system and exploration of ICT solutions for the sector.
- Establishing national sesame business platform/network with sustainable financing source/s of the SBN's communication tools and channels. Through levy system or any decided upon by members.
- Attention for social inclusion (labourers, women, youth, food and nutrition diversity), in collaboration with social and labour affairs, women and youth offices.
- Organizing thematic meetings on labour, mechanization, financial literacy, guarantee fund.
- Documenting SBN tools, experiences and lessons learned during 1st phase of SBN and share them in written and audio-visual outputs.

Quality and quantity of sustainable agricultural production

SBN in collaboration with stakeholders trained 1,134 experts on GAP, who cascaded the '20 steps' to 162,545 farmers. Recommended practices were scaled to 89,112 smallholder and 25 investor farms on 81,300ha. MRY/MRR studies ascertained a 145% yield improvement over the farmer practice and

per quintal production cost reduction of >45%. >3000 farmers used weather forecast information for farm decision making. Demonstration of rotation crops is leading to increased production of food and malt sorghum; soya and mung beans; contributing to farming systems diversity, improved local food production and farm income. Efforts were made to diversify and improve the nutrition status of farm households and labourers. >15,000 farmer households trained in financial literacy, keep financial records, calculate costs and benefits. Banks and MFI's developed clear interest in farmers' cost recording and thus making farmers more eligible to credit. 5,585 farmers from 22 cooperatives benefitted from on-lending of marketing credit. They accessed input credit at a much lower cost (18-20% instead of 100% interest rate of informal money lenders).

Improved markets and trade

Three banks (CBO), Abay and Lion) provided 30.5 million ETB marketing credit to Setit, Metema and Dansha unions through the guarantee fund (10.3 million ETB) facilitated by SBN and Agriterra. This helped 22 cooperatives to buy more sesame from their members and to stay longer in the spot market. The loan management training and frequent monitoring of SBN, F&S and Agriterra improved financial management skills and resource mobilization capacity of unions and cooperatives. It resulted in high loan repayment rate, increased membership and share sales, improved savings and a better relationship between unions and cooperatives. Selam Union was encouraged to mobilize member contributions to operationalize their idle cleaning machine. In some months the members managed to mobilize 1.2 million birr and started cleaning sesame. Value adding processes face challenges of high input cost; processing inefficiencies, lack of infrastructure and limited market demand to achieve scale and realize profits. Establishing direct supplier-buyer relations remain the major challenge of product and market development; including sesame-based products for the domestic market. Continued efforts will focus on improved traceability, market transparency, price information sharing systems and ECX reforms.

Improved enabling environment

After the transfer of the SBN database to woredas, a start has been made with the establishment of a sesame sector information system in six kebeles, based on the E-Prod package. Capacity of farmers, women, youth, and experts was built on improved sesame and rotation crop production, weather information use, loan management, nutrition, home gardening, and cost record keeping. Field days, meetings and workshops served as learning and exposure events for 49,638 farmers and 820 other stakeholders. The number of farmers recording production costs and doing cost-benefit analysis increased to 16,900 farmer households. This contributes to developing farming as a business (farmer perspective) that can be funded by FIs (MFI/bank perspective). For improving input credit, a tool for bottom-up agro-economic planning was tested for the second year. Experiences with financial literacy training and guarantee fund were documented and shared. After the political changes, the process leading to the establishment of a national sesame platform was interrupted and delayed.

Partnership and collaboration

SBN, ISSD, CASCAPE, ENTAG collaborated in enhancing sesame and sorghum value chain integration and market linkages. Collaborative activities included: training of experts and farmers on sesame and rotation crop GAP, soil fertility and pest management, quality seed production and SPC exchange visit, crop variety adaptation, post-harvest handling and store management, marketing and cooperative management. Farmers evaluated CS/PVS plots with multiple sorghum (8) and sesame (10) varieties. Home garden piloted in Metema and Tsegede using tomato, onion, pepper, okra, Swiss chard, cabbage, Jirjir, and lettuce. Three SPC's were supported with row planting (43ha). Regional/national field days were jointly organized in Kafta Humera, Asgede Tsimbila, Tach Armachiho and Tegede woredas. 15 Workamba SPC members visited Ras Guna SPC and gained experience in seed marketing. A successful exchange visit to India was organized in collaboration with ENTAG. The nutrition baseline survey revealed the low dietary diversity, >95% consuming <6 food groups in the sesame production zone. The gender baseline survey learned about decision-making and division of tasks in MHH and FHH households. FHH depend on hired labour and have limited access to extension services, fertilizer, seeds and chemicals.

Quality and quantity of sustainable agricultural production

SBN target on the following primary outcome indicators for contributing to increased quality and quantity of sustainable agricultural production: "Farmers applying innovations reduce farm-level production cost price with 25% per quintal (cost-benefit ratio for farmers)" Three, related intermediate outcomes, each with specific KPI's, contribute to the achievement of the primary outcome (1.1) Yield and quality improvement (8 indicators); (1.2) Harvest, transport and storage loss reduction (2 indicators) and (1.3) Formal financial services and input credit to farmers (3 indicators). In the next paragraphs activities and achievements in 2018 are summarized. Challenges, opportunities and the way forward are shortly discussed. Details are in the full SBN annual report.

Sustainable production – production cost price reduction

Yield and Quality improvement

Planning and practical preparations for agricultural season

Adoption levels. sesame was cultivated on 580,267ha. Number of small holders 245,707 and investors farmers was 2,877. To improve production, productivity and quality of sesame, 20 steps was trained to 161,990 (50,347F), out of which large scale farmers were 555 (6F). The Production package was fully applied by 14,618 while 74,494 were partial adopters. About 81,300ha was covered by full and partial adopters, out of this 24,731ha full and 56,567ha under partial adoption. 25 investor farmers applied the '20 steps' on 741ha on plots ranging from 5ha to 70ha. In both regions productivity varied significantly; Amhara (2-7qt/ha) and Tigray (3-10.5qt/ha).

Weather forecasting, climate adaptation and crop modelling

Weather variability (high/low and untimely rainfall; hail, high speed wind) within and among years become a challenge in sesame production, resulting in low productivity and quality, and pest outbreaks.

To reduce crop loss SBN in collaboration with CommonSense, Apposit Plc, Weather impact and NMA, provided localized weather forecast service to 3,060 farmers, woreda and kebele agricultural experts, researchers and teachers via SMS twice a week. Training of trainers was provided to agricultural experts and teachers on correct interpretation of the forecast information. The ToTs cascaded to famers in their respective kebeles. The information contained probability of the weather condition in the next 3 and 7 days. Farmers used the information to plan and take measures on their field activities and consider weather information as helpful tool to optimize yields and reduce losses.

About 96.6% of interviewed farmers confirmed its appropriateness and 88% understood the message and interpreted into action. 55% of respondents scored very accurate. On wind speed forecast 64% said it is very accurate. About 76% of farmers used the information for stacking hillas together; making fence around hillas to protect from falling; to adjust time of harvesting; to put a heavy wood on sorghum and millet heaps. Rainfall information was used to adjust sowing dates; hire labour, for weeding, top dressing of fertilizer, harvesting, using plastic sheets, protecting harvested millet and tef. 53% of temperature information was used for applying urea, or pesticide or hilla stacking. 88% satisfied with periods of forecast, while 12% recommend to include short term and long term forecasts which may help for planning the type of crop to grow. Generally, the weather information helped them to mitigate risks and maximize yield. Recommendations were to explain units, terms and parameters in simple way, to include seasonal forecasts and farm advisory services and make it sustainable.

On-going innovation of good agricultural practices

The overall objective was to generate, promote and multiply sesame, sorghum, soya and mung beans and sunflower technologies that could improve productivity and quality of the produce. This includes: developing improved varieties; pest management technologies; determine type and rates of blended and organic fertilizers; improve soil fertility status of the production system; to demonstrate, test and pre-scale proven technologies, knowledge and skills; multiplication and distribution of technologies enhance capacity of research staff, development and private sector. The technology generation and testing activities were divided into five components:

1. Improved crop variety development (10 activities)
2. Soil fertility management (2 activities)
3. Seed multiplication
4. Pre-extension demonstration and scaling (2 activities)
5. Capacity development.

Component 1: Improved crop variety development, testing and promotion

- Among 16 sesame varieties tested for their response to irrigation at Metema; ACC-051-02 gave 20.8qt/ha yield while Adi recorded 18.9qt/ha.
- Under regional variety trial (RVT), 15 genotypes tested at Metema, Tach Armachiho, Sirinka and Humera, but results are not ready for this report.
- For pure line selection 240 selection were planted at HuARC and 25 lines harvested and maintained for testing in 2019 in preliminary variety trial plots.
- In PVS at Belesa 12 sesame varieties were evaluated and variety setit-2 recorded 10.5qt/ha, Setit-1 (10.4qt/ha), and Obsa (9.8qt/ha).
- Under the sorghum cultivar 'Deber' characterization 42 lines were planted and being evaluated for head size, seed colour, and head shape. They will be tested for food & malt quality.
- Of the 13 sunflower genotypes evaluated for seed yield, genotype 202492 gave 15.6qt/ha; 202497(14.9qt/ha), 202495 (13.7qt/ha) and 92002 (13.7qt/ha).
- Five sunflower varieties tested for adaptation and the Russian Black 24qt/ha, Oyissa 23.5qt/ha.
- Cotton regional variety trial conducted using 16 genotypes at Metema, Tach Armachiho and Humera, but yield is not ready to report.
- Survey on the prevalence of cotton mealybug was made on sesame in Gonder zones. The insect was prevalent in few fields on few plants.

Component II: Soil Fertility Management

- The effect of phosphorus fertilizer on the yield of mung bean was studied at Metema and Tach Aremachiho. Application of 23kgN and 84Kg P2O5 gave the highest yield (16.6qt/ha).
- Three organic fertilizers were demonstrated for sesame yield improvement. The highest yield (459kg/ha) was obtained from 100 kg DAP and urea 50 kg urea. The 200 kg/ha Orga yielded 456 kg/ha seed, which is very close to synthetic fertilizer rate (Table 1).

Table 1 Treatments and yield obtained in organic fertilizers study at Humera

No.	Treatment	Yield (kg/ha)	No.	Treatment	Yield (kg/ha)
1	100 DAP + 50 kg/ha Urea	459.6	4	100 lit/ha Eco-green	414.2
2	200 kg/ha Orga	456	5	80 ml/ha Bombardier	361.3
3	control (No fertilizer)	424.7			

Component III: Seed Multiplication

The programme supported pre-basic and basic seed multiplication. 371 qt seeds of sesame varieties (Setit-1, Humera-1, Setit-2 and Setit-3); 81 qt of Mung bean varieties Arkebe and Rassa; 94qt soya bean of varieties Gisham and Rassa and 35qt sorghum variety Melkam was multiplied in HuARC and GARC (Table 2).

Table 2 Crop type, variety and amount of seed multiplied in 2018.

Tigray				Amhara			
Crop	Variety	Seed class	amount (qt/ha)	Crop	Variety	Seed class	amount (qt/ha)
Sesame	Setit-1	Pre-basic	9.0	sesame	Abasena	Pre basic	8.0
	Setit -2	Pre-basic	283.2		Gondar-1	Pre-basic	3.5
	Humera-1	Pre-basic	66.6	Sorghum	Melkam	Basic	35
	Setit -3	Breeder	12.2		Soya bean	Afgat	Pre basic
Total sesame			371.0		Gisham	Basic	26
Mung bean	Arkebe	Pre-basic	71.0			Pre-basic	24
Total improved seed			442.0	Mung bean	Rassa	Basic	10
							150.5

Component IV: Technology Scaling and Extension

- Sesame variety Setit-3 was demonstrated on 14 farmers' fields in Kafta Humera and Tsegede Woredas to assess the socio-cultural acceptance and economical profitability.
- Soya bean variety Gisham was scaled after inoculating with 500gm bacteria SP-12 and mixed with NPS fertilizer at 50kg/ha gave on average 23qt/ha seed yield.
- Sorghum variety Melkam scaled on 165ha of 240 small holder farmers. data not yet ready.

Component V: Capacity Development

Integrated soil fertility management

The activity domain included 1) Metema and Humera soils characterizing and mapping; 2) QUEFTS model validation; 3) training RARIs' and SBN staff on QUEFTS model validation; 4) testing organic fertilizers; 5) integration of rotational crops; 6) testing of artificial fertilisers and their combinations; determine fertilizer types and rates (for details refer chapter 4: collaborative activities).

Mechanization

Sesame row planter scaling: row planter, cultivator and harvesters were scaled on 1,260ha (158 smallholders, 10 investor and 5 youth farmers). Average yield of 6qt/ha was harvested from the full package and 3qt/ha from farmers practice (Figure 1). In Amhara 142ha was planted using the row planter at Delelo, Mierab Armachiho, and Tegede woredas. Due to the high rainfall in the areas most of the fields were devastated. As result of continuous scaling, 9 row planters owned by 4 investor farmers and Humera farmers service center. Inter-row cultivator was demonstrated in Humera research center and was found effective in cultivating the soil and eliminating weeds between rows. However, the cultivator needs wider spacing, 60-80cm. 4 reaper binders/harvesters were evaluated in collaboration with Ministry of Agriculture. However, cutting and binding was not satisfactory.



Figure 1 Yields of mechanized row planted sesame under investor farmers' fields

Integrated pest management (IPM)

Pest management is the major topic in the GAP training. Experts and DAs passed through the ToT cascade the knowledge and skill to farmers. Zone, regional and SBN staff also technically support woreda experts, DAs and farmers during field visits.

Promotion of rotation crops

Rotation crops, cotton, soya and mung beans, sorghum, haricot bean, cowpea, sunflower were tested, demonstrated and scaled in all SBN intervention woredas for income improvement, food security and nutrition diversity and soil fertility management. Scaling activities conducted in more than 82 FTCs and on farmers' fields using sorghum (Deber, Melkam, Dekba), soya bean (Gisham, Rassa), Mung bean (Arkeb), cotton (Acala SJ2), and cow pea (Temsgen) (Table 3).

Table 3 Area covered by rotational crops in Tigray by woredas in 2018

Werda	Crop type and area (ha)						Total
	sorghum	Soya bean	Mung bean	Cotton	Sunflower	Haricot bean	
Kafta Humera	130,194	0	1,765	6,445	260	0	138,664
Wolkayt	19,997	0	17.5	797	0	0	20,812
Tsegde	37,996	362	688	1,941	0	0	40,987
Tahtay Adiyabo	24,507	0	100	0	0	0	24,607
Asgede Tsembila	14,900	0	0	0	0	71	14,971
Tselmti	15,792	21	107	387	0	0	16,307
Total	243,386	383	2,677	9,571	260	71	256,348

Scaled sesame varieties (Setit-1, 2 and 3; Humera-1, GARC-1 and GARC-2; Gonder-1 and 2; Abasena) yield ranged from 3 to 10qt/ha. Sorghum varieties (Melkam, Dekba, Deber) performing well (Figure 2). Cotton (Akala SJ₂) was scaled on investor and small holder farmers' fields and yields varied from 10qt/ha to 28q/ha. Soya bean is expanding fast in Amhara. Varieties Gisham (Figure 3) and Rassa were scaled at Kafta Humera, Wolkayt, Asegd Tsimbela, Tahitay Adeyabo and Tsegdea woredas in Tigray and Quara, Metema, Tegede and Tach Armachiho woredas in Amhara. Yield ranged from 5.6qt/ha in Jawi to 30qt/ha at Midreget (Figure 3). In the mung bean scaling variety Arekeb gave 25q/ha at Belesa and 15q/ha at Mierab Armachiho. There is a huge potential to expand production of the rotational crops either for food security and dietary diversity improvement; income improvement; value addition, animal feed and for export markets.

**Figure 2** Sorghum variety Deber under FTC and farmer fields, 2018

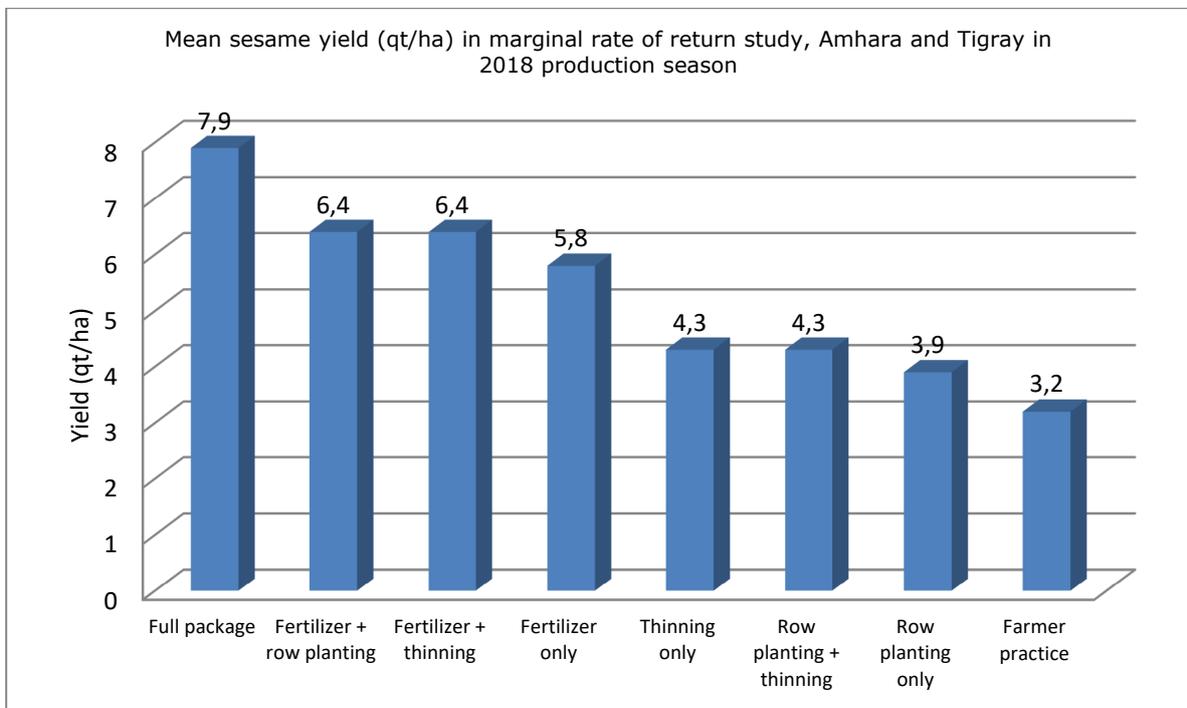


Figure 3 Field performance of soya bean variety Gisham on farmers' field, 2018

Home gardens for household nutrition improvement

According to WHO a family should be fed a day on at least six food groups, but in the sesame and cereal dominated north west 95% of households consume <3 food groups, which is very low in food diversity. Home garden was piloted in Mender 6-7-8, and Dansha to create awareness on the importance of nutrition and improve knowledge base of farming households on the need of eating on more diversified food. Onion, pepper, tomato, lettuce, local/leafy cabbage, Jirjir, okra, Swiss chard were tested for adaptability and yield. The dry season established plots were severely attacked by insects, domestic and wild animals. Main season piloting was successful and many householders had harvest. The lesson was the need to select appropriate time for planting among others.

Support to organic farming

SBN is working in close collaboration with organic sesame sourcing companies: with Selet hulling through the sesame open project; Tsehay union and Dipasa on training of farmers and their staff. Training was provided to Tsehay union staff and organic sesame producing farmers drawn from Selet hulling contracted kebeles in Kafta Humera and Belesa woreda. Technical support was also provided to farmers and cooperatives during crop growth and development.

Marginal rate of yield (MRY) and Marginal Rate of Return (MRR)

The marginal rate of yield perspective is technical, while the marginal rate of return is economic. The MRY and MRR study was designed to determine the contributions of different components of the sesame package to yield increase and to assess if the extra costs lead to extra profit. A combinations of fertilizer application, row planting and thinning was tested at 34 sites in FTCs and on farmers' fields. Eight treatments 1) full package (row sown, thinned, fertilizer applied), 2) package without fertilizer (applied row sowing and thinning); 3) without row planting (broadcasted, but fertilizer applied and thinned); 4) package without thinning; 5) fertilizer applied, but broadcast sown and not thinned) 6) package without thinning (row sown and fertilizer applied); 7) only thinning (no fertilizer and broadcast sown; and 8) farmers practice (broadcast sowing, no fertilizer and no thinning) were compared on 1/2ha plots. Significant yield difference (4.7qt) was observed among the full package (7.9qt/ha) and the farmers' practice 3.2qt/ha). On average sesame yield increased by 145% when grown under full package. Applying fertilizer increased yield by 2.6qt/ha, while row planting alone contributed to 0.7qt/ha seed increment. The contribution of thinning to yield increment was 1.1qt/ha. Therefore, fertilizer, row planting and thinning are detrimental factors in sesame production (Figure 4).

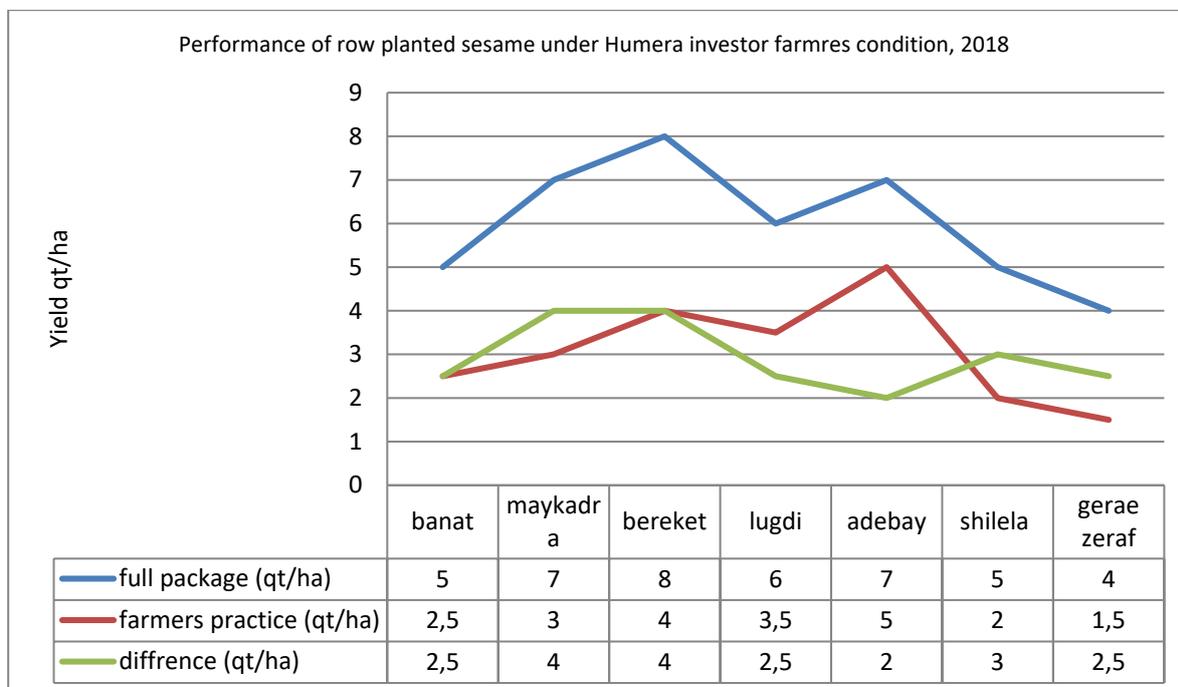


Figure 4 Mean sesame yield (qt/ha) in marginal rate of return study

Average production cost varied from 12,598 to 8,152 birr/ha for the full package and the farmer practice, respectively. The highest net profit (19,586 birr) was recorded for the full package and the lowest (4,967 birr) for the farmer practice (Table 4). With sesame seed price of 4,100 birr/qt, the cost that offset the additional cost incurred due to use of each treatment is very small. For example, row planting on average costs farmers 1,102 birr per ha. Applying fertilizer (100kg DAP and 50kg Urea/ha) costs 2,546 birr per ha, while thinning cost is 554 birr/ha. To cover the costs of row planting a farmer has to produce additionally only 27kg/ha. Similarly, to cover the costs of fertilizer 62kg and for the thinning cost 14kg seed. The marginal yield required to cover the whole production costs of the full package is 3.1qt/ha (Table 4). The highest (477) marginal rate of return was recorded for the thinning practice followed by the full package (428) and fertilizer application combined with thinning (416) (Table 4). Farmers applying the full package produce 1qt sesame seed by 1,604 birr, while the conventional practice consumed 2,547 birr per quintal.

Table 4 Treatment effect on yield and net profit under MRR study

Treatment	Yield (quintal/ha)		Production cost (Birr)		Revenue (Birr)		MRR ($\Delta I/\Delta C \times 100$)	% cost reduction
	Average	Marginal	Total	Per quintal	Gross	Net (profit)		
Full package	7.9	3.1	12,598.73	1,604.93	32,185	19,586.27	428.81	45.4
Fertilizer + row planting	6.4	2.9	12,010.73	1,876.68	26,240	14,229.27	340.07	30.3
Fertilizer + thinning	6.4	2.4	11,251.74	1,771.93	26,035	14,783.26	416.74	35.9
Fertilizer only	5.8	2.6	11,502.26	2,000.39	23,575	12,072.74	312.13	24.0
Thinning only	4.3	2.2	9,054.42	2,130.45	17,425	8,370.58	477.43	17.9
Row planting + thinning	4.3	2.5	9,289.63	2,185.80	17,425	8,135.37	378.66	15.3
Row planting only	3.9	2.6	9,270.35	2,377.01	15,990	6,719.65	256.79	6.9
Farmer practice	3.2	2.0	8,152.72	2,547.72	13,120	4,967.28	0.00	0.0

Note: the marginal yield indicated in the table is for the total production cost of each treatment

Harvest, transport and storage loss reduction

Harvest loss reduction

In sesame post-harvest losses takes the lion share (30%) and the highest loss is during drying and threshing. Research results revealed that 13% losses occur, mainly at field level. To reduce field level loss different technologies were recommended, including keeping eye on maturity and timely harvesting; hilla stacking on plastic sheets using different geometry; gathering hillas to central drying spot and threshing on plastic sheets close to the drying point. However, take-up of plastic sheets for hilla staking is not encouraging, but other recommendations are well taken and improving from time to time. In 2018 crop season farmers' practice (hilla stacking all over the field) (Figure 5) and transporting dry sesame to the threshing areas was evaluated with stacking hillas considering wind direction. The study recorded a loss of 75kg/ha under farmers' practice. A considerable number of farmers' started putting large hillas together in the same places. This saved the losses, reduced wind damage; helped to monitor the hillas easily and shortened threshing time. In general, hillas stacked in one big drying site takes less time to dry and thresh; loss is reduced to 15kg/ha.



Figure 5 Sesame hilla stacking practices (left farmers' and right, SBN recommended)

Transport and storage loss reduction

To minimize post-harvest losses and maintain the quality of the stored products under different storage conditions, hermetic bags (PICS) was evaluated against the traditional, polypropylene bags. Results were communicated to user through various SBN channels. Despite its importance and positive cost-benefit ratio, it is remarkable that the adoption of PICS bags is still very limited.

Formal Financial Services and Input Credit to Farmers

Farmers' financial literacy

Cash flow recording and cost-benefit analysis helped producers to manage their farm, expenditures and loans. However, financial institutions regard loans to farmers as risky, since most lack records and have limited financial management capacity. In collaboration with unions, PC's and woreda CPO's, SBN is addressing these challenges by strengthening farmers' financial management capacity and records. As part of its endeavour about 7,791 farmers record costs and make cost benefit analysis. The credit, provided by CBO, Abay and Lion banks to Unions, and via Unions to cooperatives, is also used for solving the input credit problem. As a result, about 5,585 farmers benefitted from internal on-lending.

Coordinated action for access to finance at kebele level. for availing input credit to famers willing to apply 20 steps, a committee drawn from woreda offices of agriculture, microfinance institutions, kebele administration and cooperatives was formed in two kebeles per woreda. Detailed plan for each kebele was prepared, tested and shared to ACSI/DCSI. However, getting buy-in from respective bureaus, specifically from ACSI/DCSI took long time. Thus, it will be implemented in 2019.

Financial actions at cooperative and union level. SBN and Agritera facilitated marketing credit for 3 unions from CBO, Abay and Lion banks. The loan was intended for input and output financing of cooperatives. Both projects deposited 10.3 million ETB guarantee and the banks provided 30.5 million ETB marketing credit to Setit, Metema and Dansha unions and Godebie PC from Selam union. The loan was distributed to 22 coops. It helped PCs to buy more seed and stay in spot market longer. Due to the facilitated loan membership and share sales increased; and improved saving and union/coop relationship. A good example is the Selam Union case where it mobilized 1.2 million birr from member contributions to purchase transformer and operationalize the cleaning machine.

Embedded services companies

Organic sesame sourcing contract arrangements were entered between Selet Hulling and 4 cooperatives; and Dipasa and the 2 cooperatives in Kafta Humera woreda, Tigray region. Continued efforts were made to link sesame producers with more processing companies for improved traceability, market transparency and input credit support and technology use, but couldn't yield in fruitful results.

Collaboration with MFI's and Banks and financial product development. The objective was to strengthen relationship between financial institutions (FIs) and farmer organizations for improved accessibility of input credit and output marketing finance. Intensive collaboration with banks is realized by the provision of marketing credit. MFI's will be supported through the selection of creditworthy dedicated sesame farmers through the kebele agro economic planning. Recently MFIs (ACSI) expressed its interest to collaborate on the exploration of possible applications of a loan product to unions and recognized the importance of kebele plan as major criteria for providing loan to famers.

Mainstreaming social inclusion and nutrition

Gender mainstreaming and social inclusion (labour and nutrition) became an integral part of the SBN program activities. Trainings on good agricultural practices; specifically, were organized for women and youth in separate sessions. Through the different trainings more youth and women reached. In gender, nutrition, home garden, weather forecasting, and financial literacy trainings efforts were made to represent youth and women. Awareness creation events organized on labour rights and responsibilities, health and nutrition at Dansha, Mycadra, Metema and Abrahajira for more than 3,000 labourers. In the financial literacy training 1,004 were female; 351 are young women while 2011 are male youth. Among the beneficiaries of the guarantee fund 22.5% were female farmers. Many women are interested in soya and mung beans, especially as crops for sale. Labourers are engine for sesame production, but do not get enough health services; live and work under poor conditions and feed on non-nutritious foods. This needs strategic discussion at higher level.

Conclusions and recommendations

Achievements

- The 20 steps roll-out is mainly in the hands of BoANR at region, zone, woreda and kebele level, and the package is increasingly owned by farmers and cooperatives.
- Farmers applied 20 steps doubled yields even under stressed conditions and harvested high quality seed.
- ToT delivered to 1,134 experts and cascaded to 162,545 farmers, '20 steps' was scaled out on 89,112 small scale farmer plots and 25 investor farmers' fields.
- Weather forecast information provided to 3,060 farmers, DAs, experts researchers through SMS and farmers' used it for field operations decisions.
- MRR study allowed to differentiate practices that optimize sesame yield (145%) and returns.
- Soya bean production increased in number of farmers involved and area covered.
- Very promising results concerning farmers' access to input finance. Internal on-lending of marketing credit helped financing the last stages of sesame production 5,585 farmers reached, with significant reduction of credit costs, from 100-240% to 20% on maximum.
- Farmer financial literacy training and record keeping reached the targeted 10% of the 150,000HH.
- Two new sesame varieties released by GARC and HuARC. Nine row planters and 5 harvesters purchased by investors in Kafta Humera woreda. Adoption of large hilla sites is increasing very fast.

Challenges, opportunities and lessons learnt

Adoption levels of GAP for sesame production is still below expectation; because of lack of row planters and input finance. The major lesson learnt is that applying the full package double yield even under stress conditions. Challenges are uneven distribution of rainfall, high insect pest and diseases pressure; low fertilizer use by investor farmers and partial adoption of the package. The strategic challenges that need policy decisions are elaborated in Table 3. The financial literacy has huge opportunities to develop professionalism of farmers, financial institutions and public services to improve cooperative financial management and loan documentation; assessment of members' creditworthiness, and to enhance commitment of farmers and cooperatives to loan repayment. Concerning loan provision, it is already learned from previous years' experience that dedicated efforts and communication develops trust between farmers, cooperatives and financial institutions. A key challenge is the repayment of outstanding loans, which is more likely now that the sesame harvest and market price are better than in the preceding years. Financial institutions show enthusiasm to consider cash book recording data for assessing farmers' eligibility to loans. Regional and national policy discussions are needed to further explore the opportunity to align the cash books to criteria of banks and MFIs (Table 3).

Way forward

- To improve the adoption of good agricultural practices, the focus will be on offering technically and economically interesting options for row planting and soil fertility management.
- Specific attention will be given to the training and monitoring of local groups of farmers (local cluster approach). Farmers collaborating in local farmer groups (part of coops, at sub-kebele level) are offering perspectives for improving smallholder access to machinery and credit.
- SBN activities to support coordinated action planning at kebele level between committees, cooperatives and micro finance institutions can further stimulate collaboration to achieve the ambitions.
- The financial literacy training will be further expanded, with attention for high level buy-in and support (institutionalisation) and retaining the already trained farmers for support roles adding family members and strengthening collaboration through shared responsibilities.
- Marketing credit used for the final production season, will be strongly supported.
- SBN will support campaigns to promote loan repayment and saving mobilization, to create conditions for higher interest of financial institutions to invest in sesame sector.
- The introduction of digital administration tools for farmer registration and data collection can also improve planning and information exchange between stakeholders.

Strategic issues to be addressed to reduce sesame production cost

Strategic issue: Social inclusion	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • > 300,000 labourers migrate at peak time including students to earn money for school fees; • most labourers come from PNSP woredas; • Sensitization of labourers and employers • Specific attention given for training women and youth, both technical and financial training • Interest on rotation crops, home garden and nutrition • Involvement of women and social affairs offices 	<ul style="list-style-type: none"> • Poor conditions of labourers and poor involvement of social affairs offices in solving the problem • Specific constraints for female and young farmers in production • Under-representation of women and youth from most benefits • Non-diversified diet in sesame sector
Strategic issue: performance of investor farmers	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • Investors, are small in number, but provide a large part of the national production • Quite some investors are professionalizing and invest in 20 steps and machinery • Provide employment to thousands of labourers • Emergence and development of investor farmer organisations 	<ul style="list-style-type: none"> • Performance of investors is lower than that of small farmers • Credit often not used for the intended purpose • Actually, a lot of land is somehow wasted because it could have yielded so much more • Labour conditions are often poor, among others the food and water they have

Strategic issue: Machinery and mechanization

Positive elements and trends	Critical issues
<ul style="list-style-type: none">• Lowlands very suited for mechanization• Many options for mechanization identified (row planters, cultivators, harvesters)• Some first investments in mechanization• Cluster farming offers perspectives for smallholders collaborating for mechanization• Instrument for capital good financing (lease financing) exists (KAZA)• Farmer service centres exist• Strong demand for machinery rental services• Tax exemption for agricultural machinery	<ul style="list-style-type: none">• Current mechanization rate far below what is needed – ‘demonstrations not followed by purchase’• Less options for small farmers• Dependency syndrome (receiving machinery for free or subsidized)• Limited or no after-sales services and lack of spare parts• Limited experience with machinery rental services• KAZA instrument not used up to potential• Cooperatives have not (yet) benefitted from tax exemption for agricultural machinery

Strategic issue: Input credit for production improvement

Positive elements and trends	Critical issues
<ul style="list-style-type: none">• Rate of return is high,• DECSI and ACSI are ready to finance the 2019 agricultural season,• Production costs for major parameters and loans per hectare defined;• Voucher system should be in place	<ul style="list-style-type: none">• Farmers and MFIs are risk averse and see each other as ‘enemies’ (one will lose),• Saving and reimbursement culture of farmers needs to improve;• Limited savings after good years• Limited loan restructuring after bad years

Strategic issue: Farmers’ literacy and savings

Positive elements and trends	Critical issues
<ul style="list-style-type: none">• 15,000 farmers trained (>10%), women and children also involved,• CPO on top as focal persons in all woredas;• Around 100 cooperatives reached with high cooperative staff involvement,• ToT system in place, within cooperative farmer-to-farmer coaching,• Banks and MFI’s showed high interest,• Option to train development professionals or to integrate it in school programmes	<ul style="list-style-type: none">• Intensive programme that require resource to cover costs of guide, cost record book printing and training;• Limits of SBN reached, but still so many farmers to be trained (90%)• Farmers need technical support during recording and cost calculating.

Improved markets and trade

In SBN we target the following primary outcome for contributing to improved markets and trade: "Sesame farmers and SME's involved in product and market development initiatives fetch a 10% higher price, as compared to spot market and ECX prices (cost-benefit ratio for farmers and SME's)". Three, related intermediate outcomes, each with specific KPI's, are expected to contribute to the achievement of the primary outcome: (2.1) Post-harvest value creation (3 indicators); (2.2) Improved market linkages and sales (4 indicators) and (2.3) Improved access to marketing credit (1 indicator).

Product and market development

Post-harvest value creation

Business case development. The high domestic price of sesame and the limited use of sesame in Ethiopia are two important factors explaining why value addition is virtually impossible in the current context. In 2018, an inventory was made of some of the most promising business cases, for which key information was summarized in a business case template and profiles of the entrepreneurs were made. This is input for tailor-made business case development training. Two cases related to cleaning are further developed below.

Store management. Required interventions for the improving storage were assessed. Based on identified knowledge gaps, preparations for a store management training started, in collaboration with ECX and trade offices. Also, an in depth research on warehouse receipts systems was done to investigate the options for possible future interventions.

Cleaning and sorting. Based on demonstrations in 2017, Miebale cooperative showed interest in purchasing of a locally developed cleaning machine. Final improvements and safety measures were applied to prepare the machine for delivery. A purchase agreement, specifying training and maintenance services, was signed by the cooperative and the entrepreneur (Ayana). SBN is monitoring the performance of the cleaning machine (output, profitability).

Selam union is one of the four unions owning a modern cleaning machine. However, the machine was idle for the last five years due to lack of power source. Along with road construction, Selam got access to the power grid, but did not have a transformer to solve power connection problems. SBN challenged the Union to mobilize capital from the members for the required investment. When the union successfully fulfilled the resource mobilization condition (1.2 million birr mobilized, SBN released 300,000 birr for hiring technicians. The new cleaning machine operator was trained by Tsehay union. Next to supporting the initiative financially, the most important contribution of SBN was sharing knowledge on the capitalization method and on effective member relationship strengthening techniques.

Oil extraction. There are some initiatives for oil extraction; SBN assessed the profitability of small businesses and investigated options for technology and market product development. Continuous support to reduce costs and stimulate local demand is needed.

Product development (sesame and rotation crops). With limited local consumption of sesame, product development focused on rotation crops. Households involved in the home garden pilot received a training on recipe development for sorghum, mung and soya beans. As the pilot also included several vegetables, their preparation and the different options to use them as ingredients were shared.

Local consumption and nutrition improvement. The home garden pilot stimulated the production of diversified and nutritious crops such as leafy vegetables, okra, onion, tomato and others. As the products were mainly used for home consumption they contributed to more variety in the diet.

Improved market linkage and sales

In 2018, the ECX sesame price was high, much better than in previous years, and continued to increase during the marketing season. At short notice, farmers are benefitting from this development. The ECX established a market price information system based on SMS and IVR messages. SBN's efforts on collecting and sharing spot market price information was stalled. The international market information obtained during EPOSPEA's 8th international conference on oilseeds and pulses, have been shared with stakeholders in regional meetings.

Cooperative spot market trade. Finance is the major factor limiting coops' spot market participation and their business performance. As marketing finance is limited and the competition is fierce with traders, cooperatives are only shortly active at the spot market and only buy small quantities of sesame and rotation crops. Studies show that farmer organizations participate in less than 5% of the sesame transactions. Traders in the spot markets, knowing the cash status of coops, collude and purposively offer high prices to expel coops quickly. Cooperatives thus need continuous support from financial institutions, CPA and development partners for improving their financial capacity.

Direct marketing of unions and investors. In the national marketing policy, unions and investor farmers have the privilege to process, pack, brand and export sesame. Unions used to have the intention to aggregate sesame for direct export, but experience has shown that it may easily result in a loss for unions. Most sell to exporters via ECX, due to the higher price in the local market. Direct export of unions can only be sufficiently interesting if there would be a level playing field and Unions could import as well (like exporting companies). Few investor farmers directly export their produce. Thus, for both unions and cooperatives the focus remains on domestic marketing, which is understandable as long as ECX prices exceed international market prices.

Sourcing of processing companies. Selet-Hulling and Dipasa companies and Tsehay union are the only three enterprises that source sesame from farmers through cooperatives according to pre-signed contractual arrangements. Selet Hulling and Dipasa are sourcing from six cooperatives in Tigray (Kafta Humera woreda), while Tsehay union is sourcing from all cooperatives in Belesa woreda. Efforts were made to link more sourcing companies with sesame producers. This was without success, mainly because of the high sesame price at ECX markets.

Branding. Sesame branding is well taken up by ATA. A company was selected for establishing the different brands and the project is awarded. SBN participated in the launching and questionnaire validation workshops and contributed its share.

Marketing rotation crops. Marketing the rotation crops of NW Ethiopia is a challenge, because there is no well-developed system. The market linkage created by SBN and 2scale for malt sorghum in 2016 with Diageo has frozen, because of unions' default as a result of high sorghum price at local markets. Marketing of grain sorghum is currently not a challenge as the government and many NGOs source sorghum for food security interventions. Establishing ECX trade in soya and mung beans may solve the challenges related to these pulses. Marketing of cotton of NW Ethiopia is very challenging. SBN and partners will look for cotton sourcing companies.

Improved access to marketing credit

Output marketing credit for cooperatives and unions. The guarantee scheme was designed mainly to address the financial challenges of unions and coops in sesame marketing. After two successful years with the Cooperative Bank of Oromia (CBO) providing marketing credit based on a guarantee fund, two more banks (Abay and Lion) joined the initiative in 2018. Together, Agriterria and SBN placed a guarantee fund of 10.3 million ETB at CBO, Abay and Lion Banks, as encouragement and risk sharing for providing marketing credit to cooperatives. The three banks provided loans to 22 cooperatives up to a loan value of 30.5 million ETB. Loan provision was mainly via Setit, Metema and Dansha unions (21 cooperatives). There was one case of direct link between the bank and a cooperative (Sanja cooperative). The overall proportion of risk taking increased from 50:50% (Bank:SBN) in 2016 to 67% by the banks in 2018. The continued capacity building services of SBN (in collaboration with F&S Ethiopia) and the zero default in the two previous years increased interest of banks and micro finance institutions to engage in the guarantee scheme. To accompany this activity, a

three-day loan management training was given to 100 members of newly selected cooperatives to strengthen their documentation and capacities to fulfil eligibility criteria. Former trainees also joined for one day for refreshment and for experience sharing. With the help of F&S, follow-up support to the cooperatives was organized to ensure proper loan disbursement and repayment. Perspectives for full loan repayment are again good for the 2018-19 season.

The advantages of the marketing credit are many. Its first objective is to strengthen the collective marketing activities of cooperatives and unions, and to increase their presence at spot markets. In the second part of the production season, cooperatives provided internal loans to 5,585 farmers who used it for weeding and harvesting costs, leading to significant lower interest rates (from 100% to 18-20%) and a reduced dependency on informal money lenders. Farmers repay the credit in kind, thus selling sesame to the cooperative. This is bonding members to the cooperative. Unions are also able to significantly increase their marketing activities. For banks, an important benefit, besides the interest earned, is the opening of new bank accounts (400 farmers) and the mobilization of farmer savings (141,000 Amhara only). Cooperatives raised internal capital by selling additional new shares (2448 shares for amount of 104,060 ETB). Banks, farmers, cooperatives and unions get to know each other better, farmers do understand finance better, and banks understand sesame production and marketing better. Several banks, certainly attracted by the guarantee fund modality, have expressed interest to provide loans to cooperatives. This is an interesting development as most often banks are not at all interested in financing SH farmer cooperatives.

Mainstreaming social inclusion and nutrition

Social inclusion is an important consideration in relation to the newly demonstrated cleaning machines as it interferes with currently provided manual cleaning services, mainly by young labourers. To ensure inclusive market growth, specific attention must be given to the opportunities for these labourers to run the machine together and increase their income per hour through efficiency and quality improvements. Attention will be given to training more women on recipe development (local value addition) and scaling of products from rotational and home garden crops in collaboration with women groups in Sanja, Metema and Dansha. 22.5% of the more than 5000 farmers benefitting from on-lending of marketing credit were women. This is encouraging as it is commensurate with the proportion of female membership.

Conclusions and recommendations

Achievements

The main achievements are: the internal mobilization of 1.2 million ETB allowing Selam Union to purchase a transformer needed to operate the cleaning machine; the business linkage between Miebale cooperative and Ayana company and the 30.5 million marketing credit granted to 22 cooperatives of 3 unions and one PC from the 4th union, which led to strongly improved cooperative marketing. Through internal on-lending, around 5,585 farmers, of which 22.5% women, received input credit which they paid back with sesame delivered to their cooperative, thereby improving farmer-coop relationship and built trust.

Challenges, opportunities and lessons learnt

The challenges, opportunities and lessons learnt of previous years still largely apply. The domestic market (ECX) price is inflated because of the fierce competition of exporters to earn foreign currency. Local sesame is expensive for product development for both local and/or international markets. Secondly, the current trading and benefit sharing system does not encourage value chain operators to collaborate and invest with the aim to offer traceable quality products to the market. As a result, Ethiopia is weakening its competitive position in the world market. Discussion and decision making at high level is necessary to break out of the current deadlock situation and to embark on real collaboration for developing value chains that connect producers to consumers. Economic reforms should create new opportunities for both sesame trading and value adding activities. Considering product and market development the main strategic challenges that need policy decisions are: Financing cooperative marketing credit; the promotion of cooperatives as business organisations and Value chain development (linking producers and consumers, who most of the time do not know each

other now). For these strategic issues, positive elements and trends and critical issues were developed, see below.

Way forward

To improve product and market development in the sesame sector, additional efforts will be made to support policy reforms that enable value chain development and a traceable marketing system. A sesame sector information system (see next chapter) may support direct sourcing and the diversification and traceability of Ethiopian sesame products. To sustain the guarantee fund success, efforts will be made to consolidate the activities and to engage even more with the actors involved. The aim is to further scale the guarantee fund programme with reduced risk coverage, based upon the lessons learnt from the 2018 disbursement and repayment rates. Supporting unions and PCs in loan management and internal capitalization remain priorities. In 2019 SBN will put more emphasis on the cooperative business development: (i) continued strengthening of cooperatives to source seeds from their members through the facilitated marketing credit; (ii) technically support cooperatives in their economic activities (storage, cleaning, machinery rental services); (iii) improving saving habits of farmers and internal resource mobilization; (iv) linking-up the financial literacy trainings, local agro-economic planning and guarantee fund activities to farmers' organisations (cooperatives, Unions and SACCO's) for sustainability and (v) further strengthen collaboration and trust between farmers and farmer organizations (FO's) and FIs (banks and MFI's). Other activities are:

- Collaboration with RCPA and Unions: organization of SaCCOs/RuSACCOs, timely performance evaluation and financial auditing of cooperatives and share with relevant stakeholders.
- Celebrating cooperative day at woreda level and organizing thematic meeting and experience sharing events to good performing kebeles.
- Organise thematic meetings to review the import and export process including license and regulations for relevant higher-level officials.

Strategic issue to be addressed to improve product and market development

Strategic issue : Financing cooperative marketing credit	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • Third year of experience with guarantee fund supported marketing • Cooperative on-lending covers last steps of production season, making farmers independent from IML • Farmers deliver to cooperative, cooperative present at spot market • Many positive side effects, for farmers, cooperatives and banks 	<ul style="list-style-type: none"> • Guarantee fund provided by external parties • Limited number of Unions and cooperatives can be reached • Operational work still largely done by SBN, instead of banks • Risk that banks discontinue if guarantee fund ends

Strategic issue : Cooperative business organisations	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • There are quite some strong cooperatives, membership on the rise for performing cooperatives • Professional staff increasingly hired • Involvement in financial literacy training and marketing • Cooperatives officially defined as farmer-managed enterprises • Specialized agency for supporting cooperatives • Cooperative training modules 	<ul style="list-style-type: none"> • Most cooperatives are weak with limited own capital, weak leadership and management and limited services to members • Cooperatives not perceived as enterprises

Strategic issue: Value chain development

Positive elements and trends

- Promising trends for organic sesame value chain development, which require traceability
- Market interest in Ethiopian sesame (bakery industry, tahini, oil)
- Some grading at ECX
- Some investments for: cleaning, storage, oil extraction, sesame as ingredient for domestic agrifood industry

Critical issues

- Bulk export is >98% of sesame business, no links between producers, processors, traders and consumers
 - Domestic (ECX) price is inflated (too high) as compared to international market price
 - Quality and food safety issues
 - No traceable batches through ECX
 - High value markets not reached because of price, quality, food safety
-

Improved enabling environment

SBN targets the following primary outcome for contributing to an improved enabling environment for the agricultural sector: "The Ethiopian sesame sector enhances its performance as a result of a more enabling environment". Four, related intermediate outcomes, each with specific KPI's, are expected to contribute to the achievement of this primary outcome: (3.1) Evidence-based information gathering and sharing; (3.2) Stakeholder capacity development; (3.3) Enhanced stakeholder collaboration and (3.4) Strategic sesame sector innovation.

Strengthened enabling environment for the Ethiopian sesame sector

Evidence-based information gathering and sharing

Stakeholder databases. Finding appropriate and timely data is one of the challenges in the sesame sector. Often information is either incomplete, out-of-date or inconsistent and unreliable. To improve the situation, basic data on population, households, land use, market prices, weather and several other subjects have been collected and shared with stakeholders through different channels. For the development of woreda databases, computers were purchased for the 12 woredas. Staff from WoA and WCPOs (26) were trained on basic concepts of monitoring and evaluation, data collection methods and tools, geo-data collection using GPS and data archiving, data recording, processing and sharing. Technical support was provided to enable stakeholders to establish and maintain their database system.

Market information. SBN continued to gather local, national and international sesame market information from different sources (websites, blogs, ECX market, Ethio-export platform, EPOSPEA conference information) and shared the information to stakeholders. During the marketing season, information on market developments and access to input and output credit were broadcasted in the 'White Gold' radio programmes and shared through social media. The planned extension of spot market price information dissemination activity to 30 spot markets was stalled because of mandate and license issues.

Training and extension materials. The use of multiple extension and communication materials (training modules, production guides, posters and banners, brochures radio programmes, short movies and documentary) contributed to increase farmers' awareness, knowledge and skills related to improved practices. To foster farmers' adoption of GAP, attractive and easy to understand extension materials were produced and disseminated to farmers and professionals.

Stakeholder capacity development

ARC staff training. One HuARC and one GARC staff member are being supported for their PhD programme. Several MA students have been supported on their studies.

Agronomic training. SBN organised a number of training sessions to improve knowledge base and skill of farmers that contribute to increased productivity and quality of sesame. Applied a cascaded approach at three levels. First, about 50 master trainers convened from Zone and Woreda Agriculture Offices, were trained on quality sesame seed production, pest and disease management, and on the set-up and management of the MRY plots, in collaboration with regional BoAs, GARC, HuARC and ATA. Nearly 1,185 DAs and agricultural experts, of which 384 women, were trained as trainers who in turn trained 162,545 farmers at kebele level on improved sesame and rotation crops production package. Of the trained farmers, 31% were women and 29% were young farmers. At the national level, 977 professionals (of which 140 women) were trained on updated national oil seed crops packages- sesame and sunflower in partnership with MoA in Adama. This training allowed to contribute to the areas in which SBN does not have a direct reach. What is more, specific training sessions were organized for 62 sesame seed producer farmers on quality sesame seed production and management, post-harvest handling techniques and seed marketing. Some selected DA's were also trained on the set-up and management of the MRY plots.

Training on nutrition. To promote nutrition sensitive agriculture, SBN organised training for 38 professionals of which 9 were women. The training helped participants raise their awareness on nutrition sensitive agriculture, on good nutrition and what to do improve the current poor nutrition status.

Training on home gardening. SBN, in collaboration with Woreda Offices of Agriculture, piloted home gardening in 48 farmers' gardens in Metema and Tsegede woredas. 48 farmers (19 women) were trained on home gardening in two pilot kebeles. The training sessions, the home garden field days, and the recipe demonstration (in which 50 people participated) helped to raise farmers' awareness on the importance of growing and consuming vegetables and fruits. The activities also equipped farmers and their families with the knowledge and skills on selected vegetable crops production and consumption.

Weather forecasting training. To support farmers to make informed agronomic decisions during the production season, weather information was provided to sesame farmers. In partnership with NMA, first 112 professionals (33 female) were trained as trainers on weather forecasting, who trained 3,060 farmers. Trained farmers have been receiving weather forecast information via their cell phone.

Field days and farmers exchange visits. The organisation of field days is one of the methods used to change farmers' attitude, to create and raise awareness and develop knowledge and skills about good agricultural practices. Several field days were organised during the production season at different growth stages of sesame and rotation crops. Nearly 50,000 farmers were reached via field days, of which 15% were women and 20% were young farmers. 820 DAs and agricultural experts (239 women) participated in different field days, organised at kebele and woreda levels. Field days helped farmers to have both formal and informal interactions with professionals and other fellow farmers on their experiences and therefore play an important role in the adoption of improved technologies. Region and zone level field days were organized in collaboration with Amhara region BoA, GARC and ATA in Amhara and Tigray region BoA, HuARC, ISSD and CASCAPE in Tigray. The visits focused on mechanization, rotation crops, cultivators, seed production and pest management. The visible progress in the area of mechanization was highly admired by the higher officials.

Economic training. 2018 was the third subsequent year of financial literacy training for farmers. In 2018, it covered all 13 woredas, and involved 10 unions and 98 primary cooperatives. Before running this year's programmes, the lessons of 2017 were capitalized during meetings and discussions with trained farmers, trainers (ToTs), focal persons from CPOs, cooperative and union management members and other stakeholders such as Woreda CPOs, MFIs and WoA. Cost recording manuals and cost recording books were improved and 16,300 manuals and 25,200 farm cash recording books were published in Amharic and Tigrigna languages and distributed to trainees. To promote farm cost recording and calculations, 200 posters were published and distributed to cooperatives. A total of 235 individuals attended the training of trainers sessions. Trained trainers went to their cooperatives and trained nearly 7,800 farmers. Of this number 13% were women and 30% were young farmers. Additionally, several farmer-to-farmer sessions were organised.

Cooperative capacity development. Based on the action points set after the evaluation of the 2017 pilot training, Ardaita TVET, FCPA, GIZ, F&S and SBN organised training sessions for sesame cooperatives together. The training was organised for 83 participants (24 women) on cooperative marketing and accounting. Gender mainstreaming was also touched upon during the training. Participants were from 24 different PCs (11 from Amhara and 13 from Tigray). This training brought different stakeholders on board, including FCA and RCPA, which was relatively difficult earlier. Accordingly, a mixed team of professionals (3 Ardaita, 5 FCA, 2 Tigray RCPA, 1 Amhara RCPA, 1 GIZ, 1 F&S and 3 SBN) facilitated the training.

Loan management training/Guarantee fund. For the successful extension of the guarantee fund supported marketing credit to three unions and 22 cooperatives, 100 staff members of the cooperatives and unions were trained on loan management and the handling of on-lending to members. The training program covered all steps from loan application, screening, disbursement up to repayment practices. Internal capital mobilization and promotion of saving culture were also part of

the training. Trainees of previous years, from banks, cooperatives and unions, shared their experiences, emphasizing the challenges and success stories. Banks shared the loan application procedures for participating cooperatives and unions.

Enhanced stakeholder interaction and collaboration

SBN used a two approaches for promoting stakeholder interaction and collaboration. The first approach is direct collaboration with specific organisations for example, BoA for scaling out GAP, Agriterra for output marketing or guarantee fund, cooperatives, unions and CPO for rolling out financial literacy and F&S for loan management training, Ardaita TVET, FCPA, RCPAs, GIZ and F&S for cooperative capacity development, Selet Hulling for organic farming etc. The second approach is the organisation of multi-stakeholder meetings and field days at different levels for information sharing and discussing the challenges to be addressed.

Kebele planning. To solve problems related to loan repayment defaults and improve farmers creditworthiness; efforts were made to polite the agro-economic development plan at 24 kebeles in 12 woredas. Tripartite committees, composed of representatives from government (kebele administration and DA), farmers (cooperatives) and financial institutions (ACSI or DECSI) were formed, which worked out the kebeles plans. Prior to the implementation of the agro-economic planning, discussions were held with ACSI and DECSI, to get the buy-in from regional top management, that the planning, including identification of farmers eligible for input credit, would be used for the allocation of credit. In principle, ACSI responded positively and communicated the plan to the lower level employees. The kebele AE planning, which started too late, did not influence credit provision. At the Tigray side, DECSI did not avail much credit due to farmers defaulting on loans of previous years when the sesame price was low. For 2019, the planning format has been updated and the planning will start early.

Regional platform and coordination. The aim of the annual platforms is to share experiences and take lesson from the achievements; discuss on challenges and suggest possible solution and put the way forward. The annual Amhara and Tigray regional workshops were organized at the end of 2018. SBN stakeholders discussed the 2018 production and marketing activities. In both regions participants exchanged 10 major strategic issues that are holding back the sesame sector. Based on positive trends and challenges, working groups suggested possible solutions to meet these demanding challenges. Apart from the two annual regional SBN stakeholders' meetings, SBN supported the consultative and mobilization workshop in Amhara region which convened over 500 participants and the Sesame Business Forum in Tigray region in which over 300 people participated. Higher officials from the federal government including the then state minister for MoA, H.E. Dr. Eyasu Abraha, attended both meetings.

National sesame platform and thematic meetings. Platform was assumed to bring all stakeholders together to national annual meetings that discuss on sub-sector challenges, formulate policy briefs, meet with policymakers and follow until decision is made. MoA is expected to take the lead in organising national sesame platform but so far no progress has been made mainly due to the continuous position changes in the ministry. Specific thematic meetings were organized on rural finance, mechanization, institutionalization of the guarantee fund, financial literacy.

Strategic sesame sector innovation

Ten subjects for strategic sesame sector innovation were mentioned in the 2018 work plan. These are still highly relevant and are most are still high on the agenda. Strategic sesame sector development requires a lot of stamina.

Observations on 2018 strategic issues (mentioned in 2018 work plan)

Bottom-up PME system. Tool for kebele agro-economic planning again tested in 24 kebeles. Experiences show that the tool is ready to use and that trilateral collaboration between farmers/cooperatives, local branches of MFI's and kebele administration and DA's is possible. Communication with regional and woreda decision makers, in field, office and during end-of-year regional workshops. Gradual buy-in of DECSI and ACSI and regional Bureaus of Agriculture

Sesame sector financing. More marketing credit provided with same size of Guarantee Fund, with 3 participating banks instead of one. High level meetings at Bank headquarters and regional branches, and with Union leadership and management. Organisation of BENEFIT meeting on agri-finance and preparation of strategic note on Guarantee fund.

Farmers' financial literacy. Reach of close to 100 cooperatives and more than 15,000 farmers, in collaboration with Unions and Woreda cooperative offices and RCPA's. The focus is on institutionalising: communication with banks on cost recording booklet, with aim to align it to loan criteria, and integration of financial literacy in the national and regional extension system.

ECX market system. ECX related proposals are in a strategic document submitted to (former) prime minister. Subject is still pending.

Mechanization options, models and facilities. Ministry of MoA promised to facilitate tax exemption for agricultural machinery and launching mechanization centres in Metema and Humera. Lobbying should be done for the realisation of this

Fertilizer recommendations and uptake. Ongoing analysis of marginal rate of yield and return of fertilizer application and monitoring of the uptake of adapted fertilizer recommendation in Amhara. The fertilizer carry-over stock and repayment of outstanding fertilizer loans are still important issues.

Cooperative entrepreneurship. Collaboration with Aeres, F&S and GIZ for training of cooperatives in sesame zone, with focus on financial management, governance and marketing. Collaboration with Agriterra (GF) for supporting cooperative marketing. Support to business cases of Metema and Selam unions and several cooperatives.

Labour and labourers. Sensitization meetings organized in collaboration with Labour office. Analysis of effects of mechanization on youth employment. Employment in sesame zone has effect on poverty alleviation and food and nutrition security of poor labourers from highlands.

Gender and youth. More and more women and young farmers included in the various interventions. Specific training sessions were organised to women sesame farmers.

ATA collaboration. In Amhara, ATA and SBN organised stakeholders' mobilisation and consultative workshop, ToT Agronomic training and regional field days. Collaboration with ATA can be further improved, especially for addressing the strategic issues that hold back the sesame sector, collaboration with ATA is of high strategic importance.

Mainstreaming social inclusion and nutrition

The information required for preparing policy documents has been collected through the gender analysis and nutrition baselines surveys. The data will be synthesised and presented to policy makers for decision in 2019.

Conclusions and recommendations

Achievements

Most of the project activities were organised in partnership with relevant stakeholders of the sesame business network. A large number of farmers were reached via cascaded training session, field days and farmer to farmer discussion sessions. Progress has been made in changing the training facilitation skills, especially in organising financial literacy training sessions facilitators have started to employ participatory methods. More and more women and young farmers were included in the various activities. Labourers and investor farmers' awareness on the labourers' duties and responsibilities, overall working condition, their relationships, security and health related issues were improved because of the sensitisation events organised. Zone, regional/national level field days were organised in collaboration with major stakeholders- and served as learning and discussion platforms. This contributed to better organisation, cost efficiency and better results. Regional and national field days, workshops and consultative workshops/forum helped stakeholders to review their performances and discuss on major strategic challenges and come up with possible suggestions.

Challenges, opportunities and lessons learnt

The adoption of recommended agricultural practices is not reaching the expected level, because of a range of challenges, such as access to finance, availability of machinery, but also commitment and attitude of farmers. The linkages between financial organisations, woreda offices of agriculture and farmers' cooperatives are improving but still weak. Most cooperatives have limited own capital, weak leadership and management and only provide limited services to members. As a result, cooperatives are not yet perceived as enterprises. Training approaches and the organisation of field days and

workshops, though showing some changes, are still largely following top-down approaches. The programme interventions will not reach all the farmers organisations. Limited number of unions and cooperatives can be reached. Change of leadership in government offices affect the start or implementation of some activities such as organisation of national sesame platform.

For the strengthening of the enabling environment, the subjects of 'Information and communication' and the establishment of regional and national platforms are of strategic importance. For these strategic issues, positive elements and trends and critical issues were developed, see below.

Opportunities

Way forward

- Develop the woreda databases and support stakeholders in data gathering and reporting.
- Start the kebele-level agro economic planning as early as possible and extend to more kebeles.
- Continue collaborating with stakeholders and partners for efficiency, quality and better results.
- Support the change of training facilitation towards more participatory and trainee centred approaches and continue developing and printing attractive and handy extension materials.
- Institutionalize the organization of regional SBN stakeholder workshops. Form a task force from BoA, CPA or trade bureau, TAMPA, ECX, ATA, AGP and Unions at regional level.
- Lobby BoA on the role to play in establishing an ICT unit per woreda communication.
- Lobby MoA to take the lead in the organisation of national sesame platform.
- Continue to involve more women and young farmers and professionals in the various interventions. Encourage having women and youth in coop board and management positions.
- Discuss with labour and social affairs offices and other stakeholders to set reasonable wage standards and to have strict guidelines for the working and living conditions of labourers and enforce these at both sides (employers and labourers).
- Align information dissemination with religious institutions (in churches, mosques), governmental offices (i.e. schools, hospitals) and social groups (i.e. equb, edir).

Strategic issue to address to build the enabling environment for the sub-sector

Strategic issue : Information and communication	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • Studies done, basic database established • Website, newsletter, radio, films, facebook • Weather forecasting and price information via SMS – farmers willing to contribute to costs • Many ICT options – farmers increasingly have phones and are getting connected to internet • Start with digitalized sesame sector information system 	<ul style="list-style-type: none"> • Scattered information, not digitalized, not always of high level of reliability: how to arrive at a sustainable and modern information and communication system for the sesame sector? • Information and communication efforts depend quite a lot on SBN: how to sustain information and communication activities?

Strategic issue : Regional and national platform	
Positive elements and trends	Critical issues
<ul style="list-style-type: none"> • SBN planning based on stakeholder consultation and implementation is through stakeholders (collaboration agreements) • High level of ownership and responsibility of stakeholders • Communication and collaboration much improved since 2013 • Several stakeholder meetings and events per year (with still important, but decreasing role for SBN) • Informal regional sesame business networks are in place • MoA supports the establishment of national sesame business network or platform 	<ul style="list-style-type: none"> • Private sector less involved • High level management of banks and MFI's not yet sufficiently involved • Federal level organisations and agencies not sufficiently involved • Strategic challenges insufficiently addressed

Collaboration

M&E and Communication

Stakeholder-oriented PMEC system. SBN is working to have a stakeholder based planning, monitoring and evaluation system. The project database, developed in the previous years, was uploaded in desktop computers and transferred to 12 woredas. A kebele agro-economic planning tool has been developed and piloted in 2017 and 2018. Two management information systems, eProd and Farmforce, have been piloted with three woredas, three unions and four cooperatives. These activities will be further scaled out in 2019. SBN uses M&E mainly for learning and improving the support activities. Different studies, mentioned below, have been conducted.

MRY/MRR studies. Like in preceding years, analysis was made of the marginal rate of yield and marginal rate of return of agronomic practices, in order to fine-tune recommendations and to advise about best options for production and farmer income improvement, which are key indicators for success. MRY/MRR study results were shared to stakeholders during the annual regional workshops in December.

Household survey. This survey included 918 sesame growing households from 8 sesame growing woredas in the two regions (1% of total number of households). Results show that 90% of the respondents heard about 20 steps. Ten out of the 20 steps are really adopted by farmers. The adoption rate of other steps is progressing. For instance, the adoption rate of recommended varieties, fertilizer and row planting are respectively 48%, 47% and 33%. The most important barriers to adoption are the shortage of capital and bank loans and the unavailability of machinery. Risks that influence adoption include pest and diseases, climate change, market price fluctuations and labour shortages.

Nutrition baseline survey. This specific survey shows that the population's diet is based on cereals (100% of respondents), of which the dominant one is sorghum. The use of spices (pepper and onions) and pulses in the form of shiro is high (>90%). More than 95% of the population does not consume from more than 6 food groups; 37% of the households only consume from 1-3 food groups. In the sesame area there is thus a low level of dietary diversity. The continued promotion of rotation crops, scaling of home gardens and enhanced awareness of farmers and labourers on different consumption options of crops, are important to improve the household nutrition status and more diverse food intake.

Gender Survey. This survey, conducted in 6 woredas in Amhara and Tigray, informs about gender roles and responsibilities, with attention for access to extension, inputs, labour and credit, marketing, decision making and sharing of benefits. Concerning the division of labour, results show that: women do not engage in land preparation; 14% of the wives in MHH participate in weeding, whereas this is 31% in FHH; female headed households more strongly depend on hired labour and children also actively participate in field activities. Access to kebele extension services is slightly lower for FHH. Access to fertilizer, improved seeds and chemicals is also lower for FHH than for MHH. An important reason is that FHH have more difficulties getting input credit from MFIs. They have weaker social networks for group collateral and have less control over fixed assets that are necessary for collateral. In addition, they are victim of the common perception that women farmers are less productive. Agriculture related decisions are made by men, sometimes wives are consulted, sometimes they are only informed afterwards. In FHHs, women take all decisions with some participation of sons and close male relatives. In addition to the gender survey, field level stories were collected showing outputs, outcomes and impact of interventions. Five MSC Stories were filmed, produced and shown to stakeholders.

Communication. Information is shared to stakeholders, partners and the general public using different communication channels such as website, quarterly newsletter, one pagers, social media, meetings, field days, workshops and others. The extension and communication tools (production guides, posters, brochures, radio shows, short movies and others) support stakeholders' activities. Communication materials were shared both in printed and electronic copies. Sustainability of the production and distribution of communication materials is a point of concern and attention. SBN

believes that the communication materials and channels are needed in the years to come. Regional and national stakeholder platforms would need to decide how to continue. A levy system might be a modality to sustain extension and communication activities. This will be explored with stakeholders.

Collaboration

Collaboration with BENEFIT programmes

SBN collaborates with ISSD and CASCAPE to improve the productivity of sesame and sorghum. The joint planning and implementation helped to avoid resource duplication; create synergy by utilizing the expertise of sister projects. Among the major activities conducted are the following:

- MSC stories were produced jointly and shown to stakeholders at regional and national level.
- Training on quality seed production, post-harvest handling techniques, seed marketing and cooperative organisation management, in collaboration with ISSD, for 73 participants, 53 in Tigray (SPC members, private seed producers (PSPs) and experts) and 20 in Amhara (Workamba SPC);
- Training on CS and PVS in Amhara, in collaboration with ISSD. 161 farmers (52 female) and 6 experts were trained on CS and PVS, gender and nutrition. All trainees received the printed manual, enhancing farmers' capacity to set criteria for preferred variety selection. Sesame and sorghum PVS and CS trials were conducted. 63 farmers (25 female) planted sesame for CS. The activity was conducted using 8 sorghum varieties and 10 sesame varieties. At maturity stage, two field days were organized, during which 88 farmers (44 female) evaluated the CS and PVS plots.
- In Tigray, the Setit 2 variety was deployed to a total of 22 farmers in 4 areas and supported with a full package, including machineries, by SBN and ISSD.
- SBN, ISSD and CASCAPE Tigray organized a Training of Trainers for 32 SBN, TARI and woreda staff (2 female) on sesame and rotation crops production, ISFM, IPM, store management, marketing, QUEFTS, gender mainstreaming, sesame value chain system.
- Using 4 improved and 2 local varieties, a sorghum variety adaptation trial was conducted with ISSD on 27 farmers' fields in 9 kebeles of Kafta Humera and Asgede Tsimbla woredas.
- Ten farmers (4 female) of Workamba SPC and 2 agricultural experts from Metema WoA visited Ras-Gaynt SPC, in South Gondar, gaining lessons on seed production and marketing from.
- SBN, ISSD and CASCAPE jointly organized field days in Kafta Humera and Asgede Tsimbila, with 127 and 79 participants drawn from federal, regional, zonal, woreda and kebele levels.
- ENTAG and SBN collaborated in organizing a study visit cum trade mission to India.
- Five small enterprises were supported in business plan development. Proposals submitted for an ENTAG competitive grant were not awarded because of insufficient innovative elements.
- SBN and CASCAPE conducted adaptation trials in Asgede Tsimbila and Kafta Humera.
- The soil characterization of Metema and Kafta Humera woredas was not done, as the process of company selection took long. Soil samples are currently collected for laboratory analysis.
- Training of GARC and SBN staff on QUEFTS model was delayed. Validation of the QUEFTS model in Metema was not done because of overlapping responsibilities of BDU/CASCAPE staff.

Collaboration with other projects and partners

SBN collaborates with many public institutions that have official mandates, such as for agricultural extension (BoA), agricultural research (ARARI-TARI), cooperative promotion (FCA and RCPA), cooperative training (Ardaita), weather forecasting (NMA and financial services (ACSI-DECSI). The financial literacy programme was done in close collaboration with Unions, cooperatives and cooperative promotion offices. The guarantee fund supported marketing credit programme was in collaboration with CBO, Abay and Lion banks, Unions and Cooperatives) etc. The figure below shows the diversity of collaborative relations of SBN (Figure 6). Whenever relevant, the project collaborates with public and private sector stakeholders at different levels.

In 2018, SBN collaborated with the following development partners and projects:

- Agriterra: Joint facilitation of Guarantee fund: input and marketing credit to cooperatives
- Support to local women groups for agro-processing activities
- CommonSense: weather forecasting and crop modelling (WUR)
- ATA: stakeholders' mobilisation, workshop, ToT training, field follow up, field days and monitoring
- Aeres: module development and support to Ardaita College (NUFFIC funding)
- F&S: Coop assessment, loan management training, Roll-out of Ardaita training modules.

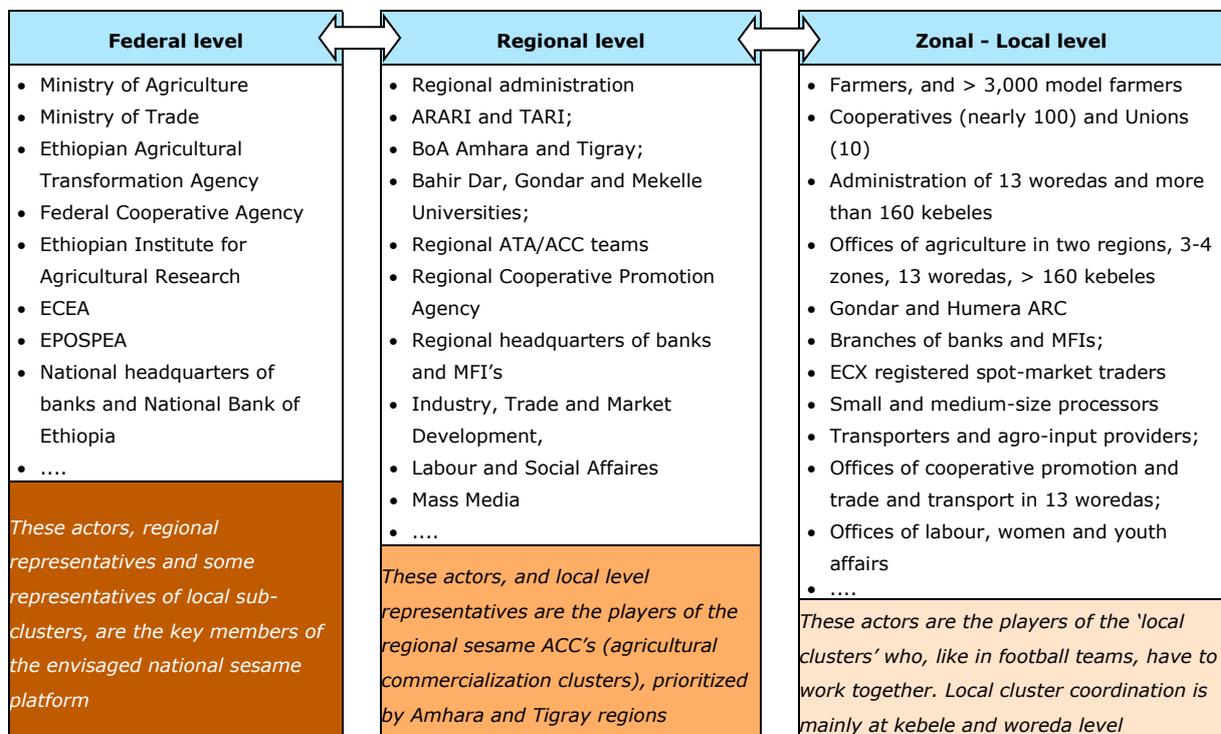


Figure 6 Diversity of stakeholders collaborating with SBN

Collaboration with [Dutch] private sector

Dutch partners are:

- Weather Impact: Developing, sharing and assessing farmers' use of weather forecast;
- Selet Hulling (Dutch-Ethiopian joint venture): Collaboration in context of the Sesame Open project, focusing on organic production improvement and farmer-company collaboration. In addition to SH, participating companies in the Sesame Open project are Trading Organic and Royal Duyvis Wiener;
- RHEA: Reception of mechanization package for small holder farmers, as developed in 2017.

Thematic collaboration

Important subjects of thematic collaboration, focussing on scaling and institutionalization are the following: Institutionalising financial literacy training to the national extension package; Lobby MoA for institutionalizing the guarantee fund at federal level; Launching the national sesame platform with sustainable funding from the sesame sector for effective coordination, innovation, information and knowledge sharing; Support for administrative unit development planning (kebele level agro-economic planning); Access of weather forecast and the need for its validation and scaling and the strengthening of collaboration with ATA.

Mainstreaming social inclusion & nutrition

In all trainings provided in collaboration with ISSD and CASCAPE efforts were made to include men, women and youth. Otherwise no specific activity on gender this year.

Transferring responsibilities and ownership

SBN does almost all the activities together with the relevant stakeholders, for example rolling out of 20 steps with BoA and ARC, scaling financial literacy with farmers' cooperative unions and CPO, weather forecast with NMA, labour related activities with labour and social affairs office etcetera. This is to give ownership of the activities to stakeholders. Concerning the work in the SBN team, WUR staff are supportive to the Ethiopian staff (training, planning and coordination, M&E, reporting, capitalization and communication). In the spirit of BENEFIT, it is an Ethiopian-Netherlands effort.

Conclusions and recommendations

Achievements

Encouraging steps have been made in building stakeholder M&E system. The MRY/MRR studies, the HH survey, the nutrition study and gender analyses helped to learn about production, adoption dynamics, dietary diversity and gender roles in the agriculture sector. Stories showing outcomes and impact have been gathered and communicated. Collaboration with sister projects especially with ISSD showed improvement. This is also the case for collaboration with ATA. Collaboration with Agriterra, CommonSense (weather information), F&S and GIZ (cooperative capacity building) are leading to good results. Efforts to social inclusion and food and nutrition improvement show very good results.

Challenges, opportunities and lessons learnt

Challenges and opportunities

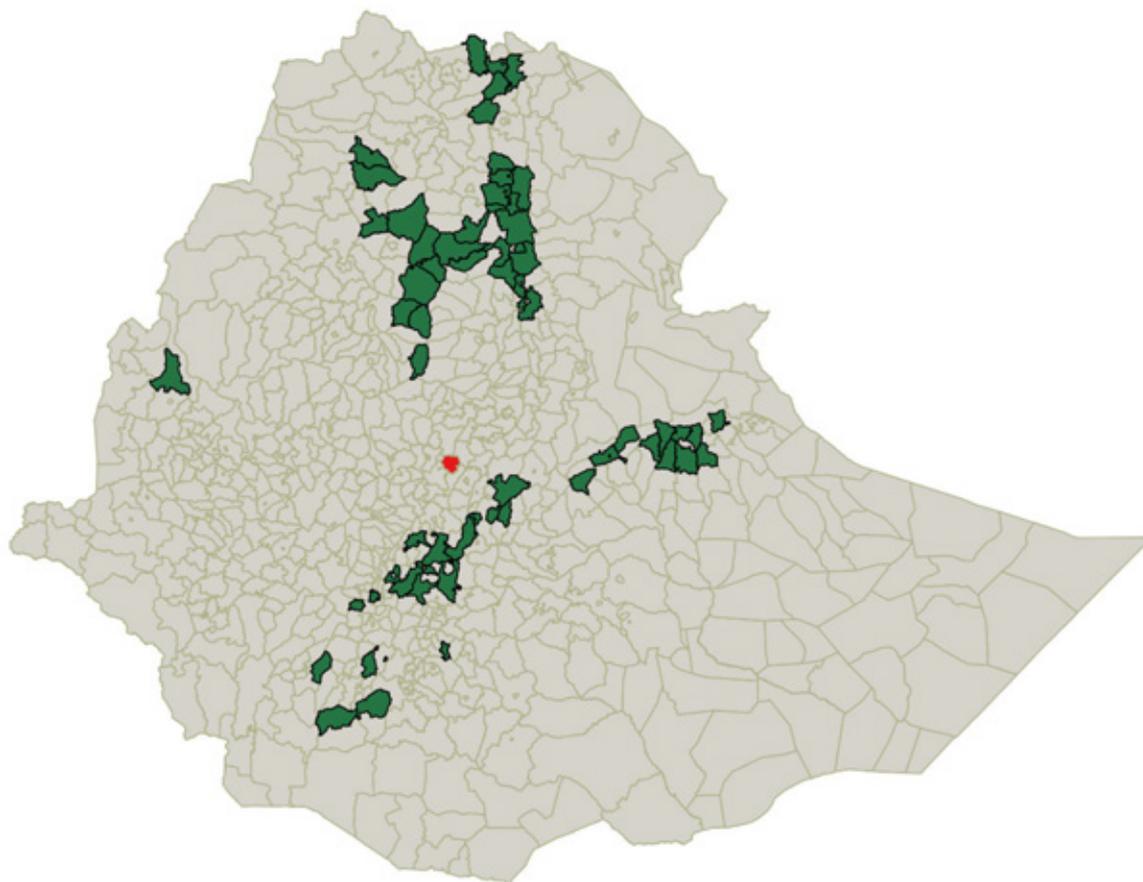
Further action is needed to have a professional information network that connects woredas, zones and region. Collaboration with sister projects and ATA can further improve. For several subjects, there are good perspectives for scaling out and scaling up, especially in the area of rural finance.

Way forward

Pursuing institutional collaboration via collaboration agreements with several institutions (BoA, RCPA, NMA, CBO, ASCI, DECSI and other financial institutions, Ardaita, cooperatives and unions). The institutional approach of the project is widely known and appreciated and should be brought to the next level. Pursuing collaboration with ISSD, CASCAPE, ENTAG within BENEFIT, as well as with other projects and organisations (Agriterra, F&S, Aeres/GIZ) and companies (Selet Hulling and Weather impact). If opportunities arise, expanding collaboration with Ethiopian private sector actors.







Introduction

REALISE (Realising Sustainable Agricultural Livelihood Security in Ethiopia) is the fifth programme in the BENEFIT Partnership. While the programme officially started on May 1, 2018, the official launch took place on August 24, 2018. The launching event was attended by over 50 participants representing government offices, implementing partners (universities), Agricultural Research Centres (ARCs), NGOs, Wageningen University & Research (WUR), BENEFIT staff and the media.

Leveraging the experience of BENEFIT-CASCAPE and BENEFIT-ISSD, the programme focuses on validating, adapting and scaling of Best Fit Practices (BFPs) in Productive Safety Net Programme (PSNP) woredas. Eight Ethiopian Universities are the main implementing partners. The programme also works closely with WUR in the Netherlands, MoA, Food Security Directorate and the Ethiopian Institute for Agricultural Research (EIAR) and Regional Agricultural Research Institutes (RARIs).

At impact level, REALISE aims to contribute to improved sustainable food security, income and trade among food insecure rural households in Ethiopia. The programme goal is to bring enhanced human, organizational and institutional capacities for validating, adapting and scaling best fit practices for smallholder agriculture for increasing productivity and thus improving sustainable livelihoods in chronically food insecure PSNP woredas. Programme outcomes are:

1. Developed best fit practices that meet expressed needs and have the potential to contribute to increased productivity and resilience are available for scaling in selected PSNP Woredas;
2. Increased availability, timely delivery and use of quality seed of new, improved, and/or farmer preferred varieties through diverse channels;

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3. Enhanced human, organizational and institutional capacities for matching, adapting, validating and scaling best fit practices; and
 4. A conducive environment exists for the institutionalization of evidence-based system innovation.

Major achievements

- Stakeholders mapping and consultation to assess the suitability of the PSNP woredas for REALISE programme were undertaken;
- Selection of programme woredas (60 woredas) was undertaken from four regional states (Amhara, Oromia, SNNPR and Tigray) based on agricultural potential, accessibility, stakeholder density and suitability for best fit farming practice promotion and scaling;
- Woreda profile prepared for developing innovation matrix;
- Terms of references were developed for university clusters and signed;
- The 2018 plan was revised due to delayed programme approval;
- Job descriptions were prepared for programme staff (manager, deputy manager, cluster managers and experts at both national and regional levels) and transparent recruitment undertaken;
- Seconded/part-time staffs from PSNP/BoA and agricultural research centres were assigned;
- The programme was launched in the presence of higher officials from EKN, State Minister of MoA, university presidents, RARI directors, and NGO representatives;
- A four-day programme orientation was made to the programme staffs (cluster managers, national and regional experts) and seconded staff from partner organisations where the goal, outcomes and result chain of the programme was introduced;
- The REALISE programme was introduced to agricultural offices of all intervention woredas by each cluster;
- 240 kebeles were selected in the 60 woredas for the implementation of the programme (best practice validation, socio-economic studies and scaling);
- Experts were trained by WUR and the national programme team on how to conduct baseline, participatory rural appraisal (PRA) and scoping studies;
- Baseline data, which will be used to evaluate achievements and track changes through the programme, were collected from 1902 households in 18 woredas;
- PRA was conducted by all clusters with communities in the 60 woredas and 120 representative kebeles (full PRA in 24 kebeles using 10 tools and light PRA in 96 kebeles using two PRA tools) and constraints and opportunities were identified to use for technology matching and subsequent planning;
- Draft PRA reports from all clusters were prepared;
- Technology matching to the agro-ecology and other reality of PSNP woredas was undertaken with BENEFIT programmes (CASCAPE and ISSD) and national and regional research institutes;
- 499 farmers are directly involved in demonstration and pre-scaling of five best fit practices (maize, potato, dairy goat and papaya in Tigray and vegetables in West Hararghe);
- The gender disaggregated data indicate that the involvement of female farmers in the demonstration and pre-scaling activities is 30%;
- 53 government extension staffs (F=16, M=37) were trained on demonstration and pre-scaling of best fit practices;
- Communication and meetings were organised with officials of MoA, EIAR, RARIs and ATA for better alignment and collaboration;
- NGOs and GOs present in each woreda were identified for possible partnership and collaboration with REALISE;
- Partnership agreements were signed with the regional PSNP, BoA and RARIs at the regional level. As such REALISE is now fully operational.

Challenges, opportunities, lessons learned and way forward

Challenges

- Difficulty to bring some institutions on board for collaboration because of their busy schedules;
- Work load of cluster teams because of large number of activities to accomplish in 2018, which was caused by delayed approval of the programme;
- Insufficient number of PSNP beneficiary households in some target kebeles;

- Landlessness of most PSNP member households to consider for agricultural practices that need land, particularly youth;
- Overall, low economic potential of the PSNP member households that may have an impact on the innovations, especially female headed Households;
- Bureaucratic problems with some university administrations especially in finance and purchasing of items;
- Limited number of stakeholders involved in PSNP area to collaborate;
- Limited availability of irrigation infrastructure to address moisture stress due to rain shortage;
- Majority of beneficiaries are very poor so difficult to use agricultural inputs that require capital;
- Dependency syndrome of PSNP households, in some cases, farmers' expectations are beyond the goal of REALISE (e.g. provision of implements, machines, livestock breeds, drinking water provision, road construction, etc.);
- Disorganized and less reliable secondary data related to PSNP beneficiaries at Woreda level;
- Gaps between farmers needs and existing policies since REALISE depend on PSNP credit instruments (e.g., lack of interest free credit system, but the farmers are not willing to pay interest due to religion).

Opportunities

- Good interest of the government to work with REALISE;
- Existence of target woredas with agricultural potentials having sufficient rainfall and fertile soil type;
- Presence of government structures and conducive institutional arrangement at grass root level;
- Existence of BENEFIT sister programmes such as CASCAPE and ISSD with previous experience and best fit practices; ISSD and CASCAPE have continued to contribute to the REALISE development in 2018 with technical support;
- Availability of farmers who are interested to use improved agricultural technologies;
- Availability of crop varieties and crop management suitable to divers agro-ecologies;
- Availability of relevant stakeholders with various mandates (research, extension, inputs, and credit);
- Availability of knowledge, experience and expertise within and outside the programme;
- Most beneficiaries are aware of nutrition importance;
- High demand for improved seed varieties and other best fit practices;
- Existence of formal and informal seed systems operating at community level;
- Existence of well-organized knowledge base and farming technologies with RARIs;
- Readiness of farmers to test and adopt new technologies;
- Indigenous knowledge on crop and livestock production is present in the intervention areas;
- Alignment of the goals and objectives of REALISE to the goals of PNSP. Together with NGOs working in the same area this really strengthens the effectivity of the programme.

Lessons learnt

- REALISE Woreda selection has been strategic in that the distance to the Universities has been kept to less than 200km to enhance accessibility during implementation and monitoring: a lesson learned from CASCAPE and ISSD;
- Bringing in second and third generation universities (Oda Bultum and Arba Minch) that would otherwise not have participated in such programmes, was a good move. We will learn from this experience to see whether more second and third generation universities can be integrated in a possible second phase of the programme;
- BENEFIT has smoothly facilitated the various short contracts and has handled expenses efficiently;
- REALISE has invested time and resources in the creation of a common vision and team building among the recruited staff by organizing a programme orientation workshop and a training on bottom up planning tools such as PRA and baseline studies. This has increased staff motivation and their commitment to contribute;
- REALISE was able to perform the important initial tasks of staff recruitment and procurement and contracts with the universities at the central level, and at the university level;
- Partners and stakeholder's engagement from the beginning has improved the chance of success and institutional embedding;
- Involvement of stakeholders especially farmers is crucial to identify and prioritize agricultural problems, and to classify available technologies in the area;

- Coordination and facilitation of stakeholders is strongly needed for participatory project implementation approach;
- Special tools may be required for gender analysis on technology selection, workload, access for information and decision making on available resources;
- Considerations should be made for effective engagement of youth in the target woredas.
- Diversification of crop species and types is crucial to contribute to nutritional security of the PSNP households;
- In collaboration work, well defined relationship and commitment, jointly developed structure, share of responsibility are the determining factors for the common goal to be achieved.

Way forward

- Based on communities' problem identified during PRA and feedback from the experts, the activity plan for 2019 that includes agricultural and social experimentation pilots and special studies and scaling will be finalised;
- Regional review and planning workshop of 2019 will be conducted to improve the work plans; careful review of regional plans to ensure that the needs of women, youth and low asset farmers are included. In addition, the selection of best fit practices and seed should take into account the nutrition aspect;
- Finalize PRA and baseline survey reports and disseminate the findings to major stakeholders;
- Implement 2019 work plan on technology validation, demonstration, pre-scaling, seed system strengthening, capacity building and system innovations;
- Strengthen collaboration with PSNP programme, research institutes and extension offices;
- Capacity building of extension staff, REALISE staff and Research centres;
- Implementation of planned activities to tackle the identified problems related to crop and livestock production, seed, nutrition and climate change.

Quality and quantity of sustainable agricultural production

The REALISE programme contributes to increased quality and quantity of agricultural production through its practice, seed and capacity pathways. Constraints and opportunities of the woredas have been identified as prioritised by the communities through PRA. Baseline data, which will be used as a benchmark for assessment of the programme impact, have been collected from 1902 households in 18 woredas of the programme. Best fit practices from CASCAPE and research institutes have been matched with conditions of the intervention woredas of REALISE that help to develop best fit practices. Best fit practice validation and demonstration started in Mekelle (on maize, potato and dairy goat) and Oda Bultum (vegetables) University clusters in the off-season using irrigation, 30% of the target farmers for these activities at the two clusters were female headed households. Regarding seed, approaches of ISSD have been assessed and seed system in the intervention woredas identified. Crowd sourcing and participatory variety selection will be conducted in collaboration with relevant stakeholders. This exercise will actively engage female farmers to identify the crop types and varieties preferred by them. In addition, the programme will work with seed producers and users to strengthen and/or establish linkages. Capacity development of research and extension personnel will contribute to this pillar. Over 60 persons participated in the workshop conducted on programme content and implementation modalities, bottom up planning, PRA and baseline survey, scoping study, stakeholder's analysis, and technology matching. In 2018, 53 government extension experts were trained by Mekelle cluster on scaling of best fit practices.

Improved enabling environment

System innovations are new products, services or arrangements that improve the functioning of value chains, seed systems, or research-extension systems. Examples are new ways of credit provision, crop insurance, new ways of seed marketing, new types of research-practice interfaces, new instruments to foster innovation and development piloted through projects and in-depth studies. In 2018, the programme conducted stakeholder analysis and preliminary discussion with researchers on the need for social experimentation, communities' coping strategies to shocks and enhanced resilience. Topics for in-depth social studies are being identified. The in-depth studies and social experimentation will be conducted after further consultation with experts experienced in the PSNP programme and areas.

In-depth studies and pilot researches to explore and better understand critical success factors in promoting improved agricultural practice, food security and resilience in PSNP areas. In doing so REALISE identified expert panel from European Union RESilience building and creation of economic opportunities in ETHiopia (EU-RESET), Cooperative for American Remittances to Europe -Graduation with Resilience to Achieve Sustainable Development (CARE-GRAD), Ethiopian Strategic Support Programme (ESSP/IFPRI), Household Economy Approach (HEA) Programme, Government of Ethiopia /World bank (GoE/World Bank) to deliberate on and identify systemic bottlenecks. The process also involves other key stakeholders at regional level through University clusters. To contribute to the existing Ethiopian government effort to move from blanket recommendation of fertilizers to site and crop specific recommendations, REALISE has initiated collaborative activities on EthioSIS fertilizers recommendation with Ethiopian Institute of Agricultural Research (EIAR) and Agricultural Transformation Agency (ATA). An MoU is drafted and will shortly be signed.

Partnership and collaboration

Collaborative activities have been planned with ISSD and CASCAPE based on product-place combination. The REALISE, ISSD and CASCAPE programmes planned a collaborative activity on malt barley in Southern Tigray; REALISE and ISSD have a plan to work on wheat in South Gondar and North Wollo. Haramaya University cluster has prepared a collaborative activity plan with eastern Oromia ISSD project for scaling up of best fit practices on potato in four kebeles of two woredas. The activity will address 200 households (including xx% of FHHs) with improved potato production packages. Hawassa University REALISE will work on finger millet with ISSD.

The implementation of the programme requires participation of different relevant stakeholders to create synergy and avoid duplication of efforts. Working with local offices will pave ways for institutionalisation of REALISE evidence-based practices and approaches. Thus, linkages have been created with zonal departments and woreda offices of agriculture (BoA), agricultural research centres, NGOs, and target kebeles. National and regional institutional advisors and seconded staff have been assigned from the BoA and agricultural research centre to assist implementation of the project as main partners and play a bridging role between REALISE and their institutions. Relevant stakeholders from kebeles and woreda management structures have participated in validation of the PRA outcomes, thus shared views have been created on the existing constraints and proposed interventions through REALISE.

Quality and quantity of sustainable agricultural production

In BENEFIT-REALISE programme we target the following outcomes for contributing to increased quality and quantity of sustainable agricultural production:

- 1 Developed best fit practices that meet expressed needs and have the potential to contribute to increased productivity and resilience; increased availability, timely delivery and use of quality seed of new, improved, and/or farmer preferred varieties; and enhanced human and organizational capacities
 - 1.1 Best fit practices have been matched, adapted and validated based on capacity and vulnerability analysis and mapped for suitability against the bio- physical and socio-economic conditions in the selected woredas
 - 1.2 Targeted households/groups are able to and actually adopt the promoted practices and to improve their resilience
 - 1.3 Increased production and dissemination/marketing of quality seed by farmers and farmers group; by local seed businesses; and by private seed companies
 - 1.4 Increased demand for and availability of new, improved, and/or farmer preferred varieties among farmers
 - 1.5 Linkages established between seed producers and seed users for sustainable seed supply
 - 1.6 The capacity of extension, NGOs and other service delivery mechanisms to disseminate best-fit technologies through implementing scaling strategies is enhanced
 - 1.7 Best fit practices are part of woreda agriculture development plans and the work plans of NGO's and other interested organisations in selected PSNP woredas.)

Practice, Seed and Capacity building pathways

The REALISE programme is contributes to increased quality and quantity of agricultural production through its practice, seed and capacity pathways. Constraints and opportunities of the woredas have been identified as prioritised by the communities through participatory rural appraisal (PRA). Baseline data, which is used to establish a benchmark for measuring impact and contribution of the programme, has been collected from 1902 households in 18 woredas of the programme. Best fit practices from CASCAPE and research institutes have been matched with conditions of intervention woredas of REALISE that help to develop best fit practices. Demonstration on practices of maize, vegetables and dairy goat and pre-scaling of potato and papaya best fit practices are being conducted in Mekelle and Oda Bultum University clusters. Regarding availability, timely delivery and use of quality seed, approaches of ISSD have been assessed and seed system in the intervention woredas identified. Crowd sourcing and participatory variety selection will be conducted in collaboration with relevant stakeholders. In addition, the programme will work with seed producers and users to strengthen and/or establish linkages.

Under capacity development pillar, the outcomes will partly be achieved through training professionals from government organisations on agricultural research and extension and experts from relevant NGOs. During the reporting period, the programme trained its own experts on bottom up planning (PRA) and technology matching so that they will be able to train extension staff. In addition, 53 government extension experts were trained by Mekelle cluster. The plan is to carry out training need assessment with research institutes and BoA/WoA in 2019.

Best Practice validation and adaptation

Understanding means of livelihood and identification of constraints and opportunities in the PSNP woredas are important prerequisite for matching and validating best fit practices. As a result, woreda profile has been prepared from available literature and visit to the intervention areas, PRA and baseline survey were conducted. Some activities on best fit practice development have been started in the off-season. These are reported below.

Preparation of woreda profile: To understand the livelihood means and agro-ecological and socio-economic conditions of the PSNP/REALISE intervention woredas, woreda profile including means of livelihood, population and agro-ecological data were collected and documented. Many of the intervention areas fall under lowland (kola) and midaltitude (*weinadega*) with meager rainfall. The information is being used as a basis for technology matching. Kebele selection was also undertaken in the process. The programme implements its plan in 240 kebeles of the 60 woredas.

Participatory rural appraisal: REALISE adopts a participatory bottom up planning process, which requires the active engagement of target community members. PRA is a qualitative research approach where the aim is to learn from rural communities about the condition of their lives such as their livelihoods, their vulnerabilities and coping strategies, their daily routines, their access and control to resources. By conducting PRA, REALISE has designed interventions based on a systemic analysis of the mechanisms behind the problems identified by the community. The objectives of the PRA exercise were to identify the most important problems & vulnerabilities, and opportunities and capacities as defined by the communities, existing institutions, organisations, programmes operating in the intervention areas and to use this knowledge to introduce technologies and innovations that match conditions of PSNP woredas and can address the needs.

PRA studies were conducted in all 60 intervention woredas of the programme with varying intensities: phrased as full PRA (where 10 PRA tools were used) and light PRA (where two PRA tools were used). Ten PRA tools (transect walk, landscape mapping, climate vulnerability matrix, cropping & livestock calendar, daily activity clock, access and control, Venn diagram, problem ranking matrix, nutrition focus group and seed focus group) were used in the full PRA exercise to assess constraints and opportunities (Table 1). Based on the number of kebeles and woredas addressed in the different university clusters a total of 275-935 individuals participated in the full PRA exercises. The full PRA was conducted in 26 kebeles of 13 woredas while two PRA tools (focus group discussion and problem ranking matrix) were used in the light PRA in the rest 94 kebeles of 47 woredas (Table 2). In the full PRA study, 4,149 farmers were involved out of which 50% were females. Particular attention was given to the assessment of access and control of productive resources in sessions where women only participated. A focus group discussion was conducted with youths to identify their challenges and capacities.

Major agricultural constraints identified by the PRA:

- Weather variability and drought;
- Prevalence of crop diseases and pests;
- Unemployment;
- Shortage and untimely delivery of quality;
- Poor soil fertility;
- Increasing costs of fertilizers;
- Food shortage;
- Lack of resource, especially land shortage in PSNP areas;
- Poor natural resource conservation (deforestation, high run off, severe erosion, flooding);
- Nutrition related issues like lack of seed for home gardening;
- Burden of field activities - limited use of labour saving technologies to reduce burden on women.

Table 1 Number of farmers participated in PRA across clusters and study tools

S/N	PRA tool	Number of participated farmers across clusters							
		Arba Minch	Arsi	Bahir Dar	Haramaya	Hawassa	Mekelle	Oda Bultum	Woldia
1	Transect walk	35	45	147	74	16	79	44	117
2	Landscape mapping	16	20	62	61	20	38	18	35
3	Climate vulnerability matrix	16	18	59	50	20	39	19	40
4	Cropping & livestock calendar	16	21	60	63	18	38	20	34
5	Daily activity clock	32	40	103	75	40	74	37	65
6	Access and control	16	20	53	43	20	38	19	40
7	Venn diagram	16	20	54	55	19	36	17	38
8	Problem ranking matrix	64	80	190	132	80	148	67	110
9	Nutrition focus group	32	40	108	75	40	74	35	78
10	Seed focus group	32	40	99	75	38	79	36	69
	Total	275	344	935	703	311	643	312	626

Table 2 Number of farmers participated in full PRA and number of woredas for light PRA in REALISE

Region	University cluster	Programme target		Full PRA area		Light PRA area		Full PRA participants		
		#	#	#	#	#	#	M	F	T
		woredas	kebeles	woredas	kebeles	woredas	kebeles			
Tigray	Mekelle	10	40	2	4	8	16	313	330	643
Amhara	Bahir Dar	10	40	2	4	8	16	453	482	935
	Woldia	10	40	3	6	7	14	341	285	626
Oromia	Arsi	7	28	1	2	6	12	171	173	344
	Haramaya	9	36	2	4	7	14	374	329	703
	Oda Bultum	4	16	1	2	3	6	141	171	312
SNNPR	Arba Minch	4	16	1	2	3	6	130	145	275
	Hawassa	6	24	1	2	5	10	154	157	311
Total		60	240	13	26	47	94	2077	2072	4149

Baseline survey: To collect data and information, 1902 households were interviewed involving both male and female farmers and PSNP and non-PSNP households to create basis for comparisons (Table 3). Data on household and demographic characteristics, available best practices, crop diversity, productivity has been collected. Currently data cleaning is underway. Analysis and report writing will continue.

Table 3 Number of interviewed farmers for the baseline data collection

University Cluster	No of Woreda	No. of interviewees Male						Total
		Male		Female		% youth		
		PSNP	Non PSNP	PSNP	Non PSNP			
Arba Minch	1	59	46	32	13	7.3%	150	
Arsi	2	89	58	43	10	31.5%	200	
Bahir Dar	3	123	76	93	8	9.7%	300	
Haramaya	3	174	79	36	13	24.2%	302	
Hawassa	2	92	38	49	21	28.0%	200	
Mekelle	3	72	83	108	37	21.3%	300	
Oda Bultum	1	89	30	21	10	23.3%	150	
Woldia	3	118	75	85	22	11.3%	300	
Total	18	816	485	467	134	19.58%	1902	

Matching, validation and demonstration of best fit practices: Matching of best fit practices of CASCAPE, ISSD and research institutes with conditions of REALISE woredas have been made. It is now clear which practices should be validated in PSNP/REALISE woredas. Currently, best fit practices on papaya developed by Mekelle University CASCAPE are being scaled up in REALISE woredas of Tigray. The lessons learned in CASCAPE on dairy goat, papaya, maize and potato (Figure 1) are being used to demonstrate and pre-scale the best fit practices for PSNP beneficiaries with the objective of improving food and nutrition conditions of resource poor households in REALISE woredas. (Table 4). Similarly, best fit practices on vegetables are being demonstrated in the off season by using irrigation in West Hararghe (Table 5).

Table 4 Best fit practices demonstration and pre-scaling by Mekelle University cluster in the off-season of 2018

Best fit practice	Breed/variety	No. of participants			Type of activity
		Male	Female	Total	
Dairy goat	Begait	0	35(100%)	35	Demonstration
Potato	Belete	102 (80%)	26 (20%)	128	Pre-scaling
Hybrid maize	Shone	68 (82%)	15 (18%)	83	Demonstration
	Damote	57 (56%)	45 (44%)	102	
Papaya	Maradol	68 (75%)	23 (25%)	91	Pre-scaling
Total		295 (67%)	144 (33%)	439	

The gender disaggregated data indicate that the involvement of female farmers in demonstration and pre-scaling activities of Mekele University cluster was 33%. The dairy goat revolving demonstration activity was designed for female only beneficiaries. In potato pre-scaling 20%, in maize demonstration 31% and in papaya 25% were female participants.



Figure 1 Belete Seed tuber on-farm demonstration by Mekelle University cluster

Vegetable demonstration was conducted to 60 households by the Oda Bultum University cluster. The approaches follow whole family targeting where 54 male headed households along their spouse and 6 female headed households participated.

Table 5 Vegetable best practice validation and demonstration in West Hararghe in the off-season of 2018

No	District	Kebele	Crops for best fit practices validation/demonstration	Number of Households		
				M	F	T
1	Habro	Garbiteka	Onion, cabbage, tomato, carrot, and beetroot	12	3	15
		Bareda	Onion, cabbage, tomato, carrot, and beetroot	14	1	15
2	Doba	Walkituma Ibsa	Onion, tomato	20	0	20
		Tokuma Mata Lenca	Onion, tomato	8	2	10
Total				54 (90%)	6 (10%)	60

Targeted households/groups are able to and actually adopt the promoted practices and to improve their resilience

Farmers' group formation, field days and extension materials preparation will be undertaken along with demonstration. Market linkage will be created along with pre-scaling of best fit practices. Currently, the programme is at a preparation stage to address this intermediary outcome.

Increased production and dissemination/marketing of quality seed by farmers and farmers group; by local seed businesses; and by private seed companies

Production of potato seed tuber is underway in Mekelle University cluster. The individual farmers now producing the tuber seed will be organised in primary seed producer's cooperative. Seed production and dissemination will be addressed as along with testing best fit practices on new and farmers' preferred varieties.

Increased demand for and availability of new, improved, and/or farmer preferred varieties among farmers

Rapid seed demand and supply assessment was conducted by university clusters to promote availability of new and farmers preferred varieties among farmers. This activity is still ongoing.

Linkages established between seed producers and seed users for sustainable seed supply

Linkage has been established between potato seed producers cooperative and potato growing farmers; and also, between papaya seedling producers' group and papaya producing farmers. Linkage establishment is underway between vegetables seed producers such ENZA ZADEN private seed producers.

REALISE assessment indicated that about 47 ISSD supported Seed Producer Cooperatives (SPCs) are operational in 31 REALISE Woredas and 60 kebeles which accounts for 52 and 25 percent of the total target woredas and kebeles of the programme respectively. Further capacity assessment will be made to select the right SPCs for seed supply linkage to PSNP beneficiaries.

Table 6 SPCs supported by ISSD ready to be linked with REALISE target clients

University Cluster	No SPC	No of woredas with SPC	No Kebeles
Mekelle	13	7	14
Woldia	6	6	6
Bahir Dar	3	3	3
Haramaya	9	6	20
Oda Bultum	9	4	10
Hawassa	4	2	4
Arsi	3	3	3
Arba Minch	0	0	0
Total	47	31(52%)	60 (25%)

The capacity of extension, NGOs and other service delivery mechanisms to disseminate best fit technologies through implementing scaling strategies is enhanced

Soon after its inception, the programme trained its own experts on bottom up planning (PRA) and technology matching (Table 7) so that they will be able to engage in regional planning and train extension staff at grassroot level. In total, 294 persons (Female = 43, Male = 251) participated at trainings and workshops organised by the programme, out of which 14.6% were female participants. There were seconded staff from research centres, extension offices and PSNP in the programme orientation workshop where they benefited from the training topics such as bottom up planning, theory of change and result chain. In addition to the training organized by the PMU, in 2018, 53 (Female=16, Male =37) government extension experts were trained in demonstration and pre-scaling of best practices by the Mekelle University cluster. The plan in 2019 is to carry out training need assessment with research institutes and BoA/WoA.

Best fit practices are part of woreda agriculture development plans and the work plans of NGO's and other interested organisations in selected PSNP

This intermediary outcome will be addressed after evidences are generated through validation, demonstration and pre-scaling.

Mainstreaming social inclusion and nutrition

Mainstreaming social inclusion received attention during staff recruitment, training, PRA and baseline surveys. In the PRA exercise, for example, about 50% female farmers were heard from to identify the agricultural constraints they face, their access to and control over productive resources and available opportunities. To capture their indigenous knowledge and needs, focused group discussion was made with female farmers for seed and nutrition in the PRA. Moreover, a problem ranking exercise was conducted with youth groups and low asset farmers to assess the specific needs and interests of these groups so as to inform the planning of activities to address their needs in the 2019 annual plan.

Conclusions and recommendations

Achievements

- National and regional programme teams have been established and sensitised with programme goal, approaches, result chain, theory of change and principles;
- Key stakeholders are identified and collaboration modalities are being prepared;
- The programme was launched in the presence of relevant stakeholders including EKN, MoA, research institutes, universities, and NGOs;
- Woreda profiles were prepared to support technology matching;
- Alignment with agricultural research institutes (EIAR & RARIs) is being done, areas of collaboration identified and selection of agricultural technologies presented;
- Training on PRA, baseline survey and technology matching was conducted for staff;
- PRA has been conducted, community means of livelihoods understood, and constraints and opportunities have been identified;
- Baseline survey is completed and there will be comprehensive database for the proposed indicators for impact assessment of the programme;
- Draft PRA report from the eight university clusters prepared;
- Best fit practice/technology matching has been undertaken with CASCAPE, ISSD and research institutes (EIAR & RARIs);
- Some demonstration and pre-scaling of best fit practices started in the off-season using irrigation.

Challenges, opportunities and lessons learnt

Unavailability of higher officials in some institutions for meeting and workshop to strengthen linkage appears a problem. Careful strategies (like informal communication, previous relationship, meeting arrangement at their convenience, etc) should be designed to bring them on board for better support and institutionalisation of the programme approaches. Availability of best fit practices and technologies from CASCAPE, ISSD and research institutes for matching with conditions of REALISE woredas is a good opportunity to reach the food insecure farmers in PSNP woredas in shorter time. Work load because readjusting of 2018 work plan caused by late approval of the programme. However, the life span of the programme and available resource including human power should be taken into consideration while planning and deciding number of activities. Dependency syndrome of some PSNP households was observed during the discussion with communities during PRA and baseline. There exists an opportunity as some farmers want to become independent and the government is also interested in avoiding/reducing dependency syndrome. Therefore, discussion with community will be planned to change their attitude towards aid and encourage them to become independent.

Way forward

REALISE will focus on the four pathways in 2019: Practice, seed, capacity development and system innovation, the first three pathways contributing to the first pillar of BENEFIT (increased quality and quantity of sustainable agricultural production) while the 4th pathway, system innovation contributes to the 3rd pillar of BENEFIT (improved enabling environment). Based on communities' problem identified during PRA and feedback from experts:

- Regional review and planning workshop of 2019 will be conducted to improve the work plans;

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- The PRA and baseline survey reports will be finalised;
 - Implementation of planned activities to tackle the identified problems related to crop and livestock production, seed, nutrition and climate change through technology validation, demonstration, and pre-scaling;
 - Socio-economic studies including social experimentation and in-depth studies will be conducted to address systemic bottle necks;
 - Strengthen collaboration with PSNP programme, research institutes and extension offices;
 - Develop capacity of extension staff, REALISE staff and Research centres.

Improved enabling environment

In REALISE we target the following outcomes for contributing to an improved enabling environment for the agricultural sector:

- 3 A conducive environment for the institutional embedding of evidence-based system innovation
- 3.1 Results of pilots and studies are available and being exchanged and discussed at relevant stakeholder platforms (fora)
- 3.2 Ethiopian implementing partners and relevant stakeholders are constructively involved in programme generated/related policy issues

A conducive environment for the institutional embedding of evidence-based system innovation

In-depth studies and pilot researches to explore and better understand critical success factors in promoting improved agricultural practice, food security and resilience in PSNP areas will be conducted. In doing so REALISE identified an expert panel from EU-RESET, CARE-GRAD, ESSP/IFPRI, HEAP, GoE/World Bank to deliberate on and identify systemic bottlenecks. The process also involves other key stakeholders at regional level through University clusters.

To contribute to the existing Ethiopian government effort to move from blanket recommendation of fertilizers to site and crop specific recommendation, REALISE has initiated collaborative activities on EthioSIS fertilizers recommendation with Ethiopian Institute of Agricultural Research (EIAR) and Agricultural Transformation Agency (ATA). MoU is drafted and detailed discussion finalized to be signed.

Results of pilots and studies are available and being exchanged and discussed at relevant stakeholder platforms

No results in 2018 yet.

Ethiopian implementing partners and relevant stakeholders are constructively involved in programme generated/related policy issues

A series of consultative meetings were organized with key stakeholders at federal and regional levels. The PMU has reached out to MoA, ATA, EIAR and selected NGOs bilaterally. The meetings were successful in creating greater understanding about the REALISE programme, its key principles, target beneficiaries and working modalities. Most of the stakeholders showed interest to collaborate with REALISE for greater impact and visibility.

Mainstreaming social inclusion and nutrition

The in-depth studies and research pilots mainly deal with systemic bottlenecks and issues of social exclusion which among others focus on youth, gender and economically weak section of the community.

Conclusions and recommendations

Achievements

- Identification of expert panel to get insight and recommendations for in-depth studies and pilot researches;
- Stakeholders consultation and engagement at regional level to identify systemic bottlenecks;
- MoU drafted with EIAR and ATA to conduct collaborative activities to validate EthioSIS fertilizers recommendation;
- Bilateral discussion has been made with key stakeholders at federal and regional levels;

-
- Regional institutional advisory board meetings were conducted;
 - Overcome duplication of efforts.

Challenges, opportunities and lessons learnt

Challenges

- The complexity of PSNP operational context and multi-sectoral nature of the problems;
- Stakeholder's conflict of interests;
- Networking is resource intensive (time, money and knowledge).

Opportunities

- The possibility of identifying issues beyond the scope and means of PSNP instruments for policy inputs;
- The availability of inhouse experiences and willingness to contribute.

Lesson learnt

- PSNP areas problems cannot be solved by technological interventions alone;
- Collaboration facilitate institutional embedding and sustainability.

Way forward

- Key in-depth studies and pilot research areas will be identified;
- EthioSIS fertilizers recommendation validation will conducted on 20 PSNP woredas;
- Collaborative engagement enhance linkage and avoid duplication of efforts;
- REALISE will join platforms and JERS mission initiated around PSNP.

Collaboration

In the BENEFIT partnership, we target the following outcomes for collaboration:

- 4.1 Evidence-based information is used and communicated by effective M&E in the partnership
- 4.2 Financial and narrative reports are accurate, compliant and submitted on time
- 4.3 The four programmes demonstrate effective collaboration and alignment of activities
- 4.4 Social inclusion and nutrition are mainstreamed

M&E and communication

REALISE set up its own M&E framework well aligned to BENEFIT partnership. Monitoring and Evaluation of the REALISE programme serves two purposes: accountability to the donor and learning for impact. The M&E system will integrate a mix of qualitative and quantitative methods of data gathering, with strong focus on participatory approaches and methods to promote the use of M&E information. For accountability purposes a lean M&E system will be designed in line with the existing BENEFIT M&E system. The responsibility of monitoring lies with the programme manager and cluster managers, while M&E senior expert and focal persons at cluster level will be appointed for the regular monitoring and reporting.

Collaboration with BENEFIT programmes

The REALISE and ISSD programmes have initiated collaborate activities on four commodities in eight woredas with the objective of ensuring seed security for food and nutrition security in PSNP woredas. The programme collaborates with CASCAPE but this is limited only to technical backstopping and capacity building areas as there is an are intervention woreda mismatch between the two programmes. However, a total of ten CASCAPE best fit practices matched with the conditions of REALISE target woredas and planned to be promoted with clear validation protocol and upscaling strategies.

REALISE has been collaborating with ISSD on four products and eight places (Table 7). The collaboration was established through five University clusters namely: Haramaya, Hawassa, Bahir Dar, Woldia and Mekelle Universities where ISSD is also operational.

Table 7 REALISE collaborative activities

University Cluster	REALIZE Collaboration with	Places	Commodity
Haramaya	ISSD	Jarso and Dadar	Potato
Hawassa	ISSD	Halaba	Finger millet
Bahir Dar	ISSD	Dabat	Bread wheat
Woldia	ISSD	Meket	Bread wheat
Mekelle	ISSD + (CASCAPE)	Ofa, Endamekhoni and EmbaAlaje	Male barely

Collaboration with other projects and partners

REALISE reached an agreement with HELVETAS Swiss Inter-cooperation (HLVETAS-GRAD in brief) in Mekelle to work together following the principle of layering and sequencing. The agreement includes Mekelle University cluster to join already established platform with the membership of HLVETAS-GRAD, GiZ, TARI, Mekelle University and other NGOs. The bilateral agreement focusses on collaborative activities which include arrangements for co-financing.

Collaboration with [Dutch] private sector

REALISE established linkage with Enza Zaden, a vegetable seed supply company from the Netherlands. This will improve access vegetable seed of onion, tomato, carrot and switchyard for the main cropping seasons.

Thematic collaboration

Ministry of Agriculture and Livestock Resources (MoA) of Ethiopia has been emphasizing about the critical importance of soil information in developing smart policies for agricultural development and the preservation and rehabilitation of country's natural resources. The REALISE programme has planned to support and build the capacity of MoA and EIAR in developing soil maps. Soil characterization is used as input to develop the soil maps while the maps will in turn be used as inputs for developing recommendation mapping.

REALISE pays specific attention to the importance of locally defined and delimited recommendations. To this end, a recommendation mapping methodology will be developed to ensure effective and optimal practices. This methodology will be based on biophysical (soil, agro-ecology, length of growing period) and socio-economic (livelihood profiles, access to input and output markets, labour supply) components. The recommendation maps will be used for scaling innovations in similar biophysical and socio-economic conditions, which has been conceptualized in CASCAPE as 'best-fit technology recommendation mapping'.

One key missing element in the available background data in Ethiopia are topographically detailed soil maps supported with adequate soil profile information. Existing legacy maps are not functional for soil fertility management decisions at kebele level because the scale is too large (1:2,000,000). Therefore, it is necessary to develop specific woreda soil maps. In collaboration with ISRIC, CASCAPE has already done this for some woredas. REALISE is going to invest in producing 1:250,000 soil maps of the 50 PSNP Woredas based on the lessons from the CASCAPE programme. To this end, it will collaborate with ISRIC, the World Soil Information Centre, which is based on the Wageningen UR campus and especially well equipped to do this work.

A task force which oversee the proper implementation and institutionalization of the soil characterization and recommendation mapping activities was established by State Minister of Natural Resources and Food Security Sector. The composition of the team includes EIAR (1), MoA (2), ATA (1), CASCAPE (1) and REALISE (2).

Mainstreaming social inclusion & nutrition

The collaborative activities are under preparation for implementation phase, however, attention will be given to make the collaborative activities more socially inclusive and vigorously promote the active participation of youth, females and economically weak section of the community.

Transferring responsibilities and ownership

The REALISE PMU is proactively taking lead roles in programme management and implementation. Further knowledge and skill transfer and empowerment of local staff will be made in the remaining period.

Conclusions and recommendations

Achievements

- M&E frame work which is aligned with BENEFIT M&E is prepared;
- 10 best fit practices of CASCAPE will be promoted in REALISE target woredas;
- Collaborative activities were designed with ISSD on four products and eight places (woredas);
- Thematic collaboration was established with MoA, EIAR and ATO on soil characterization and recommendation mapping;
- A taskforce was established to oversee the soil characterization and recommendation mapping.

Challenges, opportunities and lessons learnt

Challenges

- The product and place definition of collaboration has a limitation to work with CASCAPE;
- Government officials are mostly unavailable for meetings and workshops.

Opportunities

- The availability of soil characterization experiences with in BENEFIT partnership and among partnering institutions;
- The GoE has given due emphasis to the soil sector;
- The BENEFIT partnership emphasis on collaborative activities.

Lesson learnt

- Capitalizing on CASCAPE progress on soil cauterization and recommendation mapping;
- Capacity on the state of the art to do the soil characterization has been demonstrated by ATA and CASCAPE to be adapted by REALISE;
- The need for flexibility to manage a programme operating in risk prone and chronically food insecure areas.

Way forward

- REALISE and ISSD collaborative activities will be implemented on four products and eight places which improves availability and access of quality seed for farmers preferred varieties;
- Soil map will be produced for 50 PSNP woredas;
- REALISE play key roles on nationally and regionally established platforms to institutionalize its layering and sequencing principles;
- Capacity building on random forest approaches will be organized for soil surveyors and pedologists.

Appendix 8 List of abbreviations and acronyms

AACCSA	Addis Ababa Chamber of Commerce and Sectoral Associations
AAU	Addis Ababa University
ABSF	Agribusiness Support Facility
ACC	Agricultural Commodity Commercialization
ACSI	Amhara Credit and Saving Institution
ADPLAC	Agricultural Development Partners Linkage Advisory Council
AERES	Aeres Training Centre International (professional training agri-sector)
AGP	Agricultural Growth Program
Agriterra	Agri-agency established by Dutch farmers' organisations
AMU	Arba Minch University
ARARI	Amhara Regional Agricultural Research Institute
Ardaita	Centre of Excellence for cooperative training in Ethiopia
ASMA	Appropriate Solutions for Mechanization of Agriculture in Ethiopia
ATA	Agricultural Transformation Agency
ATJK	Adami Tullu Jido Kombolcha
AU	Arsi University
B2B	Business to business
BDU	Bahir Dar University
BENEFIT	Bilateral Ethio-Netherlands Effort for Food Security; Income and Trade
BMGF	Bill & Melinda Gates Foundation
BoA	Bureau of Agriculture
BoALR	Bureau of Agriculture and Livestock Resource
BOANR	Bureau of Agriculture and Natural Resource
C4C	Cooperatives for Change
CAADP	Comprehensive Africa Agriculture Development Program
CASCADE	Capacity building for Scaling up of evidence based Practices in agricultural production in Ethiopia
CBO	Cooperative Bank of Oromia
CDI	Centre for Development Innovation
COC	Certificate of Competence
CPA	Cooperative Promotion Agency
CPO	Cooperative Promotion Office (<i>woreda</i> level)
CSA	Central Statistical Agency
DA	Development Agent
DECSI	Dedebit Credit and Savings Institution (Tigray)
DFID	Department for International Development
DGIS	Directorate General for International Cooperation
DLO	Dienst Landbouwkundig Onderzoek
DLS	Diffused Light Storage
DSM	Direct Seed Marketing
ECX	Ethiopian Commodity Exchange
EGS	Early Generation Seed
EIAR	Ethiopian Institute of Agricultural Research
EKN	Embassy of the Kingdom of the Netherlands
ENLBA	Ethiopia Netherlands Business Association
ENTAG	Ethiopia-Netherlands Trade for Agricultural Growth
EPOSPEA	Ethiopian Pulses, Oilseeds and Spices Processors-Exporters Association
ERCA	Ethiopian Revenue and Customers Authority
ESA	Ethiopian Seed Association
ETB	Ethiopian Birr
ETC	Ethiopian Telecom Cooperation

F&S Ethiopia	Fair and Sustainable Ethiopia
FCA	Federal Cooperative Agency
FDOV	Faciliteit Duurzaam Ondernemen en Voedselzekerheid
FGD	Focus Group Discussion
FGI	Fertile Grounds Initiative
FP	Farmers' Practices
G4AW	Geodata for Agriculture and Water
CANAG	CASCADE Nutrition And Gender Component
GALS	Gender Action Learning System
GARC	Gondar Agricultural Research Centre
GF	Guarantee Fund
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoE	Government of Ethiopia
GRAD	Graduating with Resilience to Achieve Sustainable Development
GTP	Growth and Transformation Plan
HU	Haramaya University
HuARC	Humera Agricultural Research Centre
HwU	Hawassa University
IAIP	Integrated Agro-Industrial Park
ICARDA	International Center for Agricultural Research in the Dry Areas
ICT	Information and Communication Technology
IF	Investor farmer
IFDC	International Fertilizer Development Centre
IFDC/2SCALE	Agribusiness development project '2SCALE' of IFDC
IFPRI	International Food Policy Research Institute
IICD	International Institution for Communications and Development
ILRI	International Livestock Research Institute
ISSD Ethiopia	Integrated Seed Sector Development in Ethiopia
IT	Innovation Teams
KB	Kennis Basis
KIT	Royal Tropical Institute
LIFT	Land Investment for Transformation
LSB	Local Seed Business
M&E	Monitoring and Evaluation
MASP	Multi-Annual Strategic Plan
MFI	Micro Finance Institute
MoA	Ministry of Agriculture
MoALR	Ministry of Agriculture and Livestock Resource
MRR	Marginal Rate of Return
MRY	Marginal Rate of Yield
MU	Mekelle University
NABC	Netherlands Africa Business Council
NBE	National Bank of Ethiopia
NGO	Non-Governmental Organization
NMA	National Meteorological Agency
NPMU	National Program Management Unit
NRM	Natural Resource Management
OBU	Oda Bultum University
OSE	Oromia Seed Enterprise
P2P	Peer to Peer
PC	Primary Cooperative
PCU	Partnership Coordination Union
PED	Pre-Extension Demonstration
PGR	Plant Genetic Resources
PIM	Project Implementation Manual
PMU	Project Management Unit
PPP	Public Private Partnership

PPP-O	Public Private Partnership on Oilseeds
PRA	Participatory Rural Appraisal
PSA	Private Sector Association
PSNP	Productive Safety Net Programme
PVS	Participatory Variety Selection
QDS	Quality Declared Seed
RARI	Regional Agricultural Research Institute
RCPA	Regional Cooperative Promotion Agency
REALISE	Realising Sustainable Agricultural Livelihood Security in Ethiopia
RIAS	RABO International Advisory Services
RSE	Regional Seed Enterprise
RUSACCO	Rural Savings And Credit Cooperative Organization
SACCO	Savings And Credit Cooperative Organization
SBC	Sesame Business Cluster
SBN	Sesame Business Network
SH / SHF	Small Holder / Smallholder Farmer
SLLC	Second Level Land Certification
SMEs	Small and Medium Enterprises
SNNP	Southern Nations Nationalities and People
SNNPR	Southern Nations Nationalities and Peoples Region
SNV	Stichting Nederlandse Vrijwilligers
SPC	Seed Producer Cooperative
SVC	Seed Value Chain
TA	Technical Assistance
TAG	Ethiopia-Netherlands Trade for Agricultural Growth
TARI	Tigray Agricultural Research Institute
TC	Technical Committee
TGT	Tebebe General Trading
ToT	Training of Trainers
UK	United Kingdom
WCDI	Wageningen Centre for Development Innovation, Wageningen University & Research
WEcR	Wageningen Economic Research
WoA	Woreda Office of Agriculture
WU	Woldia University
WUR	Wageningen University & Research
ZoDA	Zonal department of Agriculture

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Wageningen Centre for Development Innovation supports value creation by strengthening capacities for sustainable development. As the international expertise and capacity building institute of Wageningen University & Research we bring knowledge into action, with the aim to explore the potential of nature to improve the quality of life. With approximately 30 locations, 5,000 members of staff and 10,000 students, Wageningen University & Research is a world leader in its domain. An integral way of working, and cooperation between the exact sciences and the technological and social disciplines are key to its approach.



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