THE CASE OF CHAMPION FARMER SEEDS COOPERATIVE, ZIMBABWE

Documenting lessons learned establishing a Farmer Seed Enterprise (FSE)

DISCUSSION PAPER

OXFAM

Cover photo
Tsungai Bwerazuva/CTDT

Photo pages 1-7 and 10-50
Champion Farmer Seeds&CTDT
Photo pages 8-9
Hoang Huy/Oxfam Novib

Design
Sazza

Contact
Connie Formson, Specialist 'Farmer Seed Enterprises',
connie.formson@oxfamnovib.nl

Disclaimer
© Oxfam Novib July 2019
This publication is copyrighted but the text may be used free of charge for the purposes of advocacy, campaigning, education, and research, provided that the source is acknowledged in full. The copyright holder requests that all such use be registered with them for impact assessment purposes. For copying in any other circumstances, or for re-use in other publications, or for translation or adaptation, permission must be secured and a fee may be charged. Email sdhs@oxfamnovib.nl for more information.

CONTENTS

OXFAM

1. INTRODUCTION

Seed quality determines the level of agricultural productivity. It impacts on rural livelihoods, and therefore resilience – key elements for attaining food and nutrition security and reducing poverty in developing countries.[1] Improved varieties of many crops have been developed by the public and private sector but remain inaccessible to smallholder farmers due to poorly developed seed systems.[2] Much of the seed available to smallholder farmers is not well adapted to the highly diverse agro-ecological systems in which they are located. Many smallholders farmers in developing countries find it a major challenge to access affordable and quality[3] seeds of diverse crop varieties. Seed insecurity poses a significant threat to their food security and livelihoods. Smallholder farmer's lack of access to adequate quantities of improved, adapted and appropriate quality seed and planting material is a key bottleneck in global efforts to reduce hunger and poverty.[4]

Smallholder farmers obtain seeds not only from formal seed systems, but also from farmers' seed systems which remain an important seed source for smallholder farmers in marginal agro-ecological regions. Farmers' seed systems provide 80 percent of the seeds that smallholder farmers use.[5] However, shortcomings of farmers'[6] seed systems – in terms of useful traits, purity, seed health and germination rates – can result in decreased seed quality.

1 FAO (2010), The Second State of the World of Plant Genetic Resources for Food and Agriculture, Rome: FAO
2 MacRoberts, J. Supporting the development of small to medium scale seed enterprises in sub-Saharan Africa.
3 Quality seed, determined by its biological and physical qualities, determines how crop develop and adapt to local ecosystems, pests and diseases (Almekinders & Louwaars, 1999).
4 Globally one in nine people in the world today (815 million) are undernourished (Source: https://www.un.org/sustainabledevelopment/hunger/).
5 See Sperling, L. and S. McGuire, 2010. Understanding and strengthening farmer seed markets. Experimental Agriculture. 46 (2), 119–136.
6 See for definition of farmers' seeds: Argumedo, A. and R. Salazar, 2012. Challenges in Commercializing Farmers' Seeds: A potential approach for small farmers in developing countries. A discussion paper commissioned by Oxfam Novib for the seeds expert consultation, 12-13 November 2012, Vietnam.

The formal seed system[7] is an important source of improved varieties, but fails to supply seeds adapted to the needs of smallholder farmers.[8] The public sector is unable to respond to their needs due to capacity constraints and reduced investments in plant breeding and seed production. The private sector focuses mainly on high-value cash crops, in particular hybrid varieties. Significant research and development takes place in the formal sector, but investments in traditional crops and varieties – and the farmers' seed system in general – have been neglected. The formal seed system is highly regulated in an effort to ensure seed quality and traceability. In contrast, the farmers' seed system is unregulated and disregarded. Together, these factors limit seed availability and progress towards food and nutrition security in many developing countries.[9]

Within the SD=HS program (see page 7), farmer seed enterprises (FSEs) are an effort to: i) develop market-based models that make available appropriate, quality seed to smallholder farmers in mainly marginal areas; ii) broaden the genetic base of crops; and iii) strengthen the role of farmers in the management of crop diversity under changing socio-economic and agro-ecological conditions. A farmer seed enterprise aims to fill the gap left by both the formal and farmer seed systems. Within the program, FSEs serve four inter-related objectives:

1. Help provide seeds and varieties of crops not addressed by the formal sector to resource-poor families in less favourable agro-ecological conditions;
2. Support smallholder farmers to access wider

[7] Maharjan, K. and N. Khanal, 2015. A Framework for Understanding Sustainability of Community-Based Seed Production System. In: FAO & ICRISAT. 2015. Community Seed Production, by C. Ojiewo, S. Kugbei, Z. Bishaw and J. Rubyogo (eds.), Workshop Proceedings, 9-11 December 2013. Rome: FAO & Addis Ababa: ICRISAT. Available at: http://www.fao.org/3/a-i4553e.pdf

[8] Maharjan, K. and N. Khanal, 2015. A Framework for Understanding Sustainability of Community-Based Seed Production System. In: FAO & ICRISAT. 2015. Community Seed Production, by C. Ojiewo, S. Kugbei, Z. Bishaw and J. Rubyogo (eds.), Workshop Proceedings, 9-11 December 2013. Rome: FAO & Addis Ababa: ICRISAT. Available at: http://www.fao.org/3/a-i4553e.pdf

[9] Neate, P. and R. Guei, 2010. Promoting the Growth and Development of Small-holder Seed Enterprises for Food Security Crops: Best Practices and Options for Decision Making. Rome: FAO. Available at: http://www.fao.org/docrep/013/i1839e/i1839e00.pdf

OXFAM

and commercial markets;
3. Diffuse seeds of diverse crop varieties to broaden the genetic base of staple crops, improving food and nutrition security and smallholder farmers' incomes and livelihood opportunities.
4. Support strengthening of farmer seed systems; and
5. Develop commercially viable business models for farmer seed enterprises.

SD=HS has worked globally to empower farmers to maintain, improve and increase their crop diversity, and exercise their right to use, save and exchange seeds. As the climate changes, increasing levels of poverty, hunger and food and nutrition insecurity are necessitating integrated, multi-sectoral responses. In the countries[10] in which SD=HS works, the effects of climate change are a reality: erratic weather patterns, with severe droughts or flooding, are the "new normal". The decision to adopt a market-based approach is premised on assumptions regarding where smallholder farmers source seed, the efficiency of seed markets, and smallholder farmers' role in managing plant genetic resources for food and nutrition security. Based on our experiences with seed clubs in the Mekong Delta in Vietnam (see page 8), we hypothesize that farmers have the potential to meet the production and quality standards required to enter seed markets – but their capacity, especially in business management, needs to be strengthened.[11] Developing financially sustainable FSEs is strategically related to other main SD=HS activities (see Annex 1).

This discussion paper presents the lessons learned in establishing a farmer seed enterprise,[12] the Champion Farmer Seeds Cooperative in Zimbabwe[13] between 2016 and 2018, during phase I[14] of the SD=HS program. We reflect on the assumptions made at the start of the program, and how the experience can guide us as we develop different models of farmer seed enterprises in phase 2. This paper is based on both primary and secondary data. Primary data included focus group discussions with farmers, stakeholder meetings and discussions with programming staff. Secondary data included program documents, reports, journal articles and discussion/working papers. A limitation of this paper is that the lessons can only be indicative at best due to the relatively brief, two-year timeframe from which they are drawn.

Section 2 of this paper presents the Champion Farmer Seeds model. Section 3 shares experiences and results from establishing Champion Farmer Seeds, addressing the highly interrelated issues of seed production and quality assurance. It discusses experiences in mobilizing growers, accessing planting material, and empowering women and youth. Marketing experiences are shared in section 4, while section 5 reflects on the financial sustainability of Champion Farmer Seeds. Challenges experienced are addressed in section 6. The paper concludes with key lessons and recommendations in section 7.

11 Towards a business model: Oxfam Novib's work on Seeds and Food Security.

12 Within SD=HS a farmer seed enterprise (FSE) is any seed production and marketing cooperative/entity/group/facility that produces and markets (or facilitates individual smallholder farmers to produce and market) high quality seeds of crop varieties adapted to the needs of indigenous people and smallholder farmers, in particular in remote areas experiencing adverse climatic conditions. FSEs are located in farming communities, making them easily accessible to smallholder farmers, and effectively and efficiently distribute quality seeds of improved and local varieties of major food security crops.

13 Officially launched in 2016, the FSE had experienced two years of production and sales of seeds at the time of writing. The first years of the SD=HS program (2014 – 2015) were dedicated to conceptualization, design and establishment of the FSE, including an intensive process of selecting in which country to develop the FSE: a six-month exercise assessed Vietnam, Myanmar, Peru and Zimbabwe as possible countries. Although two FSEs were initially planned, due to budget cuts the FSE concept was developed only in Zimbabwe.

14 Covers the period April 2013 to March 2019.

BACKGROUND

THE SOWING DIVERSITY = HARVESTING SECURITY PROGRAM

Sowing Diversity = Harvesting Security (SD=HS) is a five-year global program geared towards empowering indigenous peoples and smallholder farmers to uphold, strengthen and mainstream the rights and technical capacities to manage their biodiversity for food and nutrition security in the context of climate change adaptation. The program addresses the interconnectedness of food systems at global and local levels, and the active participation of the poor in achieving inclusive policy governance and exercising Farmers' Rights and the right to food. It sees the knowledge and experiences of indigenous peoples and smallholder farmers as decisive elements in the global response to climate change.

SD=HS was launched in 2014. It builds on Oxfam's 10 years of experience in global programs on sustainable livelihoods; the Biodiversity Fund, the three-year IFAD-Oxfam program; and the diverse experiences of its partners in supporting farmers' seed systems worldwide. The design of the SD=HS program also includes lessons drawn from the review of the rich and diverse experiences of agro-biodiversity programs worldwide. Currently, the SD=HS program is active in five countries (Lao PDR, Myanmar, Peru, Vietnam and Zimbabwe), targeting 150,000 households of indigenous peoples and smallholder farmers, of which at least 50 percent are women.

The SD=HS program is implemented through an integrated four pillar approach:
Pillar 1 – Scaling up models;
Pillar 2 – Farmer seed enterprises to enhance the seed security and livelihoods of indigenous peoples and smallholder farmers;
Pillar 3 – NUS (neglected and underutilized species for food and nutrition), women and nutrition; and
Pillar 4 – Governance and knowledge systems.

Extracted in part from: Oxfam et al. 2017.The power to exercise choice: Implementing Farmers' Rights to eradicate poverty and adapt to climate change. SD=HS Briefing Note no.3. The Hague: Oxfam Novib.

CASE STUDY

MEKONG DELTA SEED CLUBS AS COMMUNITY-BASED SEED PRODUCERS

Efforts to build the capacity of smallholder farmers in participatory plant breeding and seed production in Vietnam's Mekong Delta resulted in the establishment of seed clubs as informal seed producers. At the start of the program, in 2001, groups of 10-30 farmers were trained in participatory plant breeding, followed up with various courses on seed production over the years until 2014, using the farmer field school approach.

In An Giang province, 216 seed clubs were established and 15,115 farmers trained. Responding to local demand for affordable good quality seed, the seed clubs began to produce and supply rice seed within their communities. At least one seed club operates in each village of An Giang province's 11 districts. Over the years the capacity of the seed clubs to supply quality seeds has significantly increased: in 2014 they met 90 percent of local demand, up from 30 percent 10 years earlier.

For most seed clubs, seed production and distribution is decentralized and informal. However, in 2014, 29 seed clubs became formal seed enterprises operating at the provincial level. These 29 seed clubs contract their members as seed growers, providing guaranteed incomes to member farmers. The seed clubs produce new farmer varieties, developed through participatory plant breeding, and improved varieties. Seeds produced and distributed are primarily uncertified, with quality guaranteed by peer quality assurance. This has helped keep production costs low, making seed affordable to local farmers.

These experiences in the Mekong Delta indicate that smallholder farmers are capable of quality seed production at a commercial scale that meets local demand.

Sources

1. Tin, H.Q., Nguyen, H.D., Thanh, H.H., Tam, P.T., Dang, B.V. and Giang, N.T.T., 2016. Impacts of community-based seed production and supply towards sustainable agricultural production in An Giang province. Can Tho University Journal of Science. Vol 3: 120-125.
2. Huynh Quang Tin , Nguyen Hong Cuc , Tran Thanh Be , Normita Ignacio & Trygve Berg (2011) Impacts of Seed Clubs in Ensuring Local Seed Systems in the Mekong Delta,Vietnam, Journal of Sustainable Agriculture, 35:8, 840-854, DOI: 10.1080/10440046.2011.611746.

OXFAM


NC: LAI TẠO
DÒNG 1.2
F4
NC: LAI TẠO
DÒNG 1.1
F4
CH21 ×GL20

2. CHAMPION FARMER SEEDS: A TESTED MODEL

Zimbabwe's well-developed and diversified agricultural sector has historically been the mainstay of the economy, providing employment for approximately 60-70 percent of the population.[15] Zimbabwe's agricultural land is divided into five agro-ecological regions (see Figure 1).[16] Region I lies at the highest altitudes and receives the highest rainfall, over 1000 mm annually. Region II, further divided into 2a and 2b, is prime agricultural land situated in the central plateau around Harare, the capital city. Annual rainfall between 800 and 1000 mm makes this region suitable for intensive crop production, which in normal cropping seasons provides about 90 percent of the country's annual crop output. Most large commercial farmers are located in these two regions.

Regions III and IV are characterized by semi-arid and arid conditions respectively. Receiving between 650 and 800 mm rainfall per year, Region III is best suited for short-season and drought-tolerant crops, such as sorghum and millet, and dry land legumes such as sugar beans. With annual rainfall between 450 and 650 mm, Region IV is less suited for crop production. Region V receives erratic annual rainfall of less than 450 mm. Sixty-seven percent of Zimbabweans live in rural areas, with 37 percent of these being communal farmers.[17] Women make up 51.9

[15] UNCT and GoZ. 2010. *Country Analysis Report for Zimbabwe.* UN. Harare.
[16] FAO. 2009. The Zimbabwe Country Report on the State of Plant Genetic Resources for Food and Agriculture (1996-2008).
[17] Zimstat, 2012.

percent of Zimbabwe's smallholder communal farmers living in the drought-prone regions IV and V on communal land with sandy soils that receive less than 650mm annual rainfall on average.

Maize, beans, soya beans and sorghum are the main cereal and legume crops for food security in Zimbabwe.[18] Maize is the most important, accounting for 90 percent of the seed sales of these four crops. An estimated 1.3 to 1.9 million hectares of maize is cultivated annually, compared to 400,000 hectares of sorghum and 160,000 of pearl millet.[19] Demand for hybrid maize seeds in Zimbabwe has traditionally been widespread, as for many years only hybrid varieties were allowed on the market. However, the varieties available on the market are mostly suitable for higher-rainfall regions I and II than the drier regions where most smallholder farmers are located. A key objective of Champion Farmer Seeds is to provide smallholder farmers with access to drought-tolerant and early-maturing maize (hybrid and OPV) varieties and small grains, better adapted to region III and IV conditions, alongside improving crop diversity.

The seed sector in Zimbabwe is relatively well developed. The private seed sector is vibrant. Breeder and foundation seed of registered varieties is normally available. However, quality and quantity issues posed challenges for establishing the farmer seed enterprise, as discussed in section 3.3 below. Formal and farmers' seed systems co-exist. Prior to the land reform program in 2000, Zimbabwe had a world-class formal seed sector and was a major net-exporter of high-quality maize seed. Among developing countries, Zimbabwe has one of the strongest capacities to regulate and ensure high standards of commercial seed. This is based on a well-elaborated seed policy framework underpinned by good national agricultural extension services, known as Agritex, which provide overall technical support to farmers. A planned restructuring of Agritex to reduce the number of extension workers in regions IV and V may have negative future implications for Champion Farmer Seeds.

Seed sector policy, law and regulations in Zimbabwe are anchored in a formal seed

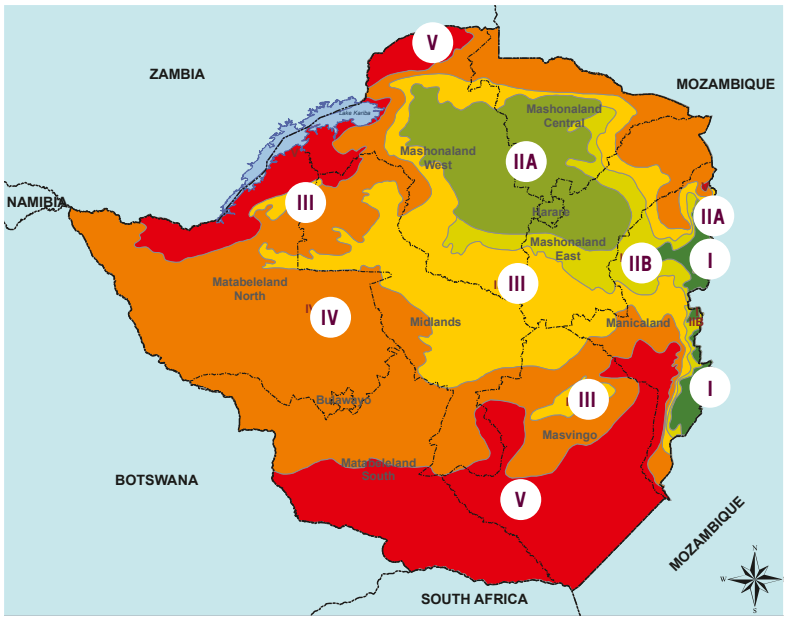
[18] Edward Mabaya, Claid Mujaju, Patience Nyakanda, and Mainza Mugoya. 2017. *Zimbabwe Brief 2017 - The African Seed Access Index*. Available at:www.tasai.org/reports

[19] FSE feasibility study (2015).

OXFAM

FIGURE 1

THE 5 AGRO-ECOLOGICAL REGIONS IN ZIMBABWE



NATURAL FARMING REGIONS

Legend

- **I** Specialised & Diversified Farming Region (>1000 mm)
- **IIA** Intensive Farming Region (750 - 1000 mm)
- **IIB** Intensive Farming Region (750 - 1000 mm)
- **III** Semi-Intensive Farming Region (650 - 800 mm)
- **IV** Semi-Extensive Farming Region (450 - 650 mm)
- **V** Extensive Farming Region (<650 mm)

Source: UN Office for the Coordination of Humanitarian Affairs

system that reflects the country's history of promoting maize production by development and registration of hybrid maize varieties. According to the law, there are two classes of seed in Zimbabwe – certified seed and standard grade seed – and seed certification is mandatory for eight crops with "commercial importance, namely maize, soya bean, tobacco, cotton, wheat, barley, oats and potatoes. For these crops, it is illegal to sell standard grade seed".[20] Seed production is governed by two main acts: i) the Seeds Act (Chapter 19:13) and its enabling regulations – Seed Regulations (1971) and Seed (Certification Scheme) Notice 2000; and ii) the Plant Breeders' Rights Act (Chapter 18:26, 1979). The Seed Act, developed in 1965, emphasises monitoring production and marketing of seed including the rules, procedures and standards for seed certification, seed testing and selling. The government – through the Seed Services Department within the Ministry of Agriculture, Mechanization, and Irrigation Development – is the sole certifying authority of all seed before release for commercial use.

Establishing Champion Farmer Seeds

Champion Farmer Seeds was established in a participatory and consultative[21] process informed by a scoping[22] study, a production study and a market study. A five-year[23] timeframe was planned (see Figure 2), though delays in implementation resulted in two years of production instead of the planned three years. [24]

[20] Extracted from Mujaju, C. 2010. Zimbabwe Seed Sector Baseline Study/survey. Harare.

[21] A consultation process with diverse seed sector stakeholders including government, research and private sector institutions.

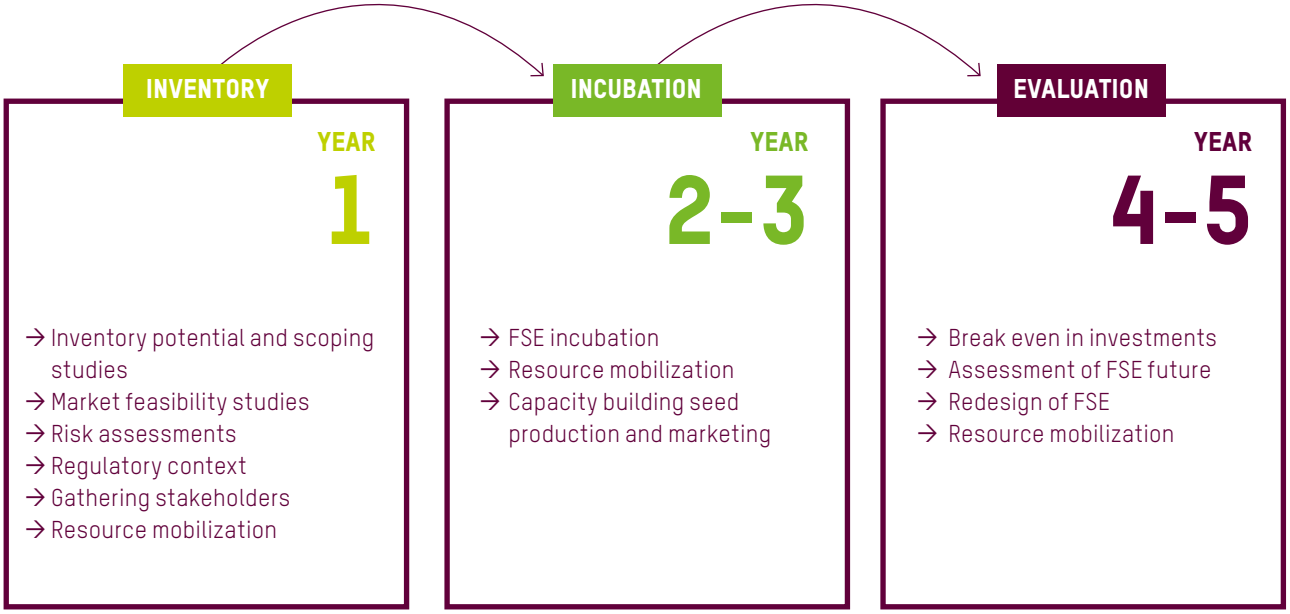
[22] Scoping studies were also carried out in Peru, Vietnam and Myanmar.

[23] Years 1 to 3 were primarily about conducting an inventory at country level to determine the feasibility and model of the FSE. Incubation was also planned in the same timeframe.

[24] Zimbabwe Super Seeds (ZSS), a similar model to Champion Farmer Seeds , has received more than six years of grant support as part of a multi-country project funded by the Swiss Development Cooperation that started in July 2010 and will end in December 2019. Like Champion Farmer Seeds, ZSS produces early-maturing, drought-tolerant varieties of maize and selected small grains. ZSS has increased seed production from 26 MT to 100 MT in six years, while Champion Farmer Seeds produced 141 MT in its first year. This suggests the potential for financial viability with sound management and investment. A significant difference between the two organizations is their geographic spread: ZSS growers are concentrated in one area, while Champion Farmer Seeds growers are spread across five districts, increasing transport costs and the challenge of supporting growers throughout the cropping cycle. Greater cost efficiency can be obtained by selecting growers that are geographically closer to each other.

FIGURE 2

STEPS TO DEVELOP FARMER SEED ENTERPRISE UNDER SD=HS PHASE 1



Source: Towards a business model: Oxfam Novib's work on Seeds and Food Security [25]

Seed multiplication[26] can be organized in various ways, with different levels of centralization and forms of ownership (see Annex 2). Production of breeder seed and foundation seed is centralized to ensure quality control, but for the later bulking of certified seed, options range from the formal and centralized to more decentralized, informal or semi-formal approaches.

The Champion Farmer Seeds model is centralized and formal in nature. In Zimbabwe, commercial seed production is allowed only by officially licensed companies with proven seed processing and storage capacity. The policy and regulatory framework prohibits informal seed growers from producing and selling seed commercially. Farmers are, however, free to use, exchange and sell seed within their community on a non-commercial basis. Certified seed production by smallholder farmers in Zimbabwe is therefore possible only through contracts with a registered seed company. It was consequently necessary to establish Champion Farmer Seeds as a farmers' cooperative, made up of district-level associations, and governed by an advisory board.[27] A management team is responsible for technical and business operations (see section 6.1 below).

Champion Farmer Seeds was established in 2016 and formally launched in September 2017, since when it has produced and marketed certified seed (see section 3.1). Seed processing, packaging and storage is centralized, while production is mainly outsourced to farmer groups and some individual farmers (see Figure 3). Champion Farmer Seeds operates in five districts: Mudzi, Mutoko, Murewa, Uzumba Maramba Pfungwe (UMP) and Tsholotsho. Within each district, farmer associations have elected management committees made up of a chairperson, treasurer and secretary and their respective deputies. The district association chairpersons, elected annually, also represent the farmers on the Board of Champion Farmer Seeds.

[25] Accessible at: https://www.sdhsprogram.org/assets/wbb-publications/361/2.%20Towards%20a%20Business%20Model%20FSE%20of%20the%20SD=HS%2023%20June%202016%20final.pdf

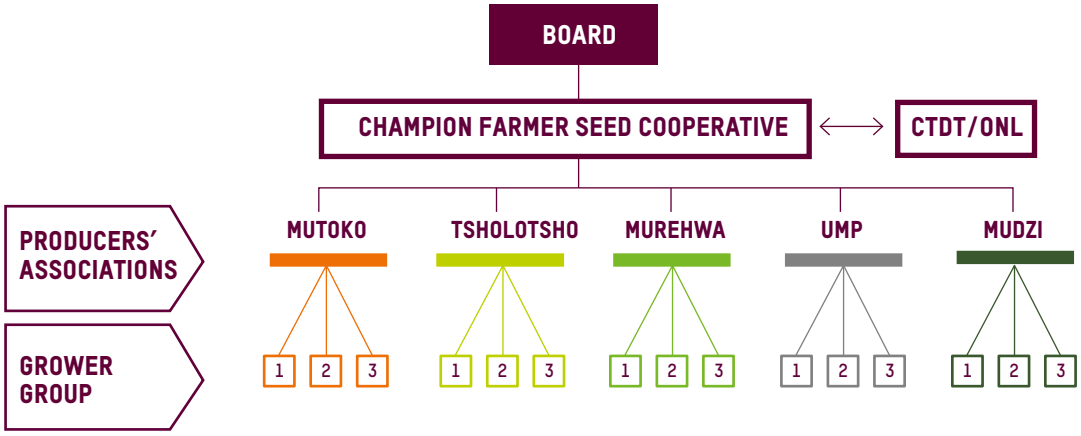
[26] "Generally existing seed classes for certified seed production starts from breeder's seed, then foundation seed, and finally certified seed which is the end product. Seed quantities increase as you move from breeder's seed though to certified seed." Extracted from Mujaju, C. 2010. Zimbabwe Seed Sector Baseline Study/survey. Harare.

[27] The advisory board consists of nine members: the chairperson (female), deputy chairperson (male), board secretary (male), a board member (male) and the five district association chairpersons (one female, making a total of seven males and two females). The non-grower members are technocrats from the agricultural industry skilled in marketing, legislative issues, leadership and seed production.

OXFAM

FIGURE 3

CHAMPION FARMER SEEDS COORPERATIVE ORGANIZATIONAL STRUCTURE



Source: Champion Farmer Seeds Business Plan (2015)

The cooperative's crop portfolio is intended to deliver diverse, good quality, affordable and appropriate seed for smallholder farmers, especially those in marginal areas who have insufficient purchasing power to be of interest to the formal seed sector. As a social enterprise, the FSE has to meet its development objectives (see section 1.0 above) and at the same time be financially sustainable – it can achieve its development agenda only if it is competitive and profitable.

The feasibility study and stakeholder consultations recommended inclusion of hybrid maize in the FSE's crop portfolio because of the crop's importance in Zimbabwe. High yields and the popular preference for maize as a staple food make hybrid maize especially attractive to smallholder farmers in Zimbabwe – it is the only food crop for which smallholder farmers depend on the formal seed sector; genetic uniformity is high, and the role of farmers as plant genetic resource managers has been lost. The FSE aimed to fill a gap in the market with hybrid and OPV maize varieties that are high-yielding, drought-tolerant and early-to medium maturing. The cooperative has full rights to the parental lines of the hybrid varieties. Importantly for financial sustainability, hybrid maize has a higher profit margin than small grains and legumes.

Small grains – such as sorghum, pearl millet and finger millet – and legumes were identified as important for food and nutrition security among smallholder farmers in Zimbabwe. Groundnuts in particular were identified to be in high demand with potentially high profit margins. Market demand for seeds of small grains is currently low because smallholder farmers are used to retaining seed of the varieties they cultivate. The small grains are included in the FSE's portfolio to improve the quality of seeds over farm-saved seeds. See section 3 for a more in-depth discussion of the FSE's crop portfolio in the 2016/17 and 2017/18 seasons.

Institutions in the formal sector are important for the FSE's success. As discussed, the Seed Services Unit implements the seed law and regulations in Zimbabwe. The Crop Breeding Institute (CBI) is the national research institute responsible for developing improved varieties of all crops. The stations of the international research institutions CIMMYT, ICRISAT and CIAT

TABLE 1

ROLE OF KEY PLAYERS IN ZIMBABWE'S FORMAL SEED SECTOR

Research and breeding	DRSS; CBI; ZTS SIRDC; MNCs; SME seed companies; universities (University of Zimbabwe, Midlands State University, Chinhoyi University of Technology, Africa University)
Variety release and regulation	Seed Services (National Certifying Authority)
Breeders and foundation seed production	CBI; ZTS SIRDC; MNCs; seed companies
Seed production and processing	Seed companies; MNCs; contract farming companies
Education, training, and extension	Seed companies; government extension agents; NGOs; Seed Services
Distribution and sales	ZSTA; Private sector seed merchants; rural agro dealers; NGOs; government

AFSTA – African Seed Trade Association; **CBI** – Crop Breeding Institute; **CIAT** – International Centre for Tropical Agriculture; **CIMMYT** – International Maize and Wheat Improvement Centre; **COMESA** – Common Market for Eastern and Southern Africa; **DRSS** – Department of Research and Specialist Services; **ICRISAT** – International Centre for Research in the Semi Arid Tropics; **ISTA** – International Seed Testing Association; **MNC** – multinational corporation; **SME** – small or medium-sized enterprise; **UPOV** – International Union for the Protection of New Plant Varieties; **ZSTA** – Zimbabwe Seed Trade Association**; ZTS SIRDC** – Zimbabwe Technological Services Scientific Industrial Research and Development Centre.

Extracted from: Edward Mabaya, Claid Mujaju, Patience Nyakanda, and Mainza Mugoya. 2017. Zimbabwe Brief 2017 - The African Seed Access Index. Available at: www.tasai.org/reports

are key sources of germplasm (see section 3.3); Zimbabwe is the home of the SADC regional headquarters of CIMMYT and ICRISAT. The Zimbabwe Seed Trade Association (ZSTA) coordinates seed companies and facilitates interface with the government. Through Seed Services and ZSTA, Zimbabwe's seed industry participates in regional and international associations and technical bodies such as ISTA, AFSTA, UPOV and OECD.[28] Table 1 below lists other key institutions in Zimbabwe's formal seed sector.

It is important for food security that policies and laws support both commercial supply in the formal seed system and quality and availability in farmers' seed systems.[29] Section 6 (4) of the Seed Regulations [Act 40/65] provides an opportunity in Zimbabwe. It deals with the production and marketing of "standard grade" seed – equivalent to "quality declared seed"-"a class of seed that only meets the minimum germination and purity requirements stipulated in the Zimbabwe Seeds Regulations".[30] Field inspections for standard grade seed are not mandatory, so genetic purity is not guaranteed. This is why Seed Services discourages the production and sale of this class of seed in favour of certified seed, for which germination standards and genetic purity can be assured through field inspection. Nonetheless, the Seeds Regulations 1971 clearly provide for selling and testing standards for standard grade seed, and preliminary discussions with Seed Services concluded that the FSE could apply to produce and market standard grade seed.

The goal of an FSE in SD=HS is to make accessible good quality seed of high genetic purity. This implies quality controls that are supportive of farmer seed systems. It is unclear whether unregistered farmer varieties can be diffused as standard grade seed, though indications are that the sale of unregistered varieties is possible if the varieties are known and there are verifiable technical descriptors. If so, introducing sound quality control measures would present opportunities to diffuse farmer varieties under this brand. In Zimbabwe this would require active policy engagement alongside sensitization and trust building. It is a direction worth exploring in Phase 2 of SD=HS.

[28] Edward Mabaya, Claid Mujaju, Patience Nyakanda, and Mainza Mugoya. 2017. *Zimbabwe Brief 2017 - The African Seed Access Index*. Available at: www.tasai.org/reports

[29] Niels Louwars.20xx. Seed systems and PGRFA

[30] Mujaju, C.2010.Zimbabwe Seed Sector Baseline Study/survey. Harare

OXFAM

3. SEED PRODUCTION AND QUALITY

3.1 SEED PRODUCTION AND CROP PORTFOLIO

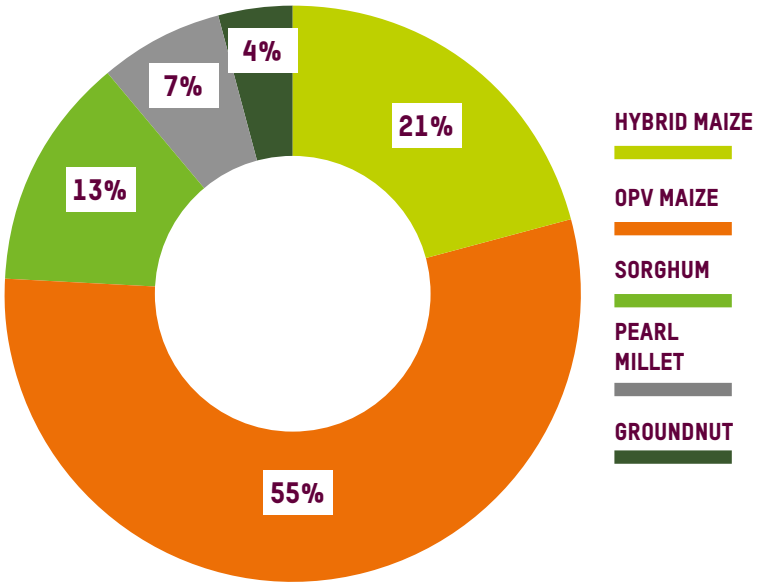
In its first season, 2016/17,[31] Champion Farmer Seeds produced seeds of maize (OPVs and hybrids), groundnut, pearl millet and sorghum (see Figure 4). A total of 72 ha was cultivated and 141 MT of seeds were produced (see Table 1). As shown in Table 2 and Figure 4, maize (hybrid and OPV) collectively accounted for 76 percent (112.7 MT) of seeds produced; sorghum for 13 percent (20 MT); pearl millet 7 percent (10.4 MT); and groundnuts 4 percent (5.6 MT).

In year 2 (2017/18), the FSE maintained the same crop portfolio. However, while 260 ha in total was cultivated, only 137.5 MT was successfully produced; challenges are explored in section 6 below. Production of maize OPVs in particular was negligible (4 MT) due to drought conditions and failure to secure adequate foundation and breeder seed.[32] The FSE multiplied hybrid maize[33] seed in the winter to minimize the potential losses due to weather conditions, resulting in the production of 100 MT. Sorghum production amounted to 10 MT, groundnut to 11 MT,[34] and pearl millet to 12.5 MT (see Table 3).

[31] This covers the period October 2016 to April/May 2017.
[32] The 4 ha planted were affected by late rainfall, the fall army worm and the mid-season 42-day drought.
[33] Maize variety ZS265.
[34] This was done in the lowveld, about 600 km from Harare, resulting in high travel and seed inspection costs.

FIGURE 4

CROP PORTFOLIO 2016/2017



Source: Champion Farmer Seeds

OXFAM

TABLE 2

SEED PRODUCTION IN THE GROWING SEASON 2016/2017

	HYBRID	OPV	SORGHUM	PEARL MILLET	GROUNDNUT	TOTAL
Hectarage	10	27	11.4	10.9	12.8	72.1
Yield/Ha	3.1	3	1.8	1.0	0.4	
Tonnage	31.2	81.5	20.0	10.4	5.6	141.0

TABLE 3

SEED PRODUCTION IN THE GROWING SEASON 2018/2019

	HYBRID	OPV	SORGHUM	PEARL MILLET	GROUNDNUT	TOTAL
Hectarage	40	4	158	58	100	260
Yield/Ha	3	1	1	1	1	
Tonnage	100	4	10	12.5	11	137.5

Source: Champion Farmer Seeds

In both seasons, 2016/17 and 2017/18, the FSE's growers consisted mainly of communal[35] farmers in agro-ecological regions III and IV, which receive erratic rainfall and where land quality is poor. Farmers cultivated on average 0.2 ha of land for the purpose of seed production, primarily under rain-fed agriculture: only two contracted grower groups had access to irrigation. Because of the communal setting, it was a challenge for growers to meet the isolation distance requirements for seed crops such as maize (360m), sorghum and pearl millet (200m). The five grower associations are geographically dispersed: Tsholotsho is located 630km from Harare, while Murewa, Mutoko, Mudzi and UMP are between 120km to 180km away; within the five districts, seed growers are located in widely dispersed wards or villages.

3.2 GROUP FORMATION, MOBILIZATION AND DEVELOPMENT

Farmers engaged as growers were poor. Most had been engaged in SD=HS participatory variety selection and enhancement activities over the years. Within each of the five districts, farmers were mobilized into grower groups with 15-30 members. This facilitated more efficient communication, training, input delivery and collection of seed produced. Groups served as self-monitoring peer units for seed production purposes. Only active association members were selected as seed growers for the FSE, based on clear criteria. After the experiences of the last two years, the selection criteria have now been refined to better meet the financial sustainability needs of the FSE and the smallholder farmers who own it. The revised criteria were validated in an end-of-season, multi-stakeholder evaluation meeting held on 4 October 2018, which involved farmer representatives from all five districts and collaborating partners including Agritex, Seed Services, CBI, CIMMYT, ICRISAT, Mukushi Seeds and Zimbabwe Super Seeds.

At the start of the program, growers had limited technical expertise in the agronomic practices

[35] With communal land, farming households are located on one side of the property and planting land on the other side, in close proximity.

needed to produce certified seed, and to fulfil seed purity and other legislative requirements. Planting, fertilizer application, weeding, harvesting and shelling were all carried out by individual households, making the seed production process difficult to manage – a challenge often exacerbated by pest[36] or disease outbreaks, resulting in reduced seed quality and yield losses. The current FSE model attempts to respond comprehensively to these vulnerabilities through the support growers receive once they are contracted by Champion Farmer Seeds.

Four of the five district association grower groups organized themselves into clusters that worked on their seed lots individually at the household level. One district maintained its farmer field school (FFS) group formation (38 FFS in total, making up 300 farmers) and chose to use FFS plots for seed production for the FSE, though FFS members were contracted individually[37] for accountability purposes. The key difference was that one larger plot was cultivated: inputs were centrally delivered to the lead farmer, who took responsibility for the supplies and for guiding the entire grower group. Members of the FFS groups approached seed production as an opportunity to generate income. Experiences of the 2017/18 season suggest – though do not conclusively prove – that the groups that operated their seed production plots as an FFS performed best. This could in part be attributed to better social cohesion in the groups, and greater self-monitoring and motivation arising from collective action – highlighting the importance of group morale as well as appropriate prior training. However, there are additional factors to consider:

i) **it was possible to maintain isolation distance requirements for the 38 FFS on their plots;**
ii) **group development and the hands-on practical learning curricula of the FFS creates better learning opportunities; and**
iii) **the technical competencies, motivation and support provided by the field officer supporting the group was more effective.**

Although only indicative, this finding showcases the strengths of the FFS approach adopted by SD=HS. In the October 2018 meeting, participating farmers expressed enthusiasm about adopting the FFS approach in the context of seed production for the FSE.

In its first two years of operation, Champion Farmer Seeds contracted both smallholder farmers and commercial farmers.[38] Smallholder farmers operated primarily under rain-fed conditions and had limited resources to supply their own inputs, depending on inputs from the FSE to produce quality seed (as discussed in section 6.3 below). Working with smallholder growers therefore requires that the FSE has the cash flow to provide inputs on credit. In contrast, commercial farmers had access to adequate irrigation, infrastructure and farm implements, and were experienced in the more complex production of hybrid maize seed. In the context of climate change, working with farmers with access to irrigation reduces the risk of crop failure. Engaging commercial farmers is more cost-effective as they can operate more efficiently, their larger plots of land enable higher yields than smallholder farmers can obtain, and transaction costs are lower.[39]

Although smallholder farmers acting as growers are organized in groups, they are contracted individually to improve accountability and seed traceability. The contracts articulate the obligations of each party and stipulate how any disputes are to be resolved. While efforts are made to have contracts signed on time, delays have resulted from disagreements[40] regarding contract pricing terms. Contracts are explained in detail to the farmers in the local language before they sign, but are written in English; farmers requested that in the future the contract be written in the local language, to minimize the scope for misunderstandings.

The contracts prohibit side selling, but it is nonetheless common among cooperative members – though often hard to prove.

---

[36] Farming households have more difficulty controlling pests.
[37] Experience shows that individual contracts in collective agricultural production initiatives are best for ensuring individual accountability. Group contracts tend ultimately to fail, even if initially successful.
[38] One in the 2016/17 season and two in the next.
[39] Transaction costs are lower in e.g. requiring only one contract versus 100 individual contracts for the same volume of seeds. Monitoring, support and quality control are also more cost effective.
[40] This is a minor occurrence. Last season four growers out of the 900 contracted for both winter and summer disagreed with the contract pricing and payment forms.

Growers[41] suggest that late payments from Champion Farmer Seeds create incentives for side selling. Mitigation strategies therefore include more timely payments, alongside existing safeguarding measures such as having FSE staff present at harvesting and weighing. FSE grower payments are set at a rate that facilitates equitable pay but still allows the FSE to have a sufficient gross margin to enable future break-even and financial sustainability as production volumes increase. Champion Farmer Seeds will always need to manage growers' payment expectations carefully.[42]

3.3 AVAILABILITY OF PLANTING MATERIAL

Availability of breeder and foundation seed in Zimbabwe is good. However, quality and quantity issues posed challenges for Champion Farmer Seeds, as discussed below in section 3.4. Shortage of human (technical) and financial resources are the main constraints to public sector research and breeding efforts, limiting CBI's capacity to supply foundation seed. CBI collaborates with three CGIAR[43] centres – CIMMYT,[44] CIAT[45] and ICRISAT[46] – that support the national breeding programs by providing germplasm, building the capacity of breeders, and training scientists.

These international breeding institutions have developed several advanced lines of useful planting materials – in particular maize from CIMMYT and pearl millet, sorghum and groundnuts from ICRISAT – for wide-scale testing among farmers. However, their outreach is limited due to financial, human resource and capacity constraints. The FSE collaborates with them to access new material[47] and train its growers.[48] This has helped to increase the diversity of planting material available to farmers, including varieties better adapted to regions III and IV. Table 4 lists the crops for which the FSE has the rights to produce certain varieties, based on contracts and partnerships with national institutions. Private sector collaboration to date has been to obtain foundation seed from two small-scale seed enterprises, Mukushi Seeds and Zimbabwe Super Seeds.

3.4 SEED QUALITY CONTROL MEASURES

To meet national seed quality regulations, field inspections need to be carried out at specific crop growth stages to check varietal admixtures and diseases.[49] The seed inspection capacity of Champion Farmer Seeds staff has been developed, with support from Agritex staff (see section 3.5 below). Agritex has provided critical technical support to mobilize, train and monitor growers, who have also been trained by Champion Farmer Seed and Agritex staff to properly undertake field operations and basic seed quality tests. As a result of proper capacity development at various levels, input support and relatively good monitoring, 99

---

41 This was alluded to during the end of project evaluation meeting held in October 2018, which included farmers and key FSE stakeholders.

42 At the evaluation meeting in October 2108, growers expressed the wish to receive higher payments for their produce.

43 CGIAR is the Consultative Group for International Agricultural Research. It is a global research partnership for a food secure future dedicated to reducing poverty, enhancing food and nutrition security, and improving natural resources. Its research is carried out by 15 CGIAR centres in close collaboration with hundreds of partners, including national and regional research institutes, civil society organizations, academia, development organizations and the private sector.

44 International Maize and Wheat Improvement Centre

45 International Centre for Tropical Agriculture

46 International Center for Research in the Semi-arid Tropics

47 For example in the 2017/18 season the FSE secured foundation seed from CBI and CIMMYT (1000 kg female foundation seed of the ZS265 hybrid and 900 kg of the male line from CBI and CIMMYT, 2000 kg of foundation seed of sugar bean, 450 kg of foundation seed of cowpeas variety CBC2, 2000 kg foundation groundnut seed from ICRISAT, 12 ha worth of the ZS246 hybrid maize parent lines and 1000 kg parent seed of ZM521).

48 The FSE has seed production and multiplication contracts with CBI for hybrid maize, OPV maize, cowpea, sugar bean, sorghum, pearl millet and groundnuts. With CIMMYT the FSE has established an exclusive partnership in which the FSE releases and multiplies seed of OPV maize developed by CIMMYT. An equally strong relationship has been established with ICRISAT, from which groundnut foundation seed is obtained. ICRISAT has also made seven brewing sorghums and six finger millets available to the FSE for testing and evaluation for future commercial release. Good technical relationships have been formed with all these institutions and there is two-way engagement through planning meetings and field days. Working relationships with CBI and in particular CIMMYT are strong.

49 Bishaw, Z. and A. van Gastel, 2008. ICARDA's approach to seed delivery in less favourable areas through village-based seed enterprises: conceptual and organizational.

TABLE 4

CHAMPION FARMER SEEDS SOURCES OF EARLY GENERATION SEED

Crops	Number of varieties	Rights-granting company	Notes on source of early generation seed
HYBRID	3	CBI	Breeders seed
SORGHUM	1		Breeders seed Foundation seed not available
PEARL MILLET	1		Both breeders and foundation seed available from ICRISAT
GROUNDNUT	3		Breeders seed was bought from CBI, foundation seed from ARDA seeds
COWPEAS	2		Breeders seed of one variety available at present; second variety will be available next season
SUGAR BEANS	2		Breeders seed
GROUNDNUT	1	ICRISAT	Breeders seed
SORGHUM	1		Both breeders and foundation seed

Source: Champion Farmer Seeds 2018

percent of the growers' seeds passed seed certification in the 2016/17 and 2017/18 seasons, clearly showing that smallholder farmers are able to produce quality seed.

3.5 EFFECTIVE SEED PRODUCTION CAPACITY AND OPPORTUNITIES FOR WOMEN AND YOUTH

National and organization level seed certification capacity

To implement the Champion Farmer Seeds model, seed inspection capacity had to be developed within the Champion Farmer Seeds management team and Agritex. Six field officers and Agritex extension staff received seed inspection training from Seed Services for sorghum, pearl millet, groundnuts, beans and maize. Five of the six passed their examinations and are currently undergoing further practical training by Seed Services, on completion of which they will be qualified seed inspectors, able to train seed growers and provide technical backstopping in certified quality seed production. This represents an investment by Champion Farmer Seeds in creating a skilled and knowledgeable pool of people to support its long-term sustainability.

Strengthened technical capacities of farmer growers

Smallholder farmers usually lack the technical skills and managerial competencies needed to produce sufficient quantities of quality seed for the formal and/or commercial sector (farmers already produce quality seeds for their own local seed systems). Building the capacity of seed growers to become more professional and technically competent is critical for the sustainability of the FSE. A critical step was the grouping of growers, as discussed in section 3.2 above, with support for developing association constitutions to promote trust within the groups. The FSE then prioritized technical seed production in line with national seed production regulations.

OXFAM

At the end of the second growing season, 899 small-scale seed growers from the five farmer associations had been contracted and trained on seed production and quality control. Participatory on-site trainings covered issues such as the definition of seed, as distinct from grain; seed legislation; seed value chains; isolation distances; accessibility of land for inspection purposes; transportation of inputs and produce; planting history; soil topography and type; land preparation; planting dates, ratios, and rates; security of land; record keeping; herbicide use; fertilizer and irrigation regimes; importance of weeding, ridging, hilling and basins; removing off-types and suckers (rouging); pests and disease management, including quarantine; weed identification; mono-cropping risks; gap-filling, de-tasseling, and removal of males in hybrid seed production; drying, sorting, bagging, and post-harvest management of seed; and seed quality tests (germination, purity and seed health). Trainings were provided by Champion Farmer Seeds and Community Technology Development Trust (CTDT)[50] staff in collaboration with Seed Services staff, and continuously carried out throughout the season at each seed production stage by FSE field officers and Agritex extension officers.

Opportunities for women and youth

Gender equity is a key feature of Champion Farmer Seeds' capacity building efforts: of the 899 farmers trained, 67 percent (617) were women. Women farmers have been brought into key decision-making positions in the grower associations: in the 2017/18 season, 17 women held such positions. The potential of women farmers is showcased by the stories of Champion Farmer Seeds growers Nelia Katsande (see page 23) and Rita Tshuma, who won an award for best farmer at a national show (see page 29). While more women farmers have benefited as seed growers, it is not clear to what extent this has improved women's decision-making power in the household. Learning from the challenges in the first season, training was provided in the second season to seed growers to address gender dynamics, emphasizing the benefits to the household as a production unit of common decision-making based on shared knowledge of seed production.

Nelia Katsande touring her field with the director of CTDT, Mr Mushita, and Mr Madondoro, the FSE Field Officer.

[50] SD=HS implementing partner in Zimbabwe.

STORY

NELIA'S STORY

EMPOWERING WOMEN AND PROVIDING LIVELIHOOD OPPORTUNITIES

NELIA'S HARVEST FOR THE 2016/17 SEASON

	50 kg bags	kg	US$
SORGHUM	22	1100	517
PEARL MILLET	14	700	329
GROUNDNUTS	8	400	480
TOTAL			1326

Nelia Kastsande is a 74-year-old widow in UMP. She lives with her two daughters, who support her in her seed grower work with Champion Farmer Seeds. Nelia grows three crops on her plot for the FSE – sorghum, pearl millet and groundnut – allocating 0.5 hectares to each. Nelia is the oldest in her grower group but had the best crop in the 2016/17 season and the highest yield. Her group has 50 members, of which 14 are women. Nelia's seed plot attracted much attention from other farmers, including national government officials, which boosted her morale. With support from her neighbours and daughters, Nelia managed to harvest 22 bags of sorghum, 14 bags of pearl millet and eight bags of shelled groundnuts, earning an income of US$1,326. She proudly says: "I managed to pay for all the advance inputs I had received from Champion Farmer Seeds and remained with enough, a situation which I never expected. I gave my two daughters US$100 each for assisting me during the growing season. I also paid fees for my two grandsons at Maramba Primary School. I was amazed to realize that I had extra money after having met all I had planned to do after selling my produce to Champion Farmer Seeds. I then bought an ox for ploughing."

Like all smallholder farmers in Zimbabwe, Nelia has a story behind what led her to become a seed grower with Champion Farmer Seeds. She recounts: "The area Maramba is known for its low rainfall and as locals we only plough and grow small pieces of land enough to feed our families. We usually have no surplus to sell. Even before my husband passed on, he did not even grow crops to sell. However, when Champion Farmer Seeds came into our area I just thought of joining the growing of seed and my plan was also to have seed for my future use after harvesting and at the same time selling. This would enable me to save money to buy food and pay fees for my grandsons at Maramba Primary School. At one time I wanted to drop from the cluster because I was now spending most of my time at the field despite my age and my neighbours kept laughing at me as well because I would wake up around 5am every day to go and scare away birds and keep my plots weed free. The neighbours said seed was never grown in communal areas and that I would not realize any profits. Our local Champion Seeds officer and our ward Agritex officer kept visiting me and encouraging me and my daughters not to drop and I would lose more if I dropped and abandoned the good-looking crop."

As more and more youth shun agriculture and migrate to urban areas, engaging youth in seed production is an important challenge for the future sustainability of the FSE. In the 2016/17 season 10 youth growers (four of them women) were engaged as growers, including Tafadzwa Chigombe (see page 24). As his story shows, youth have also gained access to leadership positions in district associations. Nonetheless, more still needs to be done to facilitate youth participation in the FSE.

STORY

TAFADZWA'S STORY

CHAMPION FARMER SEEDS ENGAGING YOUTH IN SEED PRODUCTION –

Aged 29, Tafadzwa Chigombe become a seed grower for Champion Farmer Seeds in the 2016/17 season. Tafadzwa has shown great motivation and enthusiasm, and leads the youth seed grower group in UMP – which started out with 10 members, but seven dropped out because they found the work too gruelling. Like all Champion Farmer Seeds growers, Tafadzwa is contracted to grow seeds and has received technical training in the agronomics of certified seed production. He says: *"It was demanding during the first year – weeding, scouting, spraying and roughing as per our trainings was to be done... I was trained on how to grow seed for the market and that means that I am now fully empowered. I can now also train other youths in my community on how to grow both small grains and legumes."*

In the second year, 2017/18, Tafadzwa was elected as the chairperson of his district association and its representative on the Champion Farmer Seeds Advisory Board. Tafadzwa sees himself as the voice of other seed growers in directing the FSE on policy and strategy issues. He feels that the FSE youth program has changed his life – beyond gaining leadership roles, he has been able to generate income to diversify his livelihood opportunities by starting a poultry project. He explains that his *"small family is now able to feed and buy clothes and other household needs."*

TAFADZWA'S HARVEST FOR THE TWO SEASONS

	2016/17 50 kg bags	US$	2017/18 50 kg bags	US$
SORGHUM	10	235	3	70.50
PEARL MILLET	5	117.50	2	47
GROUNDNUTS	3	180	-	-
TOTAL		532.50		117.50

Source: Champion Farmer Seeds Field Officer Reports

Tafadzwa Chigombe, Champion Farmer Seeds UMP Chairperson, shows off a chicken house he was able to construct through his income as a seed grower.

OXFAM

4. EFFECTIVENESS OF MARKETING EFFORTS

In its marketing strategy, Champion Farmer Seeds has set production goals that respond to the complex needs of smallholder farmers and aimed to increase their adoption of improved and appropriate varieties. Active market analysis is critical to success, along with providing information on the FSE's products to buyers. In the 2016/17 season the FSE sold 95 percent (134 MT) of its seed stock: 29 MT of OPV and 85 MT of hybrid maize, while sorghum, millet and groundnut sales were 10 MT, 9 MT and 1MT respectively (see Table 5). At the time of writing, sale of the 2017/18 production was still ongoing. The FSE's seeds are available in three pack sizes – 2kg, 5kg and 10Kg – based on the recommendations of the customer survey carried out at the inception of the program. Its packaging is professional and labelling meets regulatory standards. Promotion strategies included demonstration plots, product performance trials hosted by farmers, field days, product exhibitions during agricultural shows, merchandisers in agro-dealer shops, farmer competitions and infomercials on mass media. Simangaliso Tshuma's award (see page 24) also provided publicity.

To better understand farmers' demand for seeds while broadening the genetic base of crops, the FSE has worked in close collaboration with FFS, which have engaged in participatory variety selection and enhancement activities in several districts under Pillar 1 of the SD=HS program. The work of the FFS provides opportunities for the

FSE to take on board better-performing varieties with potential for national release. To date the FSE has set up around 100 demonstration plots in FFS sites, helping communities to evaluate the advantages of its early-maturing, drought-tolerant varieties.

Field days are important for showcasing the FSE's seeds to farmers in communities. Working with Pillar 1 FFS groups, the FSE has to date held 17 field days in nine districts for smallholder farmers, agricultural extension staff, traditional leaders, policy makers and NGOs engaged in agricultural development. Attendance was good, with an estimated 2,850 visits – 66 percent from women farmers who expressed interest in buying seed in the coming season. Groundnut varieties that are not readily available on the market were of great interest to participating farmers. Field days have provided seed growers with practical training in agronomic practices, disaster alleviation options, and variety performance and evaluation, and promoted networking and community cohesion.

Sales in the first year of production exceeded targets, with 95 percent of produced seed sold. Champion Farmer Seeds products have been made available through marketing channels including government input schemes, agro-dealers, development organizations and direct sales to farmers (see Figure 4). Experiences have been mixed: in the first season, bulk sales were to another seed company, and in the second season primarily to the Government Presidential Input Scheme. Direct sales have been made to development organizations such as Catholic Relief services[51] and Agricultural and Rural Development Authority, which then sell on the open market.

Across all distribution channels, receipt of payment remains a challenge – especially as Zimbabwe's cashless economy necessitates alternative payment methods. Sales are remitted by standard bank transfer or through mobile banking platforms such as eco-cash, on which the FSE has a merchant code to make payments easier. In the future the FSE plans to have mobile PIN machines as a third option for seed buyers.

[51] As part of humanitarian relief response nationally. The direct beneficiaries are smallholder farmers, who will now be given seeds adapted for their agro-ecological zone rather than imported seed.

OXFAM

TABLE 5

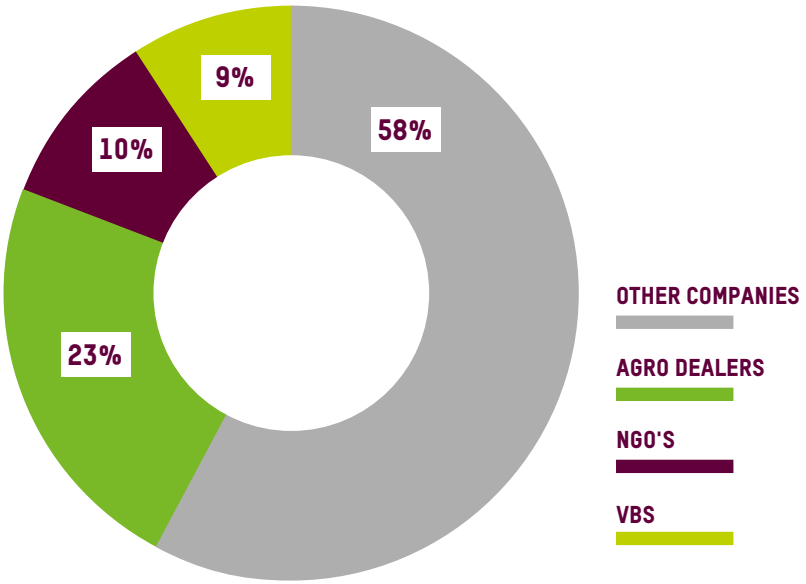
CHAMPION FARMER SEEDS SALES FIGURES PER CROP FOR THE 2016/17 SEASON

	HYBRID	OPV	SORGHUM	PEARL MILLET	GROUNDNUT	TOTAL
million tonnes	29	85	10	9	1	134

Source: Champion Farmer Seeds

FIGURE 5

CHAMPION FARMER SEEDS 2017/18 SALES CHANNELS



Source: Champion Farmer Seeds

STORY

SIMANGALISO TSHUMA'S STORY

CHAMPION FARMER SEEDS GROWER MS TSHUMA WINS THE BEST FARMER AWARD AT THE NATIONAL PROVINCIAL SHOW

Simangaliso Tshuma is a female farmer in Ward 22 in Tsholotso district – in agro-ecological region IV, 630 km from Harare – where 23 farmers (18 women) were contracted to grow pearl millet, groundnuts and sorghum for Champion Farmer Seeds in the 2017/18 season. Simangaliso grew groundnut (0.3 ha) and sorghum (0.4 ha). She received training on quality seed production, input support and technical support from Champion Farmer Seeds and Agritex extension staff, and her crop was rated as being of exceptional quality by the district Agritex office. This led to Simangaliso's participation at the annual provincial agricultural show in Bulawayo in April 2018, at which her sorghum crop won first prize. This resulted in her being entered into the national agricultural show in Harare in September 2018, where she won the prize for best overall small-scale farmer for her sorghum crop. Her prize was a tractor and plough, donated by Agricon.

Source: Champion Farmer Seeds Field Officer report based on interview with farmer in question.

Simangaliso Tshuma pictured with her husband, leaders from her province, and other dignitaries including the CEOs of ZAS and Agricon and the director of the Ministry of Agriculture.

OXFAM

5. FINANCIAL SUSTAINABILITY AND BENEFITS TO GROWERS

Seed enterprises inherently have "medium to long cash flow cycles and short periods of sales activity at certain times of the year".[52] In both years, the FSE experienced brief cash surpluses during sales periods but long periods of cash flow deficits during production periods. These were exacerbated by providing inputs: over the past two seasons the FSE has provided foundation seed,[53] fertilizers, herbicides and pesticides on credit to seed growers, recovering the costs later from grower payments (when the FSE purchases the seeds from growers). The FSE provided transport to and from the seed growers' plots, and covered monitoring and inspection costs[54] of government seed inspectors and the costs of packaging bags and sewing twine for the seed growers. Grower payments[55] were made at the end of the growing season, when seeds were collected from farmers, but before they had been sold. This has all increased the FSE's financial risk, particularly in the event of crop failure. In the 2017/18 season, an estimated US$ 15,740 was written off due to crop failure attributed to the drought. Losses of this magnitude have dire implications for the sustainability of the FSE and should be mitigated through cost sharing with growers where possible.

[52] MacRoberts, J. Supporting the development of small to medium scale seed enterprises in sub-Saharan Africa.
[53] Provided free as standard practice among seed companies.
[54] Consists of transport and accommodation costs.
[55] Another small seed enterprise, Mukusi Seeds, works primarily with commercial farmers and makes grower payments only after sale of seeds, which improves cash flow.

Cost and profit drivers

Grower payments make up 41 percent of the FSE's total production costs. Input costs (including foundation seed) and overhead costs are also considerable. It is cheaper for the FSE to produce and sell hybrid maize than the other crops. In both seasons maize has been the main profit driver, with gross profits of 53 percent – significantly higher than for other crops, highlighting the importance of maize for the FSE's financial viability. Groundnut sales were next highest, but gross margins were low due to higher per-unit costs. In 2017/18, costs per yield increased primarily due to low production of small grains.

Break-even point and future financing

It generally takes three-to-five years for seed enterprises to develop enough markets and customers to break even and start to make a profit.[56] Based on production and sales forecasts, the FSE's business plan projected losses in its first three years of operation, with break-even projected for the fourth year. In the first year, sales exceeded projections but sales in the second year were 70 percent lower than planned, for reasons noted in section 3.1. To break even the FSE will now have to significantly increase seed production: the projected break-even volume is around 500 MT, comprising at least 25 percent hybrid maize and 25 percent OPV maize.

Bridge financing remains a challenge. Efforts to mobilize additional financial resources have been unsuccessful, with lack of collateral making it difficult to access short-term loans. Phase II of the SD=HS program will provide grant support for an additional four years, on the explicit condition that Champion Farmer Seeds will develop a clear strategy towards financial sustainability. In addition to the grant, the FSE requires bridge financing to cover the period from August to October/November when growers are paid and inputs sourced for the next season.

Champion Farmer Seeds shares are currently held in trust for association members. No shares have been issued for sale, although farmers have expressed significant interest

[51] Van Gastel AJG, Bishaw Z and Gregg BR. 2008. Business principles for the establishment of a viable smallscale seed enterprise. Pages 231-239 in Farmers, seeds and varieties: supporting informal seed supply in Ethiopia (Thijssen MH, Bishaw Z, Beshir A and de Boef WS, eds.). Wageningen, the Netherlands: Wageningen International..

in buying them; however, analysis of farmers' level of understanding of what it means to be a shareholder suggests it would be first prudent to further develop their financial literacy skills and understanding of their multiple roles as contract growers, shareholders and board members. Issuing shares (at US$ 2 each) has the potential to mobilise resources for the FSE. Based on the current membership, the FSE is estimated to raise just below US $16,000 from the sale of shares.

Benefits to growers

The FSE has directly and indirectly achieved its objective of improving livelihoods for smallholder farmers. Direct benefits include the income earned by seed growers – as much as 85 percent higher from hybrid maize seed than they could have earned from growing grain, 50 percent higher from seed groundnuts than from grain groundnuts, and a 21 percent advantage from the small grains. In 2017, for example, one woman grower earned as much as US$ 1,533 with Champion Farmer Seeds (see Table 7). With their improved incomes, FSE seed growers have bought livestock, paid school fees, started other income-generating projects, developed their homesteads and enjoyed greater disposable income (see pages 23 and 24 for examples).

TABLE 7

A COMPARISON OF CHAMPION FARMER SEEDS PRODUCTION OVER TWO YEARS

	TOTAL HECTARAGE	NO. OF GROWERS	TOTAL YIELD (MT)	GROWER PAYMENT ($US)	HIGHEST PAID ($US)
2017	72	91	141	79,735	1,533
2018	263	782	135	96,893	859

Source: Champion Farmer Seeds 2018


MAIZE

6. CHALLENGES

6.1 ORGANIZATIONAL SET UP OF THE FSE

Establishing a lean but effective management structure

Champion Farmer Seeds is operationally managed by a seed expert, finance manager and marketing agronomist who are based in Harare (see Annex 3). The management team[57] is housed on the CTDT premises[58] and supported by a grant accountant and warehouse clerk, responsible for financial resource management and inventory/stock management respectively. At the district level growers are supported by field officers. While members of the FSE's management team have a strong background in seeds and agronomy, none has a business background.

In addition to the Advisory Board, Champion Farmer Seeds has been accountable to a joint CTDT and Oxfam Novib management committee. The committee was established to guide the FSE in its project phase, providing both technical and operational support to ensure it meets its development goals. It was instrumental in establishing the FSE, providing strategic direction and operationalizing it within the broader work of SD=HS on plant genetic resources.

With its in-country presence, CTDT is the partner responsible for implementing the SD=HS program. It led the starting up of the FSE, establishing linkages with government technical services such as Agritex and CBI. To date, CTDT has had contractual and fiscal responsibility for the FSE. The transfer of grant funding to the FSE has been on the basis of a financing agreement between the two organizations. Until 1 April 2018, all the FSE's activities were operationalized through CTDT and based on their organizational policies: the FSE was required to follow CTDT procedures and decision-making processes in its day-to-day operations. This has some benefits from

[57] From the last quarter of 2017 until the end of February 2018 the FSE experienced a gap in leadership.
[58] The FSE does not pay rent but covers its share of utility costs.

an accountability point of view, but has also contributed to delayed responses on the ground. Champion Farmer Seeds began to put in place its own operational and financial procedures in April 2018, though these are to be finalized as of the first quarter of 2019. This is a critical development towards a business-oriented enterprise; however, significant capacity building of both the staff and the board in business management is needed. Phase II of the program will focus on developing these capacities.

Based on the challenges experienced during the 2017/18 season (discussed in sections 3.2 and 3.4), the FSE's Advisory Board and management committee decided to manage risks by engaging both smallholder farmers and commercial farmers in the future. The FSE will engage commercial farmers to produce hybrid maize (the cash crop), while smallholder growers produce OPV maize (which is less complicated), legumes and small grains. This will allow losses in small grains and legume production to be offset by returns from hybrid maize.

6.2 FINDING THE RIGHT BALANCE IN CROP SELECTION

Any private sector seed enterprise would want to choose crops and varieties for which commercial demand and gross margins are high. Champion Farmer Seeds faces the additional challenge of striking a balance between financial viability and its development mandate – providing seeds of crops and varieties that meet the needs of resource-poor farmers under stressful farming conditions.

Being restricted to commercializing only registered varieties weakens an FSE's effectiveness in filling the gap in the commercial market for varieties for poor farmers in marginal conditions. In the case of maize, for example, the registered varieties are those profitable for commercial farmers in favourable environments. An FSE facing these restrictions therefore needs to capitalize on windows of opportunity in existing regulation. In Zimbabwe this could be the provision that would allow the commercialization of farmer varieties under the umbrella of standard


CHAMPION
SEEDS
CHAMPION SEEDS
GROUNDNUTS
ILANDA

grade seed: while this provision officially exists, Seeds Services has no field guidelines for this class of seeds. Another window of opportunity is the exemption from certification of seeds of crops other than the eight crops for which certification in Zimbabwe is mandatory. Small grain cereals and dry land legumes are exempted. However, Seeds Services does not have guidelines for the commercialization of the seeds of these crops.

6.3 WORKING WITH SMALLHOLDER FARMERS

SD=HS aims to empower smallholder farmers to benefit from more appropriate seeds, so the role of Champion Farmer Seeds goes beyond engaging association members as contract growers. The FSE needs also to meet the seed needs of smallholder farmers and facilitate their ownership of the enterprise. However, there are inherent challenges in working with smallholder farmers. Establishing grower associations was a challenging process that highlighted different levels of understanding about the various functions, roles and responsibilities, and the need for capacity building.

Input support has made it possible for the FSE's contracted growers to farm under very difficult economic and climatic (drought) conditions, but increases costs for the FSE. When crops fail, the cost of inputs cannot be recovered. This greater production risk exacerbated its cash flow deficit – especially in the 2017/18 season, as discussed. Most other farmer-based seed enterprises do not provide input support to farmers. Zimbabwe Super Seeds, for example, which has an otherwise similar model, does not supply inputs to its farmers. The FSE has begun to explore the extent to which grower association members are able at least to share input costs. Preliminary indications are that this capacity varies considerably, and is likely to be negatively affected by the continued economic instability in Zimbabwe.

Both smallholder and commercial growers required constant field monitoring by the FSE to ensure adherence to seed quality standards. However, the smallholders required more hands-on technical[59] support and monitoring, which resulted in higher management and transaction costs. Another challenge among smallholder farmers was maintaining isolation distances due to the communal nature of their seed production plots.

6.4 SEED PROCESSING AND STORAGE

Seed processing and storage are currently based in Harare. The FSE has hired seed processing facilities and rents a store room for seed storage in an effort to minimize start-up costs. For seed distribution a truck is hired for large-scale deliveries. The FSE will explore opportunities to acquire its own processing plant and warehouse as well as seed delivery trucks as seed production volumes increase and it becomes financially sustainable.

6.5 MARKETING

Bulk sales have been beneficial, even if wholesale prices tend to be lower: selling a large volume of seed to one buyer has resulted in lower delivery costs and less need to follow up on payment. Zimbabwe's worsening currency crisis makes fixed price sales at the time of bulk delivery risky, as delays in payment – sometimes of more than a month – have led to significant financial losses. However, direct sales are less risky and difficult to manage than providing consignment stock to agro-dealers. While the larger agro-dealers were relatively undemanding, the smaller dealers required constant monitoring to ensure that seed was being sold – a challenge with just one marketing and sales officer and limited and transport capacity, especially as some agro-dealers are remote. Ensuring that stocks sold were duly paid was a challenge with both large and small agro-dealers. Risks of theft or damage also need to be managed, as do the cost implications of retrieving unsold stock.

[59] On pest control/disease management, seed cleaning, shelling and post-harvest handling techniques.

OXFAM

7. KEY LESSONS AND RECOMMENDATIONS

There was consensus that it would require long-term commitment to establish an FSE with the objective of integrating farmer varieties into the market and furthering the broader agenda of SD=HS. The achievements of the Mekong Delta seed clubs and now Champion Farmer Seeds show that FSEs are feasible, but the past two growing seasons have been a steep learning curve with many assumptions put to the test. Operationalizing the FSE has required a significant amount of technical and financial resources, but provided invaluable opportunities to its seed producers. The strengthening of partnerships and business skills has laid a good foundation with potential for sustainability. Our experiences indicate that it is complex to strike a balance between achieving the development agenda and business sustainability, but it is possible to fill the gap left by the formal seed system in supplying improved quality seeds of various varieties of crops.

The challenges we faced in implementing the Champion Farmer Seeds model reflect those of other small-scale enterprises in low-margin businesses, but amplified by the constant tensions between its social and development mandate and the need for financial sustainability. After only two years of operation, the experiences of Champion Farmer Seeds are not conclusive but indicative. Initial lessons and recommendations provide guidance to strengthen future programming in SD=HS and Champion Farmer Seeds:

Seed policy, law and regulations. These strongly shape the type of FSE model that is feasible. They may present direct and indirect barriers to the diffusion of farmers' varieties in two ways. First, through regulations that allow only officially released or registered varieties to be commercially marketed. This limits the options of an FSE to fill gaps in commercial markets

and increase the diversity of plant genetic resources. In Zimbabwe, officially released varieties of hybrid maize are more likely to be bred for commercial farms in favourable conditions than for marginal conditions. Second, the need for certification – while this helps in general to ensure good quality seeds, policy advocacy is needed to create legal space to market locally adapted varieties that meet community and regional demands. It is important that the FSE's work remains linked to other work in SD=HS. The registration of two pearl millet and sorghum varieties within SD=HS work in Zimbabwe presents opportunities for commercialization.

Seed production and quality. When provided with technical and input support, smallholder farmers can produce quality seed. However, rain-fed seed production presents a high risk in the context of climate change. It is important to assess the relative risks and opportunities of working under rain-fed conditions or irrigation schemes. Champion Farmer Seeds will need to balance production between farmers with irrigation facilities and smallholder farmers without irrigation, particularly for high value crops such as hybrid maize. There is also a need to balance the production of seeds between smallholder farmers who lack resources and incur higher transaction and management costs and commercial farmers who have their own resources for production (though the FSE has also provided them with inputs on credit), and own irrigation and storage facilities.

Crop selection. It is important to understand the market viability of crops in the FSE's product mix. Decisions should balance market demand and returns on investment with the development agenda of diffusing seeds and varieties neglected by the commercial sector but important to resource-poor farmers in less favourable conditions.

Technical competence and commitment of smallholder growers. Various socio-economic factors influence smallholder farmers' decisions to engage in associations and initiatives such as an FSE. Developing seed production capacity requires participatory approaches that empower farmers but provide specialized support at critical moments. Within SD=HS training on seed production should adopt the FFS approach to promote greater cohesion, motivation and ownership.

Linkages with research institutions, seed regulators and extension staff. These are invaluable and have been important in operationalizing the FSE and meeting its development agenda. Key elements have included collaboration with private seed companies, CBI and the CGIAR centres to access planting material; leveraging CTDT's network for outreach; Agritex support in mobilizing, training and monitoring growers; and collaboration with Seed Services. It will be important that the FSE maintain and strengthen these relationships while also building in-house capacity.

Proactive marketing. Fostering relationships with bulk seed buyers is critical and provides avenues for more reliable sales than consignment sales. Securing bulk pre-orders should be a key strategy for the FSE.

Financial sustainability. The high start-up costs of Champion Farmer Seeds, and recurring costs, have implications for sustainability and replicability. Decentralized models require lower start-up costs and seed production and distribution costs. Future programming will explore models with lower capital investment needs and reduced overheads. Equally important is strengthening business and technical competencies: business management training, mentoring in business management and stronger private sector partnerships should be a key focus of the FSE going forward.

REFERENCES

Almekinders, Conny; Louwaars, Niels P. (Eds.) (1999): Farmers' seed production. New approaches and practices. London: Intermediate Technology.

Argumedo, A.; Salazar, R. (2012): Challenges in Commercializing Farmers' Seeds: A potential approach for small farmers in developing countries. A discussion paper commissioned by Oxfam Novib for the seeds expert consultation 12-13 November 2012. Vietnam.

Bishaw, Zewdie; van Gastel, Anthony J.G. (2008): ICARDA's Seed-Delivery Approach in Less Favorable Areas Through Village-Based Seed Enterprises: Conceptual and Organizational Issues. *In Journal of New Seeds* 9 (1), pp. 68–88.

Cromwell, Elizabeth; Friis-Hansen, Esbern; Turner, Mick (1992): The seed sector in developing countries: A framework for performance analysis. Overseas Development Institute. London (Working Paper, 65).

FAO (2009): State of the Plant Genetic Resources For Food and Agriculture in Zimbabwe (1996-2008).

FAO (2010): The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture. Rome: Food and Agriculture Organization of the United Nations (FAO).

GoZ; UNCT (2010): Country Analysis Report for Zimbabwe. Harare.
Louwaars, Niels P.; Le Coent, Philippe; Osborn, Tom: Seed Systems and Plant Genetic Resources for Food and Agriculture. Food and Agriculture Organization of the United Nations (FAO).

Mabaya, Eward; Mujaju, Claid; Nyakanda, Patience; Mugoya, Mainza (2017): Zimbabwe Brief 2017 - The African Seed Access Index. The African Seed Access Index.

MacRobert, John F. (2008): Supporting the development of small to medium-scale seed enterprises in sub-Saharan Africa. In Maria H. Thijssen, Zewdie Bishaw, Abdurahman Beshir, Walter S. de Boef (Eds.): Farmers, seeds and varieties. Supporting informal seed supply in Ethiopia. Wageningen: Wageningen International, pp. 225–230.

Maharjan, Keshav L.; Narayan, P. Khanal: A framework for Understanding Sustainability of Community-Based Seed Production System. In: Community Seed Production. Workshop Proceedings 9-11 December 2013. With assistance of C. O. Ojiewo, S. Kugbei, Zewdie Bishaw, J. C. Rubzogo. FAO; ICRISAT. Rome and Addis Ababa, pp. 46–54.

Mujaju, Claid: Zimbabwe Seed Sector. A baseline study/survey. African Seed Trade Association (AFSTA).

Neate, Paul J.H.; Guei, Robert G. (2010): Promoting the Growth and Development of Smallholder Seed Enterprises for Food Security Crops. Best practices and options for decision making. Rome.

SD=HS: Towards a business model: Piloting a Farmer Seed Enterprise in the Sowing Diversity = Harvesting Security (SD=HS) Program.

Sperling, Louise: McGuire, Shawn (2010): Understanding and Strengthening Informal Seed Markets. In *Expl. Agric.* 46 (02), pp. 119–136. DOI: 10.1017/S0014479709991074.

Tin, Huynh Quang; Cuc, Nguyen Hong; Be, Tran Thanh; Ignacio, Normita; Berg, Trygve (2011): Impacts of Seed Clubs in Ensuring Local Seed Systems in the Mekong Delta, Vietnam. In *Journal of Sustainable Agriculture* 35 (8), pp. 840–854. DOI: 10.1080/10440046.2011.611746.

Tin, Huynh Quang; Nguyen, Dao Huynh; Thah, Hiep Huynh; Tam. Phan Thanh; van Dang, Bui; Giang, Thi Tien (2016): Impacts of Community-based Seed Production and Supply towards Sustainable Agricultural Production in An Giang Province. In Can Tho University *Journal of Science* 3, pp. 120–125.

United Nations: Sustainable Development Goals. Goal 2: Zero Hunger. United Nations. Available online at https://www.un.org/sustainabledevelopment/hunger/.

OXFAM

ANNEX 1

FSE LINKAGES WITH THE BROADER SD=HS PROGRAM

Pillar 1 of the SD=HS program addresses broadening the genetic base of cultivated crops that are most important to smallholder farmers under their various changing climatic contexts. It focuses on traditional crops and varieties as well as crops and varieties that use new technologies, including improved hybrid seeds.

Pillar 1 is fundamentally about ensuring diversity and agricultural resilience, and technical[60] strengthening of the role of farmers in seed management. It aims to improve the productivity of farmers' varieties and supports development of new farmer varieties that meet the needs of smallholder farmers' agro-ecological conditions. These need to be diffused into the market for the work to be sustainable, hence the FSE approach.

In Zimbabwe, during phase 1 of SD=HS, Pillar 1 work has resulted in the registration of new pearl millet and sorghum varieties. Farmers have improved the productivity of several farmers' varieties of maize OPVs, pearl millet, sorghum and groundnut. For greater impact and sustainability, these cultivars need to be diffused to wider markets, not only through localized traditional systems of seed exchange (farmers' seed systems). Pillar 3 of SD=HS focuses on use of neglected and underutilized species in scarce periods for nutrition security, and women's empowerment. As the FSE matures, opportunities to strengthen the linkages between the two pillars will be explored.

Policies and regulations on seed diffusion and commercialization can impede the success of an FSE, as discussed in section 2.3. Pillar 4 of SD=HS addresses the policy and regulatory constraints to the diffusion of farmers' varieties, and Farmers' Rights more generally. It supports Pillar 1 work through policy advocacy to broaden the base of plant genetic resources and strengthen the role of smallholder farmers in their management.

Pillar 4 also addresses policy and regulatory barriers. For example, in most countries – including Zimbabwe (see section 2.4) – only officially registered varieties can be commercialized, limiting an FSE's seed portfolio. While this rule is important for regulating the private sector, reforms are needed to support FSEs: possible solutions are emerging based on SD=HS initiatives in Laos, Vietnam and Zimbabwe, where new farmers' varieties are gaining market access.

[60] The Farmer Field School (FFS) approach is used to strengthen cohesion of the farmers while they gain technical competences on plant genetic resource management and the agronomics of seed production in the context of the FSE.


CHAMPION SEEDS
MAIZE
EARLY MATURITY
ZM 309


CHAMPION
SEEDS
ZS265 MAIZE HYBRID
MEDIUM MATURITY,
DROUGHT TOLERANT
2kg
CERTIFIED SEED


GROUNDNU
ILAND

ANNEX 2

SEED MULTIPLICATION MODELS

Production of breeder seed and foundation seed are centralized to ensure adequate control, but in later stages of seed production – the bulking up of certified seed – organizational opportunities range from the formal and centralized to decentralized and informal or semi-formal.

Seed company farms are the most centralized form of seed multiplication: all stages are carried out at a central, large-scale farm under the same management. This makes controlling production easier and more cost-effective. However, its feasibility depends on whether agro-ecological conditions permit all production to take place in one location, and on whether the market is too widely dispersed to be served from one location. On public sector seed farms it has often proved difficult to control quality and costs effectively using bureaucratic management methods.

Use of contract growers is the most common form of organizing seed multiplication. It is standard practice in developed countries, and evidence in developing countries suggests it is also preferred, though it may be more difficult to operate in less sophisticated economic systems. In this system, seed companies contract farmers to bulk up foundation seed to certified seed, under strict control by the company and the national seed quality control authorities. Growers are paid a premium price for the extra effort needed to produce a seed, rather than grain, crop. The system allows for better tailoring of quantities produced to meet demand but can be more expensive to administer (for example, seed inspection takes place over a much wider area) and involves the added cost of growers' premiums.

The difference between the contract system and cooperative forms of organization is purely one of ownership – in this case, it is the farmer growers themselves that own the umbrella seed organization. The models are very similar in terms of flow of seed.

Decentralized seed multiplication can be organized in a number of ways. The basic concept is that the bulking up of certified seed is done by small farmers. Seed produced is usually sold in the zone where it is produced, which can be useful for reducing transport costs and increasing the availability of seed in more remote areas. It also enables small farmers to share in the returns to seed multiplication.

Two major factors influence the economy of seed multiplication and thus the appropriateness of different organizational forms:

(a) **The density, size and proximity of the market** plays a crucial role in determining whether centralized seed multiplication is commercially viable. Transport of seed over long distances from a central seed multiplication unit to sales locations greatly increases costs. Many commercial and public sector seed companies prefer centralized multiplication because it is easier and cheaper to control the multiplication process, but it is rarely commercially viable to serve the small farmer market from a limited number of central seed farms because this market is often small, widely dispersed and in relatively remote areas.

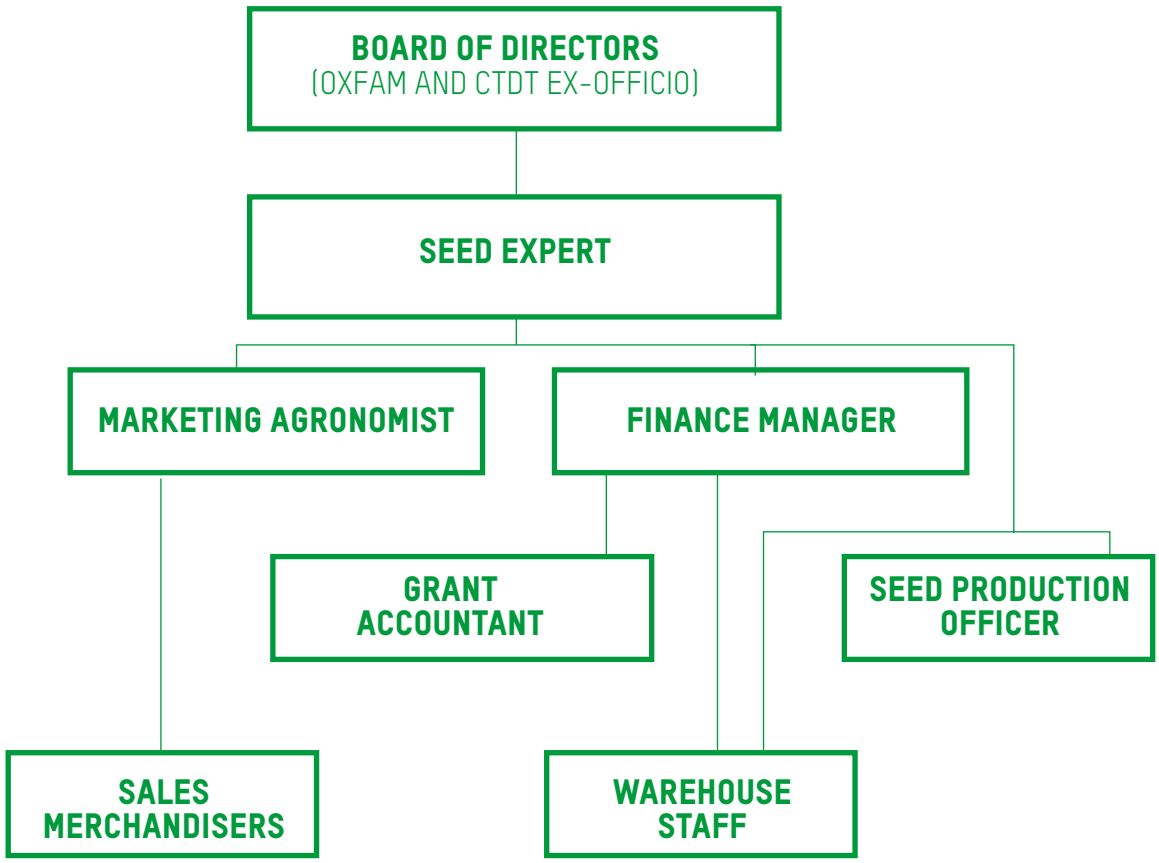
(b) There are significant differences in the **technicalities of seed multiplication** for different types of crops: commercial seed companies are strongly biased toward production of hybrids, to secure sales through the requirement for annual replacement. As this is a more management- and labour-intensive activity than, for example, multiplying open- or self-pollinated varieties, commercial seed companies will often wish to organize multiplication centrally, which can preclude them from serving the small farmer seed market. Multiplying disease-free, high-quality bean seed, for example, also requires advanced management to avoid seed-borne diseases, which is difficult to provide in decentralized multiplication schemes.

However, decentralized seed production by public sector or community organizations could play a much more prominent role in producing the improved open or self-pollinated varieties that are more suitable for small farmers' use, as these varieties require less intensive management. This particularly applies to groundnut seed multiplication, for which centralized schemes have often failed to deliver cheap, good quality seed, as the handling and transport of groundnut seed is very costly and cumbersome.

Extracted from: Cromwel, C., Friss-Hansen, E and Turner, M. 1992.The Seed Sector in Developing Countries: A framework for performance analysis.Working Paper 65. London, ODI

ANNEX 2

CHAMPION FARMER SEEDS ORGANOGRAM



SOWING DIVERSITY = HARVESTING SECURITY
www.SDHSprogram.org

This publication is developed as part of the Sowing Diversity=Harvesting Security program (www.sdhsprogram.org).

Partners:

The program is thankful for the funding support of:


ZS265 MAIZE HYBRID
10kg
OXFAM