



Progress Report Integrated Seed Sector Development Myanmar: 2019

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Reporting Period	2019	Reporting Institution	Wageningen University & Research
Reporting Manager	Abishkar Subedi ISSD Myanmar programme leader	Date	31 March 2019

1 Key Project Data

Project Title	Integrated Seed Sector Development Myanmar: Developing a Vibrant Public-Private Seed System for Rice, Oilseeds and Legumes in the Dry Zone (ISSD Myanmar)					
Duration of project	Current phase	2017-2020	Project launch	1/1/2017	Closing date	31/12/2020
Budget	Budget for reporting period	€ 408, 030	Overall budget	€ 1,499,639	Overall contribution by	

2 Executive Summary

The Integrated Seed Sector Development (ISSD) Myanmar programme has three components, which correspond with its three outcome areas. The first component is seed sector coordination, with the outcome of improving seed sector coordination; the second is early generation seed (EGS) production, with the outcome of increased business performance of EGS producing seed farms; and the third is seed business development, with the outcome of increased local availability and uptake of quality seed at affordable prices to smallholder farmers. The main results of 2019 for the three components are presented below.

Improved seed sector coordination

- 2019 saw a breakthrough for the Myanmar Seed Association (MSA), with its official registration in August 2019 by the Directorate of Investment and Company Administration. The MSA was officially launched at the sixth national seed sector platform meeting, held in November 2019, and discussions took place afterwards on the association's strategic plan. A draft strategic plan was developed towards the end of 2019 and it is envisaged that in 2020 the secretariat of the MSA will be established and organize a number of events.
- The fifth national seed sector platform meeting was organized in Nay Pyi Taw on 14 May 2019. The platform focused on the theme 'Alternative seed quality assurance systems'. The platform discussed three quality assurance systems: truthfully labelled seed; quality declared seed; and the participatory guarantee system. The platform concluded that, given Myanmar's seed regulatory framework and seed quality standards, the participatory guarantee system is most suitable for the intermediate seed systems of Myanmar.
- The sixth national seed sector platform meeting had the topic 'Developing a national seed investment plan for Myanmar'. The meeting was held on 6 November 2019 in Nay Pyi Taw. ISSD Myanmar collaborated with the Syngenta Foundation for this platform meeting. In the meeting, the Department of Agriculture (DOA) and stakeholders agreed to develop the concept of 'Myanmar Seed Valley' in the Dry Zone where the ISSD Myanmar programme is already operating. This is in line with the ambition of the government of Myanmar to develop Myanmar as a seed producing and exporting country. Myanmar Seed Valley should bring together a number of domestic and international seed companies producing and processing seeds, as well as providing seed related services (e.g. quality assurance, variety testing). To this end a detailed agronomic assessment was undertaken that included soil and water analyses of the envisaged location (Hlaingtet Central Farm), as well as a water needs analysis. The proposal is currently undergoing the process of approval by the senior management of the Ministry and Parliament.
- We completed three separate studies on quality seed trials to generate field evidence on the yield increase of farmers in the Dry Zone of Myanmar as a result of using quality seed of improved varieties. We established a total of 144 trials in Mandalay, Sagaing and Yezin. The report will be finalized in 2020. The result of the study will help us to inform and promote farmers' use of quality seed.

Increased business performance of EGS producing seed farms

- The main objective in 2019 for the EGS component was a scaleup pilot on long-term forward contracting of EGS through a public-private partnership business model. Three long-term contracts on EGS were signed between three domestic seed companies and the Department of Agricultural Research (DAR) of the Ministry of Agriculture, Livestock and Irrigation (MOALI). This guarantees that private seed companies will get the required volume of breeder and foundation seed from the DAR for the next five years. The contract also has a provision that the DAR will provide additional technical support to the seed companies on their plant breeding activities and quality EGS production technologies on a cost-recovery basis. This business model will be helpful in solving one of the key bottlenecks in lack of sufficient volume of EGS in the Dry Zone.
- A mobile based application system on the estimation of EGS demand and supply for pulses and oilseed crops is now ready for scaling up in Myanmar. We established a partnership with the Rice Seed Sector Development (RSSD) project in Delta in a joint scaling effort. The digital system has brought public seed farms, seed companies, seed producers and farmers onto one platform in order to estimate demand and supply for different seed classes in real time. The system will be launched in 2020 for full operation in the Dry Zone including emphasis on its financial sustainability beyond the life of the project.
- Two refresher training programmes were organised on quality EGS production and the characteristics of new varieties for the public seed farms sector experts and private seed producers in Monywa township in August 2019. The training courses brought together 80 participants and covered green gram, black gram, pigeon pea and groundnut crops.
- A three-day workshop was organised to share the results of the ISSD Myanmar programme on seed business development, foreseen challenges, action plans, and the process of application of the plant variety protection system. The workshop was held in Yezin on 12-14 September 2019. A total of 44 participants from public, private and NGOs seed project staff joined the workshop.
- Results from training activities as part of the ISSD Myanmar programme have now been synthesized in a series of EGS training manuals, which are at their final stage. This includes crops such as chickpea, green gram, black gram, sunflower, groundnut, and pigeon pea.

Increased local availability and uptake of quality seed at affordable price to smallholder farmers

- For 2019, supported seed producers produced a total of 2,016 metric tons of seed out of which 99.6% was sold to farmers. The variety portfolio consisted of six crops and 25 improved varieties. The programme supported a total of 72 seed producers and four domestic seed companies in Sagaing and Mandalay regions
- We reached an additional 21,785 farmers directly in 2019 through quality seed sales (20,084 farmers), a seed fair (435 farmers) and field demos (1,266 farmers). Farmers' use of quality seed of improved varieties covered a total of 20,105 ha of crop land from the 2019 seed sales.
- A local seed business scaling partnership agreement was signed with the Cooperative Department (DOC) of MOALI. Scaling was achieved with an additional 311 seed producers from 16 townships of Nay Pyi Taw and Bago region of the Dry Zone in 2019. This increased the total seed production area by 1,571 acres (636 ha). Volumes of seed production and sales of DOC supported SPCs will be documented for the 2020 season.
- With the support of ISSD Myanmar, the DOC established a new seed producers' cooperative unit (SPC Unit) in Nay Pyi Taw. This policy action will ensure the long-term sustainability of the ISSD Myanmar programme, with the objective that supported local seed businesses and additional thousands of informal seed producers will be organised and legally registered as SPCs. To move forward, the DOC placed seven fulltime members of staff in the newly established SPC unit and the ISSD Myanmar programme added one full time member of staff to provide capacity development support to the staff of the SPC unit. In addition to this, we are supporting the DOC to draft the SPC management guidelines (which will become a by-law). Planning has been made to make a final version of SPC management guidelines and to have their official launch in May 2020.
- We organised a seven day Training of Trainers (ToT) course on seed business development in Nay Pyi Taw on 19-22 September 2019 for SPCs in Myanmar. A total of 14 participants, from the SPC Unit in Nay

Pyi Taw and the DOC in Bago, Mandalay and Sagaing region, joined in the training. The ToT course concluded with a follow-up training course on module development and planning.

- The SPC unit of the DOC organised two training courses on seed business management for the seed producers in Bago and Nay Pyi Taw region in October and November 2019. As a result a total of 96 seed producers from ten townships gained practical knowledge on quality seed production and seed business development.
- Seven seed producer associations and their 72 members received seventeen tailor-made capacity building training courses at various intervals on quality seed production and business development. This resulted in significant improvements in the business capacity of the seed producers, with increased production and sales of quality seed (more than the annual target).
- A total of 23 field demonstrations were conducted by seed producers and domestic seed companies to create awareness and increase uptake of quality seed by farmers. A total of 37 new improved varieties of crops (rice, chickpea, sunflower, sesame, groundnut, green gram, sunflower) were demonstrated in the field. A total of 1,631 farmers visited the field demos.
- A regional seed fair and seed seminar was organised in Monywa township of Sagaing region on 22 October 2019. The event was inaugurated by U Kan Zar Hmone, the Minister for Agriculture, Sagaing region. A total of 435 farmers visited the seed fair. The seed seminar focussed on solving problems and priority actions to increase the uptake of good quality seed through awareness and market strengthening in Sagaing region.
- We established a partnership with two additional seed companies from the Netherlands (Bejo and Solynta) to start hybrid potato variety demonstrations in the Dry Zone and Shan state and to assess local production suitability and market/consumer preference. We also established a partnership with Tropical Bio Limited (TBL), a domestic seed company based in the Dry Zone of Myanmar. TBL is going to focus on hybrid sunflower 'Suryakiran' F1 seed production in the Dry Zone. The company East-West Seed organised a field day in Nay Pyi Taw, which 70 farmers attended in order to learn about new varieties and hybrid seed production technologies.

Lessons learned

We learned that the government of Myanmar is eager to embed part of the ISSD activities in its own structures and activity plans. In particular the work with the DAR, DOA and DOC has been promising in this regard with respect to the EGS partnership agreements, the Myanmar Seed Valley concept and the training of SPCs. ISSD has developed strong relations with government officials and experts, particularly by having embedded staff at the Seed Division and the DOC. These activities are very important for the sustainability of the project's innovations beyond the life of the project (past 2020).

Conclusions and follow-up steps

For many of the activities, 2020 will be a crucial year for achieving the main outputs and outcomes, and ensuring a sound strategy exists (as with the EGS business model and digital application system). Something similar applies to the continuation of the national seed sector platform meetings and the strengthening of the Myanmar Seed Association and the SPC Unit at the DOC. The project's embeddedness within the Ministry of Agriculture's Seed Division significantly helps in achieving our targets. In addition to this, we have developed strong partnerships with the DOC for long-term institutional support to the seed producers through strong capacity building of the SPC unit at the DOC. In the same vein, we continue to strengthen the capacity of the MSA through strong secretariat support and services.

3 Introduction

The ISSD Myanmar programme envisions a vibrant and pluralistic seed sector that caters for the quality seed needs of smallholder farmers in Myanmar's Dry Zone. The programme consists of three different components, which are also the three outcome areas of the programme. The first component is seed sector coordination, with the outcome of improving seed sector coordination. The second component is EGS production, with the outcome of increased business performance of EGS-producing seed farms. The third component is seed

business development, with the outcome of increased local availability and uptake of quality seed at affordable prices to smallholder farmers.

The first two components are coordinated by MOALI through a dedicated ISSD programme office located within the DOA's Seed Division in Nay Pyi Taw. The third component is coordinated by Welthungerhilfe (WHH) through two field offices located in Myinmu and Pathengyi townships in the Dry Zone. The Wageningen Centre for Development Innovation (WCDI), Wageningen University and Research (WUR), is the overall coordinator of the consortium and the liaison point for the Netherlands Directorate-General for International Cooperation (DGIS). WCDI is responsible for project financial control, monitoring and evaluation, reporting and accountability, and technical assistance. Resilience BV provides technical assistance for the implementation of the first and second programme component.

The ISSD Myanmar programme operates in four regions of the Dry Zone of Myanmar: Sagaing, Mandalay, Nay Pyi Taw and East Bago. The eight selected crops are: rice, green gram, black gram, pigeon pea, chickpea, sesame, groundnut and sunflower. The programme aims to reach 75,500 smallholder farmers with locally available quality seed of well adapted varieties of rice, food legume and oilseed crops in the Dry Zone of Myanmar.

4 Results and Outcome

We have organised this chapter according to the three programme components and the outputs and outcomes associated with the components.

4.1 Seed sector coordination

Improved seed sector coordination is the first outcome of ISSD Myanmar. MOALI coordinates this component with support from Resilience BV and WUR. In table 1 we provide the key outcomes and outputs against the target indicators for component 1 in 2019. A summary of the main achievements of the programme for 2019 are explained below.

Table 1. Key outcomes and outputs against the target indicators for component 1 in 2019

Indicator	EOP target	2018 result	2019 result	% EOP reached
OUTCOME 1: Improved seed sector coordination				
# of collaborations established or strengthened	15	7	4	73%
# of studies implemented in the Dry Zone	6	6	0	100%
# of actors participating in seed platform meetings	40	75	75	188%
Types of actors participating in seed platform meetings	7	9	10	143%
# of joint pilots on seed value chain issues endorsed	4	3	1	100%
# of regional seed growers associations established	4	0	0	0%
National seed association established	1	0	1	100%
# of seed association meetings	4	0	2	50%
# of seed association members	12	0	12	100%
# of studies implemented in the Dry Zone	2	1	1	100%

4.1.1 Implementation of seed demand assessment study for the Dry Zone

We completed the seed demand assessment study. The study was done in partnership with the Centre for Economic and Social Development (CESD), DAR, Michigan State University (MSU) and International Food Policy Research Institute (IFPRI). The study was undertaken in six townships of the Dry Zone, interviewing 1,383 farm households growing rice, pulses and oilseed crops. The main findings of the study were shared with seed sector stakeholders during the fourth national seed sector platform meeting in Nay Pyi Taw.

4.1.2 Establishment and facilitation of national seed sector platform

The fifth national seed sector platform meeting was organized in Nay Pyi Taw on 14 May 2019. The topic was 'Alternative seed quality assurance systems' and was attended by 99 participants (44 from the public sector, 17 from the private sector and 28 from development partners). The platform discussed three quality assurance systems: truthfully labelled seed, quality declared seed and the participatory guarantee system. There was a guest speaker from Uganda (Mr. Bonny Ogwal, ISSD Uganda) and the keynote was provided by Dr. Manish Patel, Executive Director of Incotec India, explaining about advancements in seed quality assurance and the role of the private sector. The platform concluded that, given Myanmar's seed regulatory framework and seed quality standards, the participatory guarantee system is most suitable for the intermediate seed systems of Myanmar.

The sixth seed sector platform meeting had the topic: 'Developing a national seed investment plan for Myanmar'. The meeting was held on 6 November 2019 and brought together 90 participants, 39 from the public sector, 23 from the private sector and 28 from development partners. ISSD Myanmar collaborated with the Syngenta Foundation on this platform meeting, both in the preparations and implementation. During the meeting the idea of a seed investment plan was discussed with four distinct topics: the Myanmar Seed Valley concept; private sector investments; regulatory services and a one-stop-shop; and local seed production. The Myanmar Seed Valley concept received particular attention and interest and it was decided to develop a plan and proposal for this. It should bring together a number of domestic and international seed companies producing and processing seeds, as well as providing seed related services (e.g. quality assurance, variety testing). To this end a detailed agronomic assessment was undertaken that included soil and water analyses of the envisaged location (Hlaingtet Central Farm), as well as a water needs analysis. The proposal is currently under consideration by the senior management of the Ministry.

Importantly, during the platform meetings many new collaborations were established and a better coordination took place between other seed sector projects (the Japan International Cooperation Agency (JICA), the Agricultural Development Support Project (ADSP), Syngenta Foundation, the Livelihoods and Food Security Fund/Myanma Awba Group (LIFT-AWBA), the International Finance Corporation-World Bank Group (IFC-WBG) and the LIFT/RSSD project.

4.1.3 Establishment and support of the National Seed Association

2019 saw a breakthrough for the Myanmar Seed Association (MSA) with its official registration on 9 August 2019 by the Directorate of Investment and Company Administration (DICA). The Association was officially launched at the sixth national seed sector platform meeting and discussions were held afterwards on the Association's strategic plan. A draft strategic plan was developed towards the end of 2019 and it is envisaged that in 2020 the secretariat will be established and organize a number of events.

In addition, the programme worked on the development of a new seed policy. Together with Syngenta Foundation we organized a high level seed policy review meeting on 20 June 2019 at the Grand Amara Hotel in Nay Pyi Taw. In the end the interest and enthusiasm of the MOALI policy makers focused more on the seed investment plan and the Myanmar Seed Valley concept than the existing Myanmar seed policy. The seed investment plan and Myanmar Seed Valley concept were discussed during the sixth national seed platform meeting.

4.1.4 Implementation and presentation of studies on key seed sector bottlenecks

Study on business opportunities in Myanmar's seed sector

The study on seed business opportunities in Myanmar was developed in 2018 but finally designed and published in 2019. The report highlights opportunities for domestic and international seed companies to invest in Myanmar's seed sector, especially for hybrid corn, sunflower, vegetables and potato crops. The report provides information on four aspects: laws, regulations and procedures; seed production and breeding; seed sales; and opportunities for seed related materials and services.

Quality seed trials

We completed three separate studies on quality seed trials to generate field evidence on the additional yield farmers gain in the Dry Zone by using the quality seed of improved varieties. We established a total of 144 field trials in Mandalay, Sagaing and Yezin for rice, sesame and green gram crops. The report will be finalized in 2020. The result of the study will help us to estimate the additional income generated by farmers due to the result of quality seed uptake.

4.2 EGS production

The second outcome of the ISSD Myanmar programme is the increased business performance of EGS-producing seed farms. Within the public system, DAR and DOA seed farms are responsible for EGS (breeder seed, foundation seed and registered seed production); below is a summary of achievements in 2019. Table 2 shows the key outcomes and outputs against the target indicators for component 2 in 2019.

Table 2. Key outcomes and outputs against the target indicators for component 2 in 2019

Indicator	EOP target	2018 result	2019 result	% EOP reached	
OUTCOME 2: Increased business performance of EGS producing seed farms					
# of seed farms working with new business model for EGS production	10	0	5	50%	
# of persons (male/female/youth) reached/trained with improved technology and skills in EGS production					
	Female	15	24	34	227%
	Male	15	31	20	207%
	# <35	5	20	24	480%
# of crop types covered by the EGS study	3	3	0	100%	
# of EGS business pilots implemented in DAR and DOA farms	4	0	2	50%	
# of trainings/workshops for EGS seed farm staff	8	4	3	88%	
# of DAR and DOA staff trained					
	Female	15	24	34	227%
	Male	15	31	20	207%
	# <35	5	20	24	480%

4.2.1 Piloting of alternative models for EGS seed production

Based on the EGS study recommendations in 2018, the following three new business models started implementation in 2019:

Long-term forward contracting of EGS

We started scaling long-term forward contracting of early generation seed (EGS) through a public-private partnership business model. Three domestic seed companies (Green Growth Generation seed company based in Mandalay, Greenish Sagaing seed company based in Sagaing region, and Shwe Nan Taw seed company based in Mandalay) have established long-term contracts with the DAR. The crops under the scope of the EGS contract are sunflower, chickpea, green gram, sesame and rice. This guarantees for the next five years that private seed companies will get the required volume of breeder and foundation seed (EGS) from the DAR. An extension will be possible beyond the end of the contract, in which both parties can continue research and cooperation accordingly. The contract has also a provision in which the DAR will provide the necessary technical support to the seed companies on their plant breeding activities and quality EGS production technologies on a cost-recovery basis. This business model will be helpful in solving one of the key bottlenecks in the lack of sufficient volume of EGS in the Dry Zone.

Income generating business model and increased autonomy for EGS seed farms

Two DOA seed farms (Chaug May Gyi Seed Farm, Mandalay Region and Kyaé Mone Seed Farm, Sagaing Region) were involved in piloting more autonomy and accountability to the seed farm management, with the incentive of additional investments. The farm managers of the two selected farms were allowed to make their own decisions with regards to improving farm productivity, maintenance, and skills development. The revenue from the pilot will be fully reserved and reinvested in the seed farm in the next cropping season (as a revolving fund).

The seed farm managers have developed a production and investment plan as well as a detailed budget, and the operation cost was covered by the DOA budget and irrigation facilities were provided by the programme. The pilot's ongoing activities and its results will be shared among the stakeholders by conducting a workshop to evaluate the pilot was successful and to decide whether to upscale the model to other seed farms. Although the initial result could not be evaluated in 2019, because of prolonged drought in the last rainy season, the year round performance will be evaluated before October 2020.

Digitized EGS seed demand forecasting system

We scaled up the digital EGS demand forecasting and supply system in the pulses and oil seed crops, and added sorghum, wheat, maize and potato crops. The system is available for both mobile based devices (a quality seed app) with free access to all users and a dashboard system for data management which is only accessible to registered seed producers, seed companies, public seed farms and MOALI. The scaling partnership was carried out with the RSSD project in the Delta region of Myanmar. The digital system has brought public seed farms, seed companies, seed producers and farmers in one platform in order to real-time estimate demand and supply for different seed classes. The system will be launched in 2020 for full operation in the Dry Zone, and will include the development of financial sustainability for this model.

4.2.2 Building capacity of seed farm staff on EGS production

Training workshop on EGS business development

A three day workshop was organized to share the results of the ISSD Myanmar programme on EGS business development, challenges, action plans, and process of application of the plant variety protection system in Myanmar. A total of 44 participants from public, private and NGOs seed project staff attended the workshop on 12-14 September 2019 in Yezin.

Training on quality EGS production and seed quality control to the private seed sector

Two refresher training programmes on quality EGS production and new variety characteristics were delivered to public seed farms sector experts and private seed producers on 22-23 August 2019 in Monywa township. The training courses were attended by 80 participants and covered green gram, black gram, pigeon pea and groundnut crops.

Quality EGS production manual

Our progress on synthesising various trainings delivered by the ISSD Myanmar programme, and developing them as a series of quality EGS training manuals, is now in its final stage. This includes EGS production manuals on chickpea, green gram, black gram, sunflower, groundnut, and pigeon pea. We will publish all these manuals in 2020.

4.3 Seed business development

The third planned outcome of the ISSD Myanmar programme is the increased local availability and uptake of quality seed at affordable prices for smallholder farmers. This component is coordinated by WHH and mainly focusses on strengthening the capacity of private seed producers (seed producers and seed companies) in the Sagaing and Mandalay region. In 2019 we started scaling partnership on seed business development in Bago and Nay Pyi Taw region through the DOC. In table 3, we have provided the key outcomes and outputs against the target indicators for component 3 in 2019.

Table 3: Key outcomes and outputs against the project targets for component 3 in 2019

Indicator	EOP target	2018 result	2019 result	% EOP reached	
OUTCOME 3: Increased local availability and uptake of quality seed at affordable price to smallholder farmers					
Volume of quality seed produced (MT)	3,375	482	2,016	74%	
# of persons (male/female/youth) reached/trained with improved technology and skills in seed production					
Direct	Female	16	13	81%	
	Male	170	119	70%	
	# <35	60	52	87%	
Number of new improved and well-adapted varieties used by farmers in selected townships	28	11	20	71%	
Total number of farmers reached					
Direct	Female	37,224	5,780	10,371	43%
	Male	40,326	6,262	11,414	44%
	# <35	35,673	5,597	10,021	44%
Total number of hectares of farmland reached	15,000	5,335	20,105	170%	
# of functional local seed businesses directly supported by the programme	60	62	72	120%	
Increased performance (average % increase in indicators) of local seed business in key performance areas	20	0	35	140%	
# of local seed businesses supported by partners	120	0	311	259%	
# of partners supporting local seed businesses	4	0	1	25%	
# of domestic seed companies supported by the programme	6	3	4	67%	
Increased performance (average % increase in indicators) of local seed business in key performance areas	25	0	35	140%	
# of field demonstrations established by local seed businesses and seed companies	60	13	24	62%	
# of field demonstrations organised by Dutch seed companies	6	0	3	50%	
# of joint activities between the programme and Dutch seed companies	2	1	1	50%	
# of family farms with increased productivity and/or income					
Direct	Female	37,224	5,780	10,371	43%
	Male	40,326	6,262	11,414	44%
	# <35	35,673	5,597	10,021	44%

4.3.1 Establishment of viable local seed businesses

Seed production and sales in 2019

A total of 2,016 metric tons of seed was produced, 99.6% of which was sold to farmers (table 4). This led to a total of 2,498 metric tons of quality seed production by combining the 2018 and 2019 season. The project end target was to produce 3,375 metric tons by 2020. The 2019 production figure will further increase in 2020 through scaling partnership in local seed businesses. This means we will achieve more seed production targets. A total of 6 crops and 25 improved varieties were under seed production in 2019. A total of 72 seed producers and four domestic seed companies were involved in seed production in the Sagaing and Mandalay regions.

Table 4:. Seed production and sales data for 2019 season in Sagaing and Mandalay region

Crop	Varieties	Total seed production area (acre)	Total volume of seed production (baskets)	Total volume of seed sales (baskets)
Rice	Ayar Min, Manaw Thu Kha, Paw San Bay Kyar, Paw San Yin, Shwe Manaw, Shwe Thwe Yin, Sin Thu Kha, Super Hnan Kauk, 90 days, Thai 90 days	1,127	91,959	91,626
Chickpea	CA 0224, Yezin 4, Yezin 6, Yezin 8, Yezin 11, Yezin 12, Yezin 13	219	2,509	2,509
Green gram	Yezin 11, Yezin 14	18	176	176
Sesame	Sin Yadanar 3, Sin Yadanar 14, Yezin 14	24	191	191
Groundnut	Magwe 16, Sinpadathar 11	15	325	325
Sunflower	Suryakiran (hybrid)	2	100	100
Total (baskets)		1,403	95,260	94,927
Total (metric tons)			2,016	2,009

The scaling partnership of the DOC with the ISSD Myanmar Programme

A partnership agreement was signed with the DOC in 2019. The DOC started to establish SPCs in January 2019 in Myanmar by its own efforts. However, the DOC lacked specific technical capacity and experience in the seed business development aspect of SPCs. Under the partnership, the ISSD Myanmar programme will provide a series of tailor-made training and coaching to the DOC team in Nay Pyi Taw and at the state/regional level. It is likely that this partnership will be the most important driver of the long-term sustainability of local seed business development in Myanmar.

In 2019 scaling of local seed businesses through the DOC was achieved with an additional 311 seed producers from 16 townships of Nay Pyi Taw and the Bago region of the Dry Zone (table 5). This brought in an additional 1,571 acres (636 ha) of area which is now dedicated to quality seed production. The volume of seed production and sales of DOC-supported SPCs will be documented in the 2020 season.

Table 5:. Scaling of local seed businesses through the DOC in Bago and Nay Pyi Taw region, 2019

State & region	Township	Name of Seed Producers Cooperative	No. of seed producers	Area under seed production (acres)
Nay Pyi Taw	Zay Yar Thiri	Sin Shwe Wah	10	10
Bago	Bago	Uthar Shae Saung	27	149
Bago	Kawa	Myo Set Thit	41	150
Bago	Wal	Wal	10	40
Bago	Thanatpin	Thanatpin	17	62
Bago	Daik U	Myo Set Thit	12	56
Bago	Nyaung Lay Pin	Aung Myanmar	14	90
Bago	Shwe Kyin	Shwe Kyin	17	30
Bago	Kyauk Tagar	Sein Yaung So	49	286
Bago	Taung Ngu	Shwe War	15	39
Bago	Phu	Shwe Twin Aung	11	119
Bago	Phu	Mingalar Myo Thant	50	270
Bago	Oak Twin	Oak Twin	10	79
Bago	Yetarshale	Shwe Myo Sae	10	85
Bago	Htan Tabin	Lin Yaung Chi	10	64
Bago	Kyauk Gyi	Sinthukha	8	42
Total			311	1,571

Establishment of a seed producers' cooperative unit within MOALI

The DOC, with support from the ISSD Myanmar programme, established a new seed producers' cooperative unit (SPC Unit) in Nay Pyi Taw to coordinate and provide long-term support to the SPCs in Myanmar. The DOC SPC unit aims to apply knowledge and experiences gained in its scaling partnership with the ISSD Myanmar programme to provide support to over 4,000 seed producers scattered in various states and regions of Myanmar. The SPC unit consists of seven full time staff, who had their job positions reallocated within the DOC.

To strengthen the newly established SPC unit of the DOC, we provided the following support in 2019:

- Placement of one full time senior advisor position at the SPC unit in Nay Pyi Taw. This staff member provides daily coaching to the SPC unit staff and facilitates the smooth implementation of the scaling partnership with the DOC. This position will be retained till the end of the project. By that time, we foresee that the SPC unit will be fully capable of providing business development support to the seed producers in Myanmar.
- Organization of a seven days long Training for Trainers (ToT) course on seed business development support to the seed producers' cooperative. A total of 14 staff of the DOC and the SPC unit joined in the ToT course. The course was held on 19-22 September 2019 in Nay Pyi Taw. Trainees included the SPC unit head, staff, the assistant director and staff officers from the Nay Pyi Taw, Bago, Mandalay and Sagaing regions. The ToT course concluded with a follow- up training course on module development and planning.
- Facilitation of several rounds of meetings with DOC management and SPC unit staff to develop the work plan of the SPC unit.
- Involvement in drafting the SPC management guidelines, which will become a by-law. Planning has been made to make a final version of SPC management guidelines and to have their official launch in May 2020.

Training course organized by the SPC unit of the DOC in Bago and Nay Pyi Taw

After the successful ToT course, trained SPC unit staff from the DOC organized two training courses on seed business management for the seed producers in Bago and Nay Pyi Taw region in October and November 2019. A total of 96 seed producers from ten townships gained practical knowledge on quality seed production and seed business development.

Regional seed fair and seed seminar to increase the quality seed uptake

A regional seed fair and seed seminar was organized in Monywa township of Sagaing region on 22 October 2019 by WHH with the support of the Sagaing Regional Agriculture Department. It was jointly inaugurated by U Kan Zar Hmone, representing the Sagaing Region Government; the Minister for Agriculture, Dr. Moe Kyaw Thu; and the Minister for Immigration and Manpower, Daw Amar Kyi. The event was joined by seed producers and seed companies from 20 different townships of the Sagaing region. A total of 435 farmers visited the seed fair. The seed seminar focused on solving problems and priority actions to increase the uptake of good quality seed through awareness and market strengthening. The seed fair was publicised in national newspapers and television channels.

Strengthening of seed producers in their business operations

Seven seed producer associations and their 72 members received a series of tailor-made capacity building training sessions, field coaching and a learning visit. These resulted in significant improvements in the business capacity of the seed producers, increased production, and increased sales of quality seed sales (exceeding the annual target). The capacity building activities conducted in 2019 can be summarized as follows:

- three trainings on quality seed producing and seed quality control training, focusing on groundnut, pigeon pea, black gram and green gram crops
- seven trainings on the establishment of SPCs
- two trainings on integrated pest management
- three trainings on seed business management
- three trainings on seed germination and moisture testing
- two trainings on seed business management.

Establishment of field demonstrations with new varieties

A total of 23 field demonstrations were conducted by seed producers and domestic seed companies to create awareness and increase uptake of quality seed by farmers. A total of 37 new improved varieties of crops (rice,

chickpea, sunflower, sesame, groundnut, green gram, and sunflower) were demonstrated in the field. A total of 1,266 farmers visited the field demos.

Partnership with domestic seed companies

In addition to the ongoing partnership with three domestic seed companies, we established partnership with Tropical Bio Limited (TBL). TBL is going to focus on hybrid sunflower 'Suryakiran' F1 seed production in the Dry Zone of Myanmar, planning to reach 50,000 acres of seed production with a yield of 10,000 metric tons by 2022. In 2019, TBL selected 50 seed producers under the contract model and started a pilot of scale seed production. If this partnership is successful, it will have the biggest impact in meeting the demand for sunflower seed, creating more income for farmers and reducing the import of food oil into Myanmar.

Partnership with Dutch seed companies

We established a partnership with two additional seed companies from the Netherlands (Bejo and Solynta), to start hybrid potato variety demonstrations in the Dry Zone and Shan State, and to assess local production suitability and market/consumer preferences in Myanmar. Variety trials will start in 2020. We have already an ongoing partnership with the East-West Seed company in hybrid bitter gourd and yard-long bean seed production. In 2019, East-West organized a field day in Nay Pyi Taw which 70 farmers joined to learn about new varieties and hybrid seed production technologies.

Uptake of quality seed by farmers

We reached an additional 21,785 farmers directly in 2019 through quality seed sales (20,084 farmers), a seed fair (435 farmers) and field demos (1,266 farmers). Calculation of the number of farmers reached was based on the seed sales volume for each crop, the seeding rate used by farmers, and the average crop area of a family farm. The use of quality seed of improved varieties covered a total of 20,105 ha of crop land.

4.4 Programme management and coordination

4.4.1 Facilitation of project coordination, planning and field monitoring

The ISSD programme organised three quarterly programme review and planning meetings, and one annual review and planning meeting, with all programme consortium partners and staff. The activities contributed to increased coordination, communication and problem solving in the implementation of programme activities. These quarterly and annual meetings will continue on a regular basis.

5 Sustainability

In the 2018 report, we proposed five priority areas for seed sector development in the Dry Zone important for programme sustainability. In this report, we briefly summarise progress in each of the priority areas:

Improved private sector role and policy advocacy: The achievements made in 2019 included the legal registration of the MSA as a representative of the private seed sector in Myanmar. ISSD Myanmar provides secretariat services and capacity development to the MSA. An MSA five-year strategic action plan is being finalized. In 2020, the MSA will emerge as an active association that can represent and provide quality services to its members.

Improved seed sector coordination: The continuation of biannual national seed sector platform meetings is important. Already the seed platform meetings are fully owned by MOALI, and appreciated by seed sector stakeholders (public, private and development partners). As the MSA is now legally registered, we will work in 2020 to alternate the organisation of the platform meetings between the DOA-Seed Division and the MSA.

Alternative business models for EGS production: With the DAR, we have completed a long-term forward contracting agreement for EGS supply with three domestic seed companies. This will allow private seed companies to make their business plans for up to five years as there is a guaranteed volume of EGS provided by the DAR combined with technical training and coaching. In addition, we piloted an alternative seed farm development model at two DOA farms, though production was heavily affected by extreme rainfall. In 2020, we will further focus on this more independent seed farm development model with the DOA.

Digital EGS seed demand and forecasting systems: We scaled up the mobile based technology for Dry Zone crops in 2019. The system was piloted in the Delta region for rice, funded by LIFT. The digital system has brought public seed farms, seed companies, seed producers and farmers together in one platform in order to real-time estimate demand and supply for different varieties and seed classes. The system will be launched in 2020 for the Dry Zone, and will include development of a financial sustainability model.

Economy of scale of local seed business: We worked with the DOC to establish a separate SPC Unit, which provides legal registration and long-term institutional support to thousands of informal small-scale seed producers. The DOC has already put six fulltime staff in the new SPC unit and ISSD Myanmar seconded one fulltime senior advisor to support the SPC unit staff. The SPC management guideline (by-law) will be finalized in May 2020.

Seed regulatory reform: The ISSD Myanmar programme continues to partner with the IFC/World Bank's 'Inputs Reform Project' in 2020 as well. We will further support the development of a risk-based (and farmers' complaint-based) seed quality assurance system.

Inclusiveness: Throughout the programme much attention is paid to inclusive business development, targeting small-scale seed producers and larger seed companies as well as youth and women.

Additional priority areas

The concept of 'Myanmar Dry Zone Seed Valley' emerged during 2019. The Myanmar Seed Valley in the Dry Zone aims at establishing a hub for a multitude of seed companies to produce and process seed, as well as test and demonstrate new varieties. In 2019 the feasibility of a Seed Valley in Hlaingtet Central Farm was investigated. Based on the positive results of the feasibility study the initiative will be presented to a wide range of seed companies in Q2 2020. If sufficient companies show interest in investing in the Seed Valley, ISSD Myanmar can facilitate the implementation process.

6 Risks

Climate change: The main risks for project implementation centre around the volatile climatic conditions of the Dry Zone. Due to climatic change there are increased incidences of droughts *and* floods that affect both crop and seed production.

Volatile export market for pulses: The Myanmar Dry Zone is the main production hub for pulses. Many pulses are grown both for commercial export as well as domestic consumption. But regularly changing import restrictions in the main export market of India are reducing incentives to invest in quality seed, especially black gram and pigeon pea.

7 Finance

Presented in a separate document.

8 Lessons learned

We learned that the integrated nature of the project is well-appreciated by the Myanmar government and private sector. Working on both systemic bottlenecks in the enabling environment (such as quality EGS provision and improving the seed business climate) and training activities on the ground (supporting seed farms, seed producers and seed companies), was of considerable help in developing a more vibrant public-private seed sector. Strong relations between government experts, seed farms and seed producers also helped significantly in improving quality seed production (the volume of seed), seed quality (genetic and physical purity / certification) and the variety portfolio (ensuring a greater choice for farmers and the introduction of new varieties).

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