AFRICA SEED TRADE ASSOCIATION

Zimbabwe Seed Sector

A baseline study/survey

Claid Mujaju
Seed Services, Agric. Research Centre, Fifth Street Extn., Harare

9/9/2010

A baseline study/survey on Zimbabwe seed sector for use in the rationalization and harmonization of the seed regulations and policies in the COMESA Member States

ACRONYMS AND ABBREVIATIONS

In this report, unless the context indicates otherwise, acronyms and abbreviations defined bears the same meaning as below.

"Breeder's seed" means seed or vegetative propagating material, increased by the originating, sponsoring plant breeder or institution, used as the source for the production of foundation seed;
"CBD" means Convention on Biological Diversity
"Certificate" means an official document which attests to the phytosanitary status of any consignment affected by phytosanitary regulations;
"Certified seed" means the approved progeny of pre-basic, basic or certified seed managed to maintain satisfactory genetic identity and purity, the production of which is supervised and approved by a recognised certification agency within the Member States and approved as certified class pursuant to this MoU;
"Consignment" means a quantity of seed in one or more lots being moved from one country to another and covered by a single phytosanitary certificate**;**
"Country of re-export" means country through which a consignment of seed was passed and was split up, stored or had its packaging changed;
"CTDT" means Community Technology Development Trust
"Database" means a collection of key information on plant varieties, which Member States will deposit on a continuing basis;

"DR&SS" means Department of Research and Specialist Services
"Entry of a consignment" means movement of a seed lot through a boarder post or point into another country;
"FAO" Food and Agriculture Organization
"Import permit" means official document authorizing importation of seed in accordance with specified phytosanitary requirements;
"Inspector" means a person appointed or designated by recognised authority for the purposes of seed quality control or plant protection services;
"International Plant Protection Convention" means 1951 International Plant Protection Convention as amended of Food and Agricultural Organisation of the United Nations (FAO);
"IPR" means Intellectual Property Rights
"ISTA" International Seed Testing Association
"ITPGRFA" International Treaty on Plant Genetic Resources Important for Food and Agriculture
"Label" means a label accompanying a package of seed stipulating the attributes of the seed in that package;
"**Member State**" means a member of the Southern African Development Community;
"Monitoring" means an official ongoing process to verify compliance to acceptable standards;
"**NPPO"** means National Plant Protection Office which is the designated authority in a Member State responsible for plant protection services;
"NSA" means National Seeds Authority which is the designated authority in a Member State responsible for seed quality control, seed certification, variety release and other related matters;
"OECD" means Organisation for Economic Cooperation and Development
"PBR" means Plant Breeders' Rights;

"Person" means a natural or legal person;

"Pest" means any species, strain or biotype of plant, animal or pathogenic agent, injurious to plants or plant products;

"PGR" means Plant Genetic Resources

"PGRFA" means Plant Genetic Resources for Food and Agriculture

"Phytosanitary certificate" means a document issued by exporting country to certify that requirements specified in the import permit have been met;

"Phytosanitary measure" means any legislation, regulation or official procedure having the purpose of preventing the introduction and/or spread of quarantine pests, or to limit the economic impact of regulated non-quarantine pests;

"Plant quarantine" means all activities designed to prevent the introduction and/or spread of quarantine pests;

"Point of entry" means airport, seaport, or land border point officially designed for the importation of consignments, and/or entrance of passengers;

"**Quality Declared Seed"** means seed produced by a farmer which conforms to specified standards and quality control measures provided for under the SADC protocol;

"Quarantine pest" means a pest of potential economic importance to the area endangered thereby and not yet present there or present but not widely distributed and being officially controlled;

"Quarantine" means official confinement of regulated seed for observation and research or for further inspection, testing and/or treatment;

"SADC Seed Security Network" means National Seed Authorities and National Plant Protection Offices responsible for seed issues based in Member State;

"SADC" means Southern Africa Development Countries

"Sampler" means a person appointed or designated by recognised authority for the purposes of seed sampling;

"Seed class" means a specific generation of seed within a certification scheme;

"Seed lot" means an identifiable consignment of seed of a weight not exceeding that specified by a National Seed Authority or its agent;

"Seed" means true botanical seed or vegetative materials or plant part that is used for plant propagation;

"SPS" means Sanitary and Phytosanitary Standards

"Standard Grade Seed" means a class of seed that only meets the minimum germination and purity requirements stipulated in the Zimbabwe Seeds Regulations.

"System" means SADC Harmonised Seed Regulation System as provided for under this Memorandum of Understanding;

"TBT" means Technical Barriers to Trade

"Treatment" means officially authorized procedure for the killing, removal or rendering infertile of pests;

"Treaty" means the Treaty of the Southern African Development Community of 1992 as amended;

"TRIPS" means Trade Related aspects of Intellectual Property Rights

"UPOV" means International Union for the Protection of new Plant Varieties

"Variety" means a plant grouping within a single botanical taxon of lowest known rank, which can be defined by the expression of characteristics resulting from a given genotype or combination of genotypes, and sufficiently homogeneous to be distinguished from other such groupings by expression of at least one characteristic.

"WTO" means World Trade Organisation

INTRODUCTION

Seed is the first link in the food chain and is the key input to ensuring food security. It can be regenerative or vegetative. Farmers need seed, because without viable seed the survival of their household is endangered. It is a preferred tool for re-establishing the livelihoods of farmers affected by disasters and to return them to a life in dignity independent of handouts. Access to quality seed provides strategic options for easing effects of food insecurity and facilitates food resource diversification and prevention of genetic erosion in rural agriculture.

The success of the Zimbabwean land reform programme, which started in February 2000 hinges on the availability of high-quality certified seed. Of all types of seed, seed maize is highly critical ahead of other crop seeds because maize is the staple food in Zimbabwe and many other African countries. Annually, it is now estimated that the Zimbabwe market requires 50 000t (enough to plant a minimum of 2 000 000ha) of high quality hybrid seed. Seed security therefore becomes an important element of food security.

The Zimbabwean seed industry has been failing to meet the local hybrid seed demand, which has increased from 32 000t before the land reform in 2000 to the current estimated requirement of +50 000t. This increase in seed demand is due to the land reform, which has seen more players getting into agriculture. From 2002 to 2009 the seed industry supplied an average of 24 000t of hybrid seed to the farmers, which is significantly short of the country's demand. The low production levels are due to lower productivity (low seed yields/ha) of the current seed grower base, which is facing many challenges that include limited skills and lack of adequate resources (equipment, irrigation facilities, fertilizers, chemicals, diesel, labour etc).

Generally, seed houses have been supplying adequate seed quantities for soyabeans, wheat and barley over the years. This is because these crops are easy to produce and they are not labour intensive. However, recently wheat and barley seed was becoming difficult to produce due to frequent power cuts affecting proper irrigation required for winter cereals.

Compounding the problems of inadequate seed production is the centralized location of the National Seeds Authority in Zimbabwe. It is imperative for government to decentralize Seed Services, to have satellite stations in critical seed production provinces (areas) in order to timeously and effectively deliver seed certification, and monitor the movement of quality seed throughout the country. Quality seed availability and affordability are fundamental to enhanced productivity. Thus, it is therefore pertinent the practical steps be taken as a matter of urgency to address the shortages in seed.

Apart from the strong formal seed system which is highly regulated and producing quality seed, Zimbabwean farmers mostly in marginalized areas practice informal seed system as a means to access adaptable crop varieties. Informal seed supply in Zimbabwe starts from the grass roots where the farmers save and share germplasm from family to family, scaling up to local markets at national level through seed fairs. This supply system mainly hinges on the cultural heritage principle where farmers save sell and exchange germplasm. The exchange can be for free, barter trade and sometimes through sales at local markets. Furthermore, some NGOs based on humanitarian grounds have been central to the development and existence of the informal seed supply system of Zimbabwe. Most NGOs distribute seed to farmers through relief programmes, and have been the driving force to the existence of seed fairs and seed pack handouts. They usually contract bulk multiplication of seed in which they give out the seed to beneficiaries. Since the informal seed systems is depended on local varieties which are generally low yielders, this has

contributed to the general perception of the public shifting towards despising them when compared improved seed varieties from seed companies. The local varieties are therefore regarded as 'poor man's varieties' or inferior crops and their demise is also compounded by limited research directed towards them.

The decision by the Common Market for Eastern and Southern Africa (COMESA) to harmonize seed regulations and policies in its 19 Member States according to the declaration of COMESA Ministers in Seychelles in March 2008, is treated as one way that can help the country access seed that is in short supply locally. The move is envisaged to integrate isolated national seed markets into one larger COMESA market for seed. This, in turn, will enhance entry in the Region of new improved varieties and ease the movement of quality seed from countries with surplus to countries in need of seed. Variations between countries in national standards for seed certification and quality control, and in quarantine and Phytosanitary measures for seed, complicate trading of seed between countries and cause difficulties for efficient movement of seed. As a result, new and existing seed entrepreneurs are not encouraged to invest in the market. Further, seed prices are not subject to efficient competition and farmers' choices remain limited. Harmonizing seed policies and regulations will attract lower costs due to competition and simpler administration which will further encourage local, small-scale seed producers and suppliers to expand their activities.

The overall benefits will be increased investments in the seed sector, increased seed production, more varieties available, and increased competition. In the end, farmers will be offered access to a wider portfolio of quality seed products at more affordable prices. For the Region, this will contribute to seed and food security, and thus support efforts to alleviate hunger and poverty.

Objective of the study

This study is aimed at providing general background information on the seed sector including seed statistics (production and import/export), availability and status of seed infrastructure, and assessment of capacity of the country to implement effectively the forthcoming COMESA harmonized seed legislation.

Organisation of the report

The report is organized in chapters following the subheadings:

- Chapter 1: Standards for seed certification
- Chapter 2: Variety evaluation, release and registration
- Chapter 3: Phytosanitary measures
- Chapter 4: Plant Variety Protection (Intellectual Property Rights)
- Chapter 5: Seed import/export documentation and procedures
- Chapter 6: Membership to International Organization

After the respective chapters then come the conclusions, references and annexes.

Chapter 1: **Standards for seed certification**

1.1. Background information and responsible body

Seed certification is a quality control process that ensures genetic purity and identity of certified seed sold, through generation control, inspection and labeling (Kadzere and Karadzandima 2007). It is a process whereby recognised crop varieties are registered for seed production, inspected in the field and the final product tested for minimum purity and germination standards before sale. It is a legal requirement of the seeds legislation (Seeds Certification Scheme Notice, 2000) and Seed Services administers this process.

Seed Services is an institute in the department of Agricultural Research and Specialist Services (DR&SS), responsible for administration of Seeds Act [Chapter 19:13] of 1971, Seeds Regulations and Seeds (Certification Scheme) Notice 2000. The legislation basically governs production, processing, labelling and marketing of certified seed in Zimbabwe. This legal mechanism was therefore put in place with the main objective of promoting 'production and use' of high quality seed of proven performance for the protection of farmers. Within the institute is the Official Seed Testing Laboratory that is accredited to the International Seed Testing Association (ISTA) and conducts purity, germination and moisture tests on agricultural, vegetable, tree and flower seed.

Below is the name and contact details of the head of body responsible for seed certification:

Claid Mujaju (Head)

Seed Services Institute

Department of Research and Specialist Services (DR&SS)

Fifth Street Extension, Harare.

Postal Address : P.O. Box CY 550, Causeway, Harare, Zimbabwe.

Telephone Numbers : +263 4 720370/704532-6

Telfax : +263 4 791223

Mobile : +263 712 611 765

1.2. Existing seed classes

In Zimbabwe, seed certification is mandatory for eight crops that are of commercial importance, namely maize, soyabean, tobacco, cotton, wheat, barley, oats and potatoes. For these crops, it is illegal to sell standard grade seed. Standard grade seed is a class of the seed that only meets the minimum germination and purity requirements stipulated in the Seeds Regulations, thus its genetic purity cannot be guaranteed. 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. For example, 1kg of breeder's seed can produce 10kg of foundation and 100kg certified seed respectively (Figure 1).

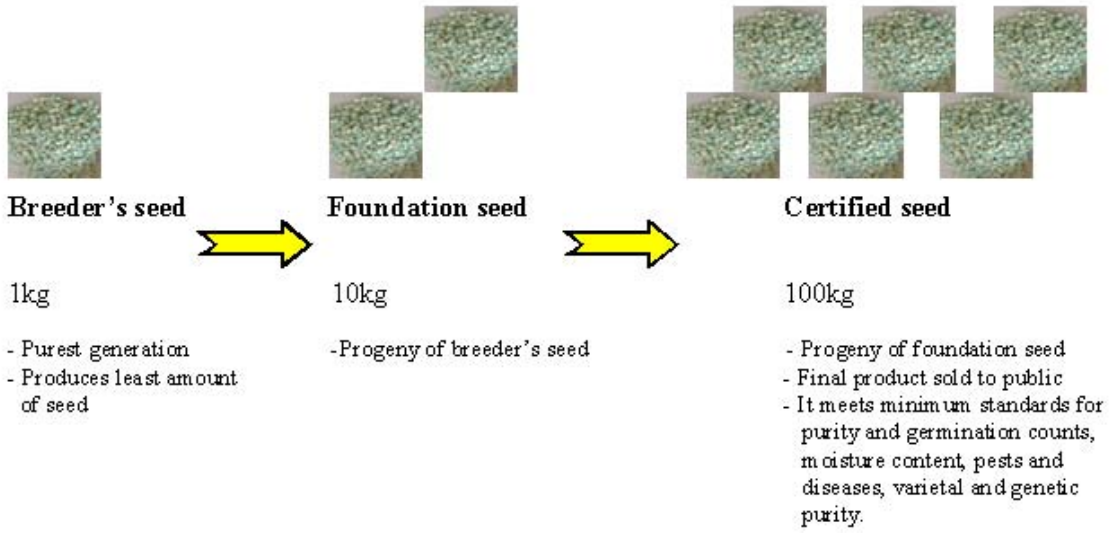

Figure 1. Seed multiplication (Adapted from Kadzere and Karadzandima 2007)

The separation into respective seed classes ensures genetic identity, purity and traceability during the seed multiplication process. During multiplication, there is need for extreme care and caution to avoid unnecessary mistakes. Hence, it is highly recommended that reliable and dependable players conduct seed multiplication, for maintenance of quality.

1.3. Standards for the crops handled

Crop registrations – A seed company can only multiply seed of crops it is licensed to produce. The seed company is also obligated to formerly notify Seed Services of its seed growers, where they are located, hectarage grown and the varieties being produced. Recognised varieties listed in Second Schedule (Annex 1) should only be produced by seed growers under authorised seed companies.

Inspections – Only authorized seed inspectors (whether from registered seed companies or Government) (Table 1.1) conduct certification inspections at the vegetative, flowering and pre-harvest stages of crop growth. They check on all field standards stipulated in the Seeds Certification Scheme and issue field inspection reports. This ensures uniformity in the manner in which certification inspections are conducted at the vegetative, flowering and pre-harvest stages of crop growth. Some of the elements checked during field inspection encompass:

i. *Isolation* – Isolation could be by distance or time of planting and is implemented to prevent cross contamination and the admixture of varieties at harvest. Isolation of seed crops should be checked whilst walking around its perimeter. For cross-pollinated crops, check all surrounding fields for any crops lying within the minimum prescribed isolation distance which might cross-pollinate with the seed crop. The seed crop should be physically isolated to prevent mechanical admixtures at harvest. The seed crop should be isolated from sources of seed borne diseases
ii. *Varietal purity and elimination of off-type plants* – There should not be more off-type plants present than the varietal purity standards allow. In the case of maize, sorghum and sunflower hybrid seed production, purification by rouging is acceptable for obtaining varietal purity (must be done before pollen shading). Mechanical emasculation must be applied before female plants have shed any pollen, and above all before the stigma of the

female plants are receptive. Roguing of off-types should be a continuous process from planting to harvesting. For example, if off-type plants are not removed before flowering stage, they cross pollinate with the seed crop resulting in contamination.

iii. *Species purity and elimination of weeds* – The seed crop should be free from weeds and other crop species, especially those whose seed maybe difficult to separate from the seed crop during processing e.g. wild oats in wheat. The presence of a number of crop species and weed species in a seed field can create problems not only in the seed crop, but also in the processing of the seed. Weeds compete for nutrients, sunlight and water with the seed crop. They also harbour pests and diseases that reduce seed quality.

iv. *Incidence of pests and diseases* – seed crops heavily infested with pests and diseases are rejected for certification as production of quality seed is prejudiced. For example, seed borne pests and diseases should be highly minimised as they can be transmitted to grain crops.

v. *Cropping history and land requirements* – The grower should provide details relating to previous cropping of the field. In the case of hybrid production, the same field cannot be used consecutively for the same species, to avoid the growth of fertile volunteers from hybrid seed production of previous years. Land intended for seed production should have a minimum interval of harvest season(s) between the seed crop and any previous crop as may be stipulated. Furthermore, the planting pattern of the male to female rows in a hybrid seed crop should be uniform throughout the field. Selection of the pattern mainly depends on the vigour and pollination capacity of the male line.

vi. *Varietal identity* - The first function of field inspection is to examine the seed crop as a whole to ensure it is consistent with the characteristics of the variety given in the official description, thus the crop must have the correct varietal identity. In the case of hybrid varieties, the inspector must be able to identify without difficulty the male parental lines and the female parental lines.

Seed Testing – After the seed has met all field standards, it should be tested in registered laboratories for minimum purity and germination standards outlined in the legislation. Testing is normally done by seed analysts (Table 1.1) before the registered and inspected seed is sold. The seed must also:

a) Have labels;
b) Be non-expired;
c) Sold by authorised people with valid seed sellers' licences; and
d) Stored properly for maintenance of quality.

The numerical data for seed testing highlighted for the period October 2009 to September 2010 (Table 1.2) reflect the quality and quantity of seed entering both the domestic markets and the international markets respectively.

Table 1.1. Seed Inspectors and Seed Analysts from various organisations

Organisation	**No. of Inspectors**	**No. of Seed Analysts**
PRIVATE		
• SEED-CO	11	3
• AGPY	3	-
• CHEMICO SEEDS	3	-
• NATIONAL TESTED SEEDS	2	2
• PANNAR	3	-
• PIONEER SEEDS COMPANY	3	-
• QUTON	9	4
• ZIMBABWE TOBACCO SEED ASSOCIATION	3	-
• ZIMBABWE POTATO MICROPROPAGATION ASSOCIATION(ZPMA)	1	-
• AGRICROP INTERNATIONAL	1	-
• ZIMBABWE SEED POTATO ASSOCIATION (ZSTA)	1	-
• 600 SEEDS	-	-
• PLATINUM AGRICULTURE	1	-
• PRIME SEEDS	1	-
• ARDA Seeds	2	-
• PRISTINE SEEDS	1	-
• PROGENE SEEDS	2	-
• FSI AGRICOM HOLDINGS	2	-
• REAPERS	1	-
• SANDBRITE	1	-
• LOMAQ	-	-
• DAR AL SA LAM	-	-
• CAPSICUM	-	-
• Forestry	-	3
• TRB	4	3
PUBLIC – SEED SERVICES	12	18

Table 1.2. Number of local samples, export and import samples, quantities of exports and imports tested for the period October 2009 – September 2010

Type of seed	***Local samples**	**Export and Import samples**	**Exports (kgs)**	**Imports (kgs)**
Cereals	1260	114	2 498 050.00	2 531 670.00
Cotton	443	39	20 000.00	---
Legumes	511	6	1 187 613.00	552 800.00
Tobacco	430	76	360 031.00	---
Trees	74	---	---	---
Vegetables	293	32	6 320.00	---
Grass	23	23	92 270.00	---
Sunflower	54	---	---	---
Sesame	1	---	---	---
Total	**3089**	**290**	**4 072 014.00**	**3 084 470.00**

NB. Local samples tested by the NSA. Some seed companies do tests their own locally produced seed.

1.4. Marketing of seed

The Seeds Act clearly stipulates that only quality guaranteed seed (certified seed) should be offered for sale. This is high quality seed whose genetic purity and identity is assured.

To facilitate traceability, only registered seed companies, through licenced seed sellers should sell seed. Even if one is a registered seed grower under an authorized seed company, it is an offence for a grower to sell seed directly to the public. If one is found guilty, they are liable to a fine, or imprisonment, or both according to Section 24 of the Seeds Act.

Authorized seed sellers are required to clearly display certificates on premises where seed is sold. Certificates should also be accompanied by valid renewal slips, as licences are renewed annually.

There are two classes of seed sellers' licences:

a) **Class 'B'** (*wholesalers*) that are allowed to re-pack seed with the consent of the supplier; and
b) **Class 'C'** (*retailers*) who can only sell seed in their original containers as provided by the seed company.

All authorised seed sellers are obliged to sell seed that is properly packaged. Packages of certified seed should be clearly labelled and show:

a) name and address of seed company;
b) variety name and type of crop, and
c) class of seed, for example 'foundation' or 'certified' seed.

A *tag* is either placed inside the bag or sewn on the upper part of seed bag. It should have the following information:

- Year of production, type of seed crop, processor's and lot numbers.
- purity and germination test results and
- Expiry date – seed should be sold within a year of the date indicated on the tag (label).

The information on the tag can be used as a point of reference when problems arise with the seed sold, thereby enabling a buyer of seed to receive compensation accordingly.

All seed for sale must only be distributed to authorized wholesalers and retailers by licensed seed companies. Seed storage is a prerogative of the seller of seed in accordance with *Section 25 of the Seeds Certification Scheme, which* stipulates that a seller of certified seed shall ensure that seed is stored separately from unclean seed or other plant products; and protected against rodents, insects, excessive moisture, heat, radiation and harmful substances.

1.5. Conformity with regional standards adopted by SADC

SADC Seed Certification and Quality Assurance System is a component which introduces the use of common terminologies, standards, procedures, seals, labels and a certification scheme in order to guarantee the production and sale of high quality seed throughout the region (Seed Update, 2007). The synergies between the national and the SADC regional certification systems acknowledge the role of the National Seed Certification Authority (NSA). The NSA in both

systems is responsible for authorizing samplers, field inspectors and accredit/register laboratories. Furthermore, the seed inspectors and seed samplers to be authorized must have passed a prescribed seed technology course and participated in at least one season's practical training under the mentorship of an already authorized specialist. The two systems also provide for the National Seed Certification Authorities to register seed fields and issue inspection reports. In addition, seed traded must meet the minimum laboratory standards. Furthermore, Seed traded under other internationally recognized systems is acceptable for both systems. The national and SADC systems also agree with the fact that all samples shall be drawn from the seed lots by authorized staff in accordance with the Rules for Seed Testing of the International Seed Testing Association (ISTA). To monitor that the Seed certification system both at national and regional level operates satisfactorily, the National Seed Certification Authority has the right to conduct post-control tests.

The anomalies between the national and the SADC regional certification systems are in accordance with the specific provisions. The SADC regional System provide formats for SADC seals and labels to companies that are producing seed under the System whereas although seals are provided at the national level, labels are not. Accreditation of personnel is accompanied by issuance of certificate or identity card at SADC level, whereas at national level they are just gazetted. Naming of seed classes and color of labels – National system has 4 classes (Breeder Seed, Foundation Seed, Certified Seed and Standard Grade Seed) while SADC has 6. The SADC System employs the following seed certification classes, codes and colour of labels:

- Breeder's Seed,
- Pre-basic seed (Code = A, Colour of label = violet band on white),
- Basic Seed (Code = B, Colour of label = white)
- Certified Seed (1st. Generation) (Code = C1,Colour of label = Blue)
- Certified Seed (2nd. Generation) (Code = C2,Colour of label = Red) and
- Quality Declared Seed (Code= QDS, Colour of label = Green) .

Standard grade seed class within the national system can be equated to quality declared seed (QDS) under the SADC system, while foundation seed can be equated to basic seed. The national regulations are not in conflict with SADC system that requires that only listed varieties can be produced as QDS.

While labels are required in the Zimbabwe certification system, colours of labels advocated at SADC level are not a prerequisite. Each Seed company is free to use any colour of its choice. Anomalies are also visualized from the specific requirements for field and laboratory standards of individual crops (Annex 2 and 3), in particular with reference to isolation distances in some crops which are much higher than what is acceptable at national level. This is also because this was not reached at scientifically and there is need to validate the approaches that led to suggestions of different field standards. The national certification system considers all crops conversely to the SADC system which has initially considered 15 crops at SADC level, considered to be the major food security crops.

1.6. Institutions and organizations involved in the national seed sector

These are the key players in the seed industry, and each player (Table 1.3) has a vital role to play, which should be respected by other stakeholders. This ensures maintenance of order in the seed

industry. List of the key stakeholders involved in the seed industry (Annex 4) comprises public (breeding institutions), commercial (seed companies and retailers) and voluntary (mostly NGOs).

Table 1.3. Key stakeholders in the seed industry

Stakeholders	**Role**
Breeders (both public and private)	Develop new varieties that meet farmers' needs
Government	➢ Regulates and administers activities related to seed through Seed Services and Ministry of Agriculture ➢ Provides farmer extension services through AGRITEX
Registered Seed Companies	Multiply and market good quality seed of known varieties
Farmer organizations	Represent farmers' interests
NGO's	Advocacy and distribution of seed
Seed traders	Seed sellers including wholesalers and retailers
Farmers	End users of seed

1.7. Area of registered seed crop and seed production estimates

If seed production is done when all things are stable, the production is supposed to be proportional to seed hectarage registered. A stable environment is a proviso for the affordability of all inputs timeously and therefore allow for the proper seed crop management. Furthermore, a stable economy is a pre-requisite for the access to reasonable labour costs. Area of registered seed crop for the 2001 - 2002 through to 2009-2010 agricultural seasons, also taking cognizance of the area of seed production and the estimated local production in metric tons (Table 1.4) shows the trend, which is largely a result of the economic environment. Maize has been chosen as it the staple food crop and remarks included articulate effects on the agricultural environment.

Table 1. 4. Area registered for Seed production (all crops) and total seed production (maize) from the 2005 through to 2010

Season	**Area for all crops registered**	**Area for Maize registration**	**Total Seed production (mt)**	**Remarks**
2001-2002	32304.700	9 377.63	47 000	Economy still good
2002-2003	44844.450	10 988.45	20 000	new growers because of land reform
2003-2004	54195.397	12 674.88	25 000	new growers had gained a little experience but yields still low and inflation was starting to affect businesses
2004-2005	34459.191	10 711.50	30 000	An improvement new growers gaining experience
2005-2006	33950.300	17 642.00	20 600	Inflation and drought
2006-2007	47144.800	13 382.00	23 000	Inflation and poor prices farmers not interested
2007-2008	48 598.47	9 648.00	18 500	Economic melt down
2008-2009	36 037.00	6 724.00	25 800	Economy improving dollarization
2009-2010	26 302.82	11 336.00	48 000	Big improvement due to the stable economy

NB. Data obtained from Annual Reports (2001-2010)

1.8. Sources of parent material.

Most seed companies source their breeding materials from public breeding institutions, mostly Crop Breeding Institute and CGIAR Centres like CIMMYT and ICRISAT. The main focus of Crop Breeding Institute under the Department of Research and Specialist Services is on variety development, maintenance and provision of breeders seed of various field crops including cereals (maize, wheat, sorghum, millets and rice); oilseeds (soyabean, sunflower and groundnut); pulse legumes (cowpea, bambara nuts and beans) and a tuber crop (Irish potato) (Ministry of Agriculture, 2008). The breeders' seed supplied is used in bulking of foundation and subsequently, certified seed for the market (Table 1.5). In fact, the institute is the sole *maintainer* of Irish potato varieties and supplier of their breeders' seed to potato seed companies for bulking. It is also the sole *maintainer* of **improved** bambara groundnut varieties and supplier of their breeders' seed to seed companies. ´

The Crop Breeding Institute is currently not able to supply adequate hybrid maize breeder seed because of the following constraints that the institute is facing:

- Inadequate land to expand the production of breeders' seed.
- Not able to meet the required isolation distances for seed production.
- Destruction of the maize breeders' seed fields by wild animals especially at Gwebi Variety Testing Centre (VTC).
- Wild pigs have contributed immensely to the reduction of expected yield of breeders' seed at Gwebi VTC.
- Inadequate irrigation infrastructure.
- Competition for resources with other crops e.g. irrigation, labour etc.
- Inadequate inputs in the form of fertilizers, chemicals and fuel.
- Non-exclusivity has resulted in CBI being overwhelmed by increased demand for breeders' seed by seed companies.
- Delays in payment of royalties by seed companies.

The measures to address breeder's seed include:

- Avail more land for production of breeders' seed.
- Rehabilitation of existing irrigation infrastructure will support increased production of breeders' seed.
- Expansion of irrigation infrastructure.
- The institute to be considered for support by RBZ in procurement of the required inputs.
- Construction of a durawall at Gwebi VTC to keep away wild pigs.
- Companies to be charged penalties for late payments

Zimbabwe also boasts of private sector participation in variety development. These include Seed companies like Seed Co, Pannar, Progene Seeds and Pioneer. These are maintainers of their parental materials and have breeding programmes around the country. In addition, parastatal organisations are maintainers of various breeding materials, with Tobacco Research Board in charge of tobacco plant material, Africa Centre for Fertilizer Development in charge of some dwarf maize varieties and SIRDC some drought tolerant maize varieties respectively.

Table 1.5. Breeders' seed requests by different seed companies

Company	Crop	Hybrid/Variety	Inbred Line
ARDA Seeds	Maize	ZS206	EL77 RL17P HS253
		SR52	N3 SC
		R201	NAW5885 K64r
		ZS255	WCOBY1P RA150P
	Sunflower	Mopane	RHA279
	Soyabeans	Bimha Mhofu	-
	Groundnuts	Falcon Teal	-
	Pearl Millet	PMV3	-
	Cowpeas	CBC1	-
Prime Seeds	Maize	R215	2Kba N3 NAW5885
		ZS206	RL17P HS253P
		SR52	N3 SC
	Sorghum	SV4	-
	Beans	Iris	-
	Pearlmillet	PMV3	-
Agri - Seeds	Maize	R201	N3 NAW5885 K64r
		SR52	N3 SC
		R215	N3 NAW5885 2Kba
Reapers	Groundnuts	Ilanda	
Pristine	Maize	ZS259	SV1P
	Groundnuts	Jesa	-
	Pearl Millet	PMV3	-
	Sorghum	SV4	-
	Cowpeas	CBC2 CBC3	-
National Tested Seeds	Soyabeans	Bimha	-
	Cowpeas	CBC2	-
	Sunflower	Peredovik	-
FSI Agricom	Soyabeans	Roan	-
	Groundnuts	Tern	-
AGPY PVT LTD	Sorghum	SV4	-
	Soyabeans	Soma	-

1.9. Future plan of the country for standards for seed certification

The plan for the country to enhance standards for seed certification is to motion for the validation of both field and laboratory standards at SADC level, as most of these are depended on land topography and climatic conditions. However, if implementation of the SADC harmonized documents is effected earlier, in order to allow for SADC trade the regional standards will be used. Local standards will still be used for those seed companies whose niche market ends within the national boundaries.

Furthermore, there are key measures which have to be addressed in order to realise the full benefits that can be accrued through applying seed certification standards to a highly managed seed crop. These include:

1. Irrigation rehabilitation – This is pertinent to enable public research institutions to maximise breeding programmes and private sector to optimise their seed production.

2. Government farms leased to seed companies – This will enable seed companies to produce adequate seed for the country under controlled management. The advantages include:
    a. Guaranteed seed volumes and quality i.e. annual growth in volumes towards meeting national requirements.
    b. Increase plant capacity utilization i.e. currently operating at 30 %.
    c. Close control of production processes from the field up to delivery.
    d. Achievement of high yields (> 5t/ha)
    e. Early seed deliveries and early supply to farmers.
    f. Imparting productive farming knowledge and technology to adjacent farms/farmers.
    g. The own production farms will be fully utilised throughout the year, as wheat seed will also be grown in winter.

3. Decentralisation of the Certifying Authority (Seed Services Institute) – The current status of the Certifying Authority is inhibitory to enhancement of seed production as the Institute is centralised, only located in Harare. With the many players involved in seed production encompassing almost all provinces, it is imperative that some sections of the institute be decentralised in order to efficiently and timeously be able to perform regular series of checks on fields registered for production and of seed samples provided by seed companies. But the companies themselves are also expected to apply high standards in their efforts to conform to the national requirements and regional certification system. Seed Services needs to be closer to production areas and be mobile in order to execute spot checks and enforce the standards to monitor any anomalies. This may be difficult where there Certifying Authority does not have satellite stations, adequate staff, transport facility and funding to do so. It might be necessary to align the seed quality controls with resource capabilities.

4. Incentive measures – This applies mainly to public institution to guarantee the retention of experienced technical staff, otherwise if not addressed government will forever remain a training ground for the private seed industry. Staff attrition is an impediment to continuity in seed certification, quality monitoring and public breeding programmes. The time lag for training new staff is not less than 3 agricultural seasons and this therefore affects seed production enhancement.

5. Power and fuel – Erratic power and fuel supplies are resulting in farmers incurring huge losses due to operational inefficiencies. Government should improve power system in order to be able to utilize irrigable land and enhance winter seed production.

Chapter 2: **Variety evaluation, release and registration**

2.1. Background information and responsible body

The purpose of variety release and registration in Zimbabwe is to verify that only unique, distinct and stable (DUS) varieties with a minimum value for cultivation and use (VCU) enter the market. In principle, the system operates as a tool for the management and transfer of new varieties developed by public and private breeding and research organizations in the country. It recognizes the contribution and merits of new varieties for commercial production in diverse or specific agro-ecological regions.

Seed Services, part of the public agricultural research system, has a broad mission to serve agriculture, particularly farmers and the general public. The institution is the secretariat to the National variety release panel, which makes decisions on whether or not to release new varieties based on the adequacy of the submitted VCU data from public or private research organisations. Public and private research organisations conduct research in crop breeding and genetic improvement to benefit the public and support the agricultural development and release of improved germplasm and new crop cultivars.

Data from research organisations mostly articulate diversity in agronomic, horticultural, and industrial uses, and any other preferential merits of the varieties in comparison with existing varieties. Once a new variety is released, it is deemed available for commercial production. This is expected to maximize public benefit as it will be utilized by farmers and consumers. However, even though a new variety released benefits the public, when it is multiplied it needs to be managed to retain genetic purity. Variety or designated names provide identity and recognition to the originator of the improved plant materials. Commercial production and the distribution of plant releases are essential for both large and small acreage crops. Success of variety release assures technology transfer from breeders to the seed companies involved in the production of certified seed and its subsequent marketing. Research organisations generally serve as a primary producer and distributor of new crop varieties and depend upon the private sector or registered seed companies to multiply and market seed.

Below is the name and contact details of the head of body responsible for seed certification:

Claid Mujaju (Head)
Seed Services Institute
Department of Research and Specialist Services (DR&SS)
Fifth Street Extension, Harare.

Postal Address : P.O. Box CY 550, Causeway, Harare, Zimbabwe.

Telephone Numbers : +263 4 720370/704532-6

Telfax : +263 4 791223

Mobile : +263 712 611 765

http://tfss.tamu.edu/for_breeders/variety_release_procedures/index.php. Variety Release Procedures, 7 September 2010.

2.2. Variety evaluation, release and registration system

An application for recognition of a variety for certification is processed in accordance with the requirements laid out in section 10 of the Seeds (Certification Scheme) Notice, 2000 (Statutory Instrument 213 of 2000), of the *Seeds Act (Chapter 19:13)*. Guide to Application for Recognition of Crop varieties is provided (Annex 5).

VCU data is based on variety performance from at least 2 seasons and at least 5 sites. Data is collected from replicated trials and should state the LSD (Least Significant Difference) and Standard Error (SE) for all quantitative traits. Information on response to important constraints (such as drought tolerance etc.) is critical and at least one control variety from widely grown varieties of same crop species already recognized in Zimbabwe is used. Performance data is attached to the Application Form S.C.S.2 (Annex 6).

Decision to approve the release of varieties in Zimbabwe is reached following the presentation to and evaluation of variety release applications by the Variety Release Panel on a prescribed date. The Variety Release Panel constitutes members from various stakeholders and includes representatives of research organisations, farmer associations, industry and consumers who are the potential users of the varieties.

Generally, a variety is released based on collection of sufficient data on variety performance (VCU) and passing of the DUS tests.

2.3. Crops included in the variety evaluation, release and registration system

After variety evaluation and release, the new varieties are finally registered in the government list referred to as the Second Schedule (Annex 1). The Second Schedule is updated whenever a new variety is released as well as if old varieties no longer meet the DUS criteria or their genetic integrity is questionable.

2.4. Conformity with SADC variety evaluation, release and registration

The SADC Variety Release System provides for a shorter period of testing and releasing on new varieties instead of the current system of testing new varieties for 2-4 years in each Member State.

A variety released in two Member states will be allowed to be marketed in the rest of the countries with similar agro-ecological conditions (SADC Update, 2007).The comparisons of the national practice and SADC protocol on variety release tabulated below (Table 2.1) indicate that they are more similarities than differences.

Table 2.1. Comparison of key elements of variety release (Adapted from Mujaju, 2010)

Key element	**National**	**SADC**
Release application	Required	Required
Reference seed sample	Required	Required
Value for cultivation and use (VCU)	Required	Required
DUS tests	Required	Required
Seasons for performance trials (Variety tests)	At least two growing seasons or 2 years	two growing seasons or 2 years
Number of sites	At least 5 in relevant agro-ecologies	Crop-specific relevant growing environments
Variety listing	2nd Schedule	SADC Variety Catalogue and Variety database
Period of validity of registration	Not available	20 years
Variety verification	Variety Panel Required	National Seeds Authority and SADC Project Management Unit
Application fees	Initial application fee required	Initial application fee required
Other fees	Annual fee for the variety to remain listed	Annual fee required

2.5. Future plan of the country for variety evaluation, release and registration

The country intends to establish an electronic national variety catalogue, with substantial information compared with the existing 2nd Schedule. The information to be captured would include:

- Variety denomination
- Year or release
- Days to maturity
- Uses
- Agroecological zone
- Etc.

As a future plan an Independent Variety Release System is vital. The current one operates on a goodwill basis but for regional and national variety development, the National Variety Release System should operate with an independent national variety release committee that seats as and when required to avoid delays. The panel should be accorded a formal status with an operational budget.

Chapter 3: **Phytosanitary measures**

3.1. Background information and responsible body

Phytosanitary measures are often required for imported commodities to prevent the introduction of quarantine pests. Such measures need to be appropriate for a specific commodity and effective against the quarantine pests of that commodity. The Plant Quarantine Services is governed by the Plant Pests and Diseases Act Chapter 19:08. This Act of Parliament gives Plant Health Inspectors (over 108 Plant Health Inspectors stationed at exit/ entry points and inland stations) regulatory powers to inspect, disinfect and eradicate pests and disease on behalf of the Minister of Agriculture, Mechanisation and Irrigation Development.

The purpose of the Phytosanitary measures is to enhance safer and faster movement of seed (SADC Secretariat, 2008). In the absence of harmonization, each country has a different list of pest and diseases, and as such would prefer to inspect from the source before imports are effected. This would however increase the cost of seed borne by the farmer, while delaying seed movement across borders. With seed policies harmonization, countries establish an agreed set of pest and diseases of economic importance based on science. This implies that they will be a reduction in the number of pests and diseases that will be checked on the borders hence a reduction in the costs.

Most of the pests and diseases being checked by SADC countries are not critical and the number checked could be significantly reduced and cut on the time and cost involved in the process. Testing quarantine measures for seeds will be done for pests which are not common to SADC countries. Re-testing of seed consignments on arrival from importing country may be reduced or no longer necessary unless justified. The need for a country to test seeds to be re-exported after a period in transit maybe reduced. When it has been established by the importing SADC country that the consignment meets SADC requirements, then the seeds can be moved to any other SADC country without further testing.

Below is the name and contact details of the head of body responsible for Phytosanitary measures:

Dr C. Mguni (Director)

Plant Quarantine Services

Department of Research and Specialist Services (DR&SS)

Fifth Street Extension, Harare.

Postal Address : P.O. Box CY 550, Causeway, Harare, Zimbabwe.

Telephone Numbers : +263 4 704532-6

Telfax : +263 4 700339

Mobile : +263 712 611 772

3.2. Phytosanitary measures including the overall process, necessary documentation, and quarantine pest list for the country;

The thrust of Phytosanitary documentation and procedures relate to seed lots moving in the Region and in international trade (Makumbe, 2010) . The seed entering international or regional trade must be accompanied by appropriate documentation which serves to certify that the seed lot complies with Phytosanitary requirements.

The following key documents are required for compliance to Phytosanitary requirements and they are issued under different circumstances as stipulated:

1. **Plant Import Permit** issued by the importing country authorizing the importation of seeds in accordance with specified Phytosanitary requirements. The Permit must accompany the seed lot and be presented to inspectors at exit and entry points.
2. **Phytosanitary Certificate** issued by the exporting country and serves to certify that requirements specified on the Import Permit have been met. The Phytosanitary Certificate must therefore also be presented to the inspectors at exit and entry points.

3. **Non-compliance Notification** issued by the importing country and forwarded to the National Plant Protection Organisation (NPPO) of the exporting country in the case where consignments of seeds, and/or the accompanying Phytosanitary Certificates, do not comply with the conditions set in the Plant Import Permit, and/or where a quarantine pest has been intercepted.

4. **Re-export Phytosanitary Certificate** which is only required when a consignment of seeds, arriving from the export country, is being stored and/or repacked by the importing country under circumstances which may expose the consignment to infestation or infection before re-export to a third country – or if the consignment stayed longer in the transit country than determined by the NPPO. The Certificate is issued by the Country where the seeds was in transit and is attached to the Phytosanitary Certificate issued by the exporting country.

Zimbabwe has published a book of 179 pages on the List of Plant Diseases in Zimbabwe. This can be accessible from the responsible body but there list does not exist electronically.

3.3. Conformity with regional phytosanitary measures in SADC if there is harmonized quarantine pest list or any other harmonized standards on phytosanitary measures

SADC Phytosanitary Measures for Seed System is a component that seeks to promote the safe movement of seed with respect to pests and diseases (Seed Update, 2007). To enhance faster movement of seed the SADC regions has developed two Rationalised Pest Lists. The first one is a SADC list of pests which require control when there is seed trade between SADC Member states, and the second a SADC list of pests which require control when there is seed trade into a SADC country from outside the Region. The lists only include pests which are of economic significance, not common in the SADC Region and which are seed borne. The advantages of the rationalised Pest List re-testing of seed consignments on arrival in the importing country may be reduced and eventually no longer be necessary except in cases where there are concrete reasons to assume that a new pest and/or disease may be introduced; reduction of test of seed which is to be re-exported after a period in transit, and since fewer pests will need to be checked at entry points, clearance and entry of consignments will be faster. For seed movement from a country outside SADC to a SADC country when it has been established by the importing SADC country that the consignment meets SADC requirements then the seed can be moved to any other SADC country without further

testing. The Zimbabwean list of plant diseases include a wide array of diseases occurring on plants and seed important for food and agriculture. As a country, there isn't any established list of pests to monitor on seed although pre-shipments inspections are done to check on them. Checking of pests is done as a matter of common knowledge through visual assessments.

Member States will adopt common formats for the various certificates and other documents and ensure that the certificates provide the necessary information. The 3 documents, which are designed in line with such requirements includes, Plant Import Permit, Phytosanitary Certificate and Re-Export Phytosanitary Certificate.

Major differences in Types of inspections done in the SADC may be a key issue in the harmonization. Zimbabwe Plant Quarantine Services (P.Q.S) carries out inspections which are not stated by the protocol and these include field inspections during active growth of seed crops and pre-shipment inspection of important seed crops mainly due to stored product pests which in Zimbabwe are restricted to some areas and still under management. It is also notable on documentation to do with Re-export permit that the NPPO of Zimbabwe does not have a set out re-export permit in use although the format is available. Furthermore, the harmonised pest lists does not include arthropods pests which could spread through seed trade.

3.4. Future plan of the country for phytosanitary measures

Zimbabwe through Plant Quarantine Services and relevant stakeholders are planning to revise their Plant Pests and Diseases Act Chapter 19:08 to be in compliance with the SADC Phytosanitary measures. Furthermore, the NPPO with the intervention of other seed stakeholders (e.g. Researchers, farmers, seed houses extension personnel) considers to carry out Pest Risk analysis so as to update the establish and update pest list. At regional level and with concerned parties it is also prudent for National Plant Protection Organisation personnel to be provided with a discussion forum to consider harmonized inspection procedures and harmonized arthropod pest lists.

Chapter 4: **Plant Variety Protection (Intellectual Property Rights)**

4.1. Background information and responsible body

Plant Breeders' Rights (PBRs) entails the recognition of varieties and variety protection. Other than issues of safeguarding varieties from bio-piracy and meeting the requirements of WTO, PBRs are a form of Intellectual Property Rights which are important in seed industry development for the encouragement of investment in plant breeding; multiplication of foreign varieties in a country; development of varieties adapted to specific conditions of each country; maintenance of varieties, and protection of own varieties against appropriation.

The presence of the plant breeders' right helps to recover costs associated with breeding of new varieties and acts as a means of revenue generation. The generation of funds through seed sales, fees, and other business terms is essential to recover some development costs and protection expenses, maintain competitive science, and enhance future crop improvement research. Financial terms and license provisions on new crop varieties are viewed in terms of royalties, calculated as a proportion of the sales made by Seed Company and must be realistic and consistent with the biological potentials and business environment.

The Head of Seed Services is the registrar of plant breeders' rights in accordance with the Plant Breeders Rights Act Chapter 18:16 (copy submitted). The purpose of the act is to acknowledge the achievement of breeders of new plant varieties by making available to them an exclusive property right on the basis of a set of uniform and clearly defined principles.

Below is the name and contact details of the head of body responsible for plant variety protection:

Claid Mujaju (Head)
Seed Services Institute
Department of Research and Specialist Services (DR&SS)
Fifth Street Extension, Harare.

Postal Address	: P.O. Box CY 550, Causeway, Harare, Zimbabwe.
Telephone Numbers	: + 263 4 720370/704532-6
Telfax	: +263 4 791223
Mobile	: +263 712 611 765

4.2. Plant Variety Protection system in the country including the overall process for running the Plant Variety Protection and necessary documentation

The process for running the plant variety protection involves the following steps:

- Filing of application with Seed Services,
- Preparation for DUS tests,

- Examinations,
- Decision and
- Publication through the government gazette

Before PBRs can be granted, documentary examination of technical questionnaires is required in addition to plant material for distinctiveness, uniformity and stability (DUS) testing and application fees. Seed Services causes the grow-outs of a DUS trial by an applicant who requires PBR as well as selecting comparable varieties for test. Existing harmonised DUS testing system of UPOV are also used. In addition UPOV test guidelines which are species/crop-specific recommendations developed by crop experts with detailed characteristic descriptions are used for DUS testing.

If it is concluded that candidate variety fulfills the condition for registration, the Registrar for PBR (Head of Seed Services) enters the variety in the PBR Register and causes publication of the variety in the Government Gazette. Publication covers information on denomination of the variety, characteristics of the plant, name and domicile of the holder of breeder's right and duration of breeder's right. The Scope of protection in Zimbabwe refers to the term of protection of varieties and this shall be twenty-years from the date of granting, with a possible extension of five (5) years.

Criteria for granting for variety protection to be effected, is the fulfillment of the requirements that a variety should have a suitable denomination, meet DUS and/or novelty. Rejection of granting variety protection is based on the failure of a variety to meet the conditions for protection; failure by the applicant, without justifiable reason, to comply with the order to submit materials or the order to change the denomination, or if the applicant rejects, without justifiable reason, on-site inspections.

Crop varieties released and granted variety protection presently include aster, apple, barley, bean, citrus, coffee, cotton, granadilla, groundnut, hypericum, maize, millet, oats, paprika, peach, Peruvian lily, potato, protea, rape, rose, sorghum, soyabean, statice, strawberry, sunflower, tobacco, trachelium and wheat.

4.2. Conformity with proposed regional Plant Variety Protection in SADC

In almost all things with regards to the scope and conditions for protection, Zimbabwe's plant breeders' rights legislation conforms to the draft SADC plant breeders' rights protocol. However, Zimbabwe legislation does not cover issues of essential derived varieties, which are covered under the SADC plant breeders' rights protocol.

4.3 Future plan of the country for Plant Variety Protection

Future plan of the country is to complete accession to UPOV. Instead of acceding to UPOV 1978, the country is in the process of revising its plant breeders' rights legislation to conform to the UPOV Convention of 1991. Once, the PBR legislation conforms to the UPOV Convention, it will be in line also with the draft SADC plant breeders' rights protocol which has been modeled along the framework of the UPOV system.

Chapter 5: **Seed import/export documentation and procedures**

5.1. Background information

This seed import/export documentation and procedures provides transparency and clarity to the national systems utilized by the government agencies involved in the approval of imports and/or exports of seed. The procedure combines the requirements of the Seed Certifying Authority and the National Plant Protection Organisation, as well as the Economics and Marketing Department to reduce the time and personnel constraints that translate into additional and sometimes expensive and unnecessary costs.

The objective of this procedure is to define the sequence of events, interfaces, and responsibilities involved in the process of approving an application for a seed import/export permit.

5.2. Seed import and export procedures and documentation

5.2.1 Seed export procedure

If a company or individual wants to export seed, the following procedures have to be followed:-

1. Register the seed crop with Seed Services to allow Phytosanitary field inspections to be conducted whilst the crop is actively growing. These inspections are done in collaboration with Plant Quarantine Services (PQS).
2. After harvesting, the seed should be labelled and packed into identifiable seed lots.
3. Authorized Government samplers then sample the seed lots and seal them. The sample drawn is submitted to the Government laboratory (at Seed Services) for testing.
4. At the Government laboratory, samples are tested for minimum purity and germination standards. If these standards are met, Orange International Certificates (OIC's) are issued to the exporter.
5. The OIC accompany the application form (Annex 7) obtained from Seed Services and enables the exporter to apply for a Phytosanitary certificate at PQS. The certificate confirms that the seed is free of pests and diseases of quarantine importance for the importing country.
6. If the Phytosanitary certificate is granted, the exporter proceeds to Ministry of Agriculture, Mechanisation and Irrigation Development (AMID), Department of Economics and Marketing for the issuance of an export permit.

Note that the Ministry of Agriculture has the final say on whether the seed can be exported or not.

5.2.2 Seed import procedure

If a company or individual wants to import seed, the following procedures have to be followed:-

a) The applicant must know the variety, quantity and lot number of seed to be imported. The variety to be imported should be registered in Zimbabwe.
b) Supporting documents to meet 1 above are (a) seed testing results of the seed to be imported, which is an OIC or any official seed testing certificate, and (b) clearance letter regarding GMO (Genetically Modified Organism) status of the seed. Zimbabwe does not allow importation of genetically modified seed.
c) The documentation of 2(a) and 2(b) is attached to import application forms (Annex 8) obtainable from Seed Services.

d) After verification and approval of documents by Seed Services, the application is forwarded to PQS, for the issuance of phytosanitary certificates, which highlight pests and diseases prohibited in Zimbabwe.
e) If the phytosanitary certificate is granted, the importer proceeds to the Ministry of Agriculture, Mechanisation and Irrigation Development (AMID), Department of Economics and Marketing for the issuance of an import permit.

Below are the names and contact details of the heads of bodies responsible for facilitating export and import of seed:

1. **Obtaining seed import and export applications forms, and first port of call**:

Claid Mujaju (Head)
Seed Services Institute
Department of Research and Specialist Services (DR&SS)
Fifth Street Extension, Harare.

Postal Address : P.O. Box CY 550, Causeway, Harare, Zimbabwe.
Telephone Numbers : +263 4 720370/704532-6
Telfax : +263 4 791223
Mobile : +263 712 611 765

2. **Obtaining Phytosanitary certificate**:

Dr C. Mguni (Director)
Plant Quarantine Services
Department of Research and Specialist Services (DR&SS)
Fifth Street Extension, Harare.

Postal Address : P.O. Box CY 550, Causeway, Harare, Zimbabwe.
Telephone Numbers : +263 4 704532-6
Telfax : +263 4 700339
Mobile : +263 712 611 772

3. **Obtaining import and export permits**:

Mrs. N. Zitsansa (Director)
Department of Economics and Marketing
Ministry of Agriculture, Mechanisation and Irrigation Development
1 Borrowdale Road, Harare.

Postal Address : Private Bag 7701, Causeway, Harare, Zimbabwe.

Telephone Numbers : +263 4 706081-9

Telfax : +263 4 734646

5.3. Conformity with SADC seed import and export procedures and documentation

The national seed import and export procedures begin with Seed Services (National Seeds Authority) from where the applications are obtained, and then subsequently to the NPPO and the Department of Economics and Marketing respectively. This is paramount as what determines the nature of what is called seed is enshrined in the Seed Act. However, the SADC procedures has come up with the process management which is a tool utilized in the public and private sector for the control processes, procedures, and activities to streamline operations and assumed to minimize faulty product (Harries and Cortes, 2005). The content of each procedure includes the purpose, scope, references, definitions, responsibilities, activities, records, and flowcharts. Each procedure indicates why the procedure is important and is described in the purpose, while the scope defines the beginning and the ending of the procedure. Each procedure contains the description of the activities that define the “what”, “when”, and “where” and describes the sequence that must be followed. The activities are directly linked with the flowchart that provides a visual representation of each procedure. The major highlights of the SADC system are that it distinguishes operational procedures and two support procedures. Most aspects of the seed exports and imports done under the NPPOs are considered as operational while those done by the National Seed Certifying Authority are regarded as support procedures. The National Seeds Authorities should be the focal point for monitoring seed moving into regional or international trade in terms of volumes and kind of seed traded. Furthermore on seed import the SADC gives an optional treatment by suggesting that some seed may not require authorization of the National Seeds Authority (NSA). On seed export procedure, again the SADC system recognizes the NPPO of the exporting country as the central institution to receive the seed export application with the requirements from the NPPO of the importing country and this creates a vacuum in which the NSA cannot monitor seed movement. Furthermore, the SADC procedures establish memos as a mode of reporting.

5.4. Future plan of the country for seed import and export

It is imperative that the NPPOs and National Seeds Authorities (NSAs) in the country and even within SADC meet to discuss on the procedures for seed import/exports, and provide guidelines that allow the NSAs to monitor seed movements. Zimbabwe has been a net importer of seed for the past ten years. Cereals mostly maize seed has been imported from the SADC region, in particular South Africa, Zambia and Malawi. Seeds of small grains like sorghum and millets were generally imported from South Africa and Botswana. Most vegetable seeds were imported from the Netherlands and South Africa. Zimbabwe has however been involved in a few exports, most of which included grasses to the Middle East countries and Pakistan. Some vegetables were also exported to South Africa, Egypt and Jordan. For cereals, exports have been on maize experimental lines into the SADC region and Kenya.

Chapter 6: **Membership to International Organization**

6.1. OECD

Seed Services is a participant in the Organisation for Economic Cooperation and Development (OECD) certification scheme for maize, sorghum, cereals, herbages and oil seed crops.

6.2. ISTA

The Seed Testing Station at Seed Services is the official seed-testing laboratory. It is accredited to the International Seed Testing Association and performs various tests on seed to ensure that seed sold to farmers performs well under field conditions.

6.3. UPOV

Zimbabwe is not yet a member of the Union for protection of new varieties (UPOV). However, it is still in the process of acceding to UPOV 1978.

6.4. CBD/ ITPGRFA/Catagena Protocol/

Zimbabwe is party to International Conventions that relates to Plant Genetic Resources (PGR) Conservation and Sustainable Utilization. The country is a member to the Convention on Biological Diversity (CBD), the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), Catagena Protocol and Trade Related Intellectual Property Rights (TRIPs), to mention a few. These conventions have benefited the country through enhanced regional, International participation and collaboration. Amongst the benefits realized the list includes facilitated access to germplasm by breeders and researchers, access to improved varieties, technology transfer, scientific collaboration, sharing experience and capacity building.

Whilst the CBD and the ITPGRFA Agreements provided mechanisms for the protection of PGRFA and promote its sustainable utilization, the WTO Related Agreements [TRIPS, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary Standards (SPS) are more liberal and may have adverse effects on the conservation of PGR. The main challenge is the regulation of modern biotechnology in a manner that does not result in the depletion of PGR. As such Zimbabwe became party to the Cartagena Protocol on Biosafety (Biosafety Protocol). The protocol complements efforts of the CBD and allows countries that are Parties to the Protocol to apply the precautionary principle and prohibit or severely restrict the import of GMOs into their countries, where they believe scientific uncertainty exists concerning the safety of GMOs in terms of the environment and human health. The application of modern biotechnology, as in other parts of the world is controversial in Zimbabwe although it is accepted that traditional biotechnology techniques can be employed for the enhancement of PGR.

6.5. World Trade Organization's Agreement on Sanitary and Phytosanitary Measures (WTO-SPS)/ FAO IPPC

Zimbabwe is a signatory to the World Trade Organization's Agreement on Sanitary and Phytosanitary Measures (WTO-SPS).

Although it is not yet a signatory to the FAO-International Plant Protection Convention (IPPC) it follows International Standards of Phytosanitary Measures (ISPMs) drafted by the IPPC. There is however great need to ratify with the IPPC so as to be a signatory to it and fully participate in activities relating to it that enhance the recognition of the NPPO regionally and internationally.

CONCLUSION

In the SADC region, Zimbabwe boasts of a strong and well coordinated seed industry. The private sector participates in the development and introduction of new varieties on the Zimbabwean market. The varietal development by the private sector is strengthened by the Plant Breeders' Rights Act, which gives breeders rights to royalties on commercialization of their varieties by the seed companies. Zimbabwe has a goodwill kind of a system of variety release, in which members of the Variety Release Committee have to be negotiated with in order to seat for an assessment and consideration for a candidate variety for release. The arrangement if successful ensures a précised scrutiny of candidate varieties prior to their release and cultivates public confidence in varieties released. On the contrary, the members may not meet as the Committee has no budget and feels no obligation as there is no facilitation fee or incentives to cushion the members in mobility issues (transport & fuel).

The production and marketing of seed is almost entirely by the private sector. However, the provision of breeders' seed for public bred varieties involves the participation of the public sector, in particular Crop Breeding Institute. The private sector has been active in seed promotions such as through field days, demonstration plots, seed fairs, agricultural shows, posters, adverts in both print and electronic media to mention but a few. Seed Services is pivotal for private sector seed certification and quality control. The activities associated the certification process are so immense paving the way for some personnel from the seed companies to be licensed in order to carry out seed inspections, seed sampling and seed testing in accordance with the country's Seed Legislation. This service speeds up inspections, sampling and testing; and furthermore broadens the coverage of seed quality control. Seed Services has currently licensed four (4) private seed testing laboratories to test and certify seeds for local market. The laboratories conduct seed testing in accordance with guidelines from the Certifying Authority (Seed Services) of the government.

The number of seed companies has grown from one (1) in 1980 to twenty-one (21) to date with many more still applying for consideration. COMESA harmonization is likely to expand the seed industry by involving many regional players. There is no doubt that with many players the market will experience competition and in turn may result in reduced cost of seed to the farmer. However, to enhance seed production, the government should put in place measures and polices in a coordinated manner and streamline implementation across relevant sectors involved in seed production. Inputs availability and affordability, land leases and irrigation rehabilitation are fundamental to enhanced seed production.

REFERENCES

Harries A. and Cortes J. 2005. Seed Import/ Export Procedures Manual for Government Agencies. Seed Science Center Iowa State University.

Kadzere N.and Karadzandima L. 2007. Understanding Zimbabwean Seed Legislation. Seed Services, Zimbabwe.

Makumbe L. D.M. 2010. Quarantine and Phytosanitary Measures for Seed. Presented at Harmonised Seed Security Project (HASSP) National Workshop held Rainbow Towers – Harare, 30 June -2 July 2010.

Mujaju C. 2008. Seed Production in Zimbabwe - Profile on Seed Production Enhancement. Ministry of Agriculture, Mechanisation and Irrigation Development (unpublished).

Mujaju C. 2010. Comparison of the National Seed Variety Release Policy with the Sadc Protocol. Presented at Harmonized Seed Security Project (HASSP) National Workshop held Rainbow Towers – Harare, 30 June -2 July 2010.

SADC Secretariat, 2008. Technical agreements on the Harmonisation of seed in the SADC region, ICRISAT publication (www.icrisat.org).

Seed Services Annual Report 2001-2002. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2002-2003. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2003-2004. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2004-2005. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2005-2006. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2006-2007. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2007-2008. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2008-2009. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Services Annual Report 2009-2010. DR&SS, Ministry of Agriculture, Mechanisation and Irrigation Development, Harare, Zimbabwe.

Seed Update 26 (1), 2007. A Quarterly Publication of the SADC Seed Security Network

Annex 1. **Second Schedule**

KINDS AND VARIETIES OF SEED TO WHICH SCHEME APPLIES

KIND	VARIETY	MAINTAINER
1. Maize (*Zea mays* L.)	PHB3435	Pioneer Hi-Bred Zimbabwe
White hybrids	PHB3253	Pioneer Hi-Bred Zimbabwe
	PHB3043	Pioneer Hi-Bred Zimbabwe
	PHB30A15	Pioneer Hi-Bred Zimbabwe
	PHB3033	Pioneer Hi-Bred Zimbabwe
	PHB30R39	Pioneer Hi-Bred Zimbabwe
	PHB30R65	Pioneer Hi-Bred Zimbabwe
	PHB 30R73	Pioneer Hi-Bred Zimbabwe
	PHB 30H83	Pioneer Hi-Bred Zimbabwe
	PHB 30G97	Pioneer Hi-Bred Zimbabwe
	PHB 30G19	Pioneer Hi-Bred Zimbabwe
	PHB 30V53	Pioneer Hi-Bred Zimbabwe
	PHB 30D79	Pioneer Hi-Bred Zimbabwe
	PAN473	Pannar Seed (Pvt) Ltd
	PAN6363	Pannar Seed (Pvt) Ltd
	PAN6479	Pannar Seed (Pvt) Ltd
	PAN6243	Pannar Seed (Pvt) Ltd
	PAN6549	Pannar Seed (Pvt) Ltd
	PAN413	Pannar Seed (Pvt) Ltd
	PAN6777	Pannar Seed (Pvt) Ltd
	PAN383	Pannar Seed (Pvt) Ltd
	PAN31	Pannar Seed (Pvt) Ltd
	PAN61	Pannar Seed (Pvt) Ltd
	PAN67	Pannar Seed (Pvt) Ltd
	PAN55	Pannar Seed (Pvt) Ltd
	PAN5503	Pannar Seed (Pvt) Ltd
	PAN6823	Pannar Seed (Pvt) Ltd
	PAN599	Pannar Seed (Pvt) Ltd
	PAN6573	Pannar Seed (Pvt) Ltd
	PAN 7M-89	Pannar Seed (Pvt)Ltd
	PAN 53	Pannar Seed (Pvt)Ltd
	PAN 4M-19	Pannar Seed (Pvt)Ltd
	PAN 8M-95	Pannar Seed (Pvt)Ltd
	PAN 7M-97	Pannar Seed (Pvt)Ltd
	8071	Monsanto
	8061	Monsanto
	8051	Monsanto
	8041	Monsanto
	8031	Monsanto
	CG4141	Monsanto
	C3631	Monsanto
	SR52	Crop Breeding Institute
	R201	Crop Breeding Institute
	R215	Crop Breeding Institute
	ZS233	Crop Breeding Institute
	ZS255	Crop Breeding Institute

	ZS257	Crop Breeding Institute
	ZS261	Crop Breeding Institute
	ZS259	Crop Breeding Institute
	SC711	Seed Co Limited
	SC715	Seed Co Limited
	SC717	Seed Co Limited
	SC621	Seed Co Limited
	SC625	Seed Co Limited
	SC719	Seed Co Limited
	SC721	Seed Co Limited
	SC411	Seed Co Limited
	SC519	Seed Co Limited
	SC525	Seed Co Limited
	SC637	Seed Co Limited
	SC633	Seed Co Limited
	SC635	Seed Co Limited
	SC701	Seed Co Limited
	SC709	Seed Co Limited
	SC627	Seed Co Limited
	SC513	Seed Co Limited
	SC401	Seed Co Limited
	SC403	Seed Co Limited
	SC405	Seed Co Limited
	SC407	Seed Co Limited
	SC521	Seed Co Limited
	SC533	Seed Co Limited
	SC535	Seed Co Limited
	SC517	Seed Co Limited
	SC713	Seed Co Limited
	SC 715	Seed Co Limited
	SC 717	Seed Co Limited
	AC31	African Centre for Fertiliser Development
	AC71	African Centre for Fertiliser Development
	AC133	African Centre for Fertiliser Development
	PGS53	Progene Seeds
	PGS61	Progene Seeds
	PGS71	Progene Seeds
	ZAP 51	Agricultural Seeds &Services
	ZAP 61	Agricultural Seeds &Services
Yellow Hybrids	ZS108	Crop Breeding Institute
	ZS232	Crop Breeding Institute
	ZS240	Crop Breeding Institute
	SC 608	Seed Co Limited
	SC704	Seed Co Limited
	SC506	Seed Co Limited
	SC602	Seed Co Limited
	PAN6578	Pannar Seed (Pvt) Ltd
	PAN14	Pannar Seed (Pvt) Ltd
	PAN64	Pannar Seed (Pvt) Ltd
	C3330	Monsanto

	3308	Monsanto
	PHB3412	Pioneer Hi-Bred Zimbabwe
	PHB3442	Pioneer Hi-Bred Zimbabwe
	PHB30H22	Pioneer Hi-Bred Zimbabwe
	PHB30B50	Pioneer Hi-Bred Zimbabwe
	PHB30K70	Pioneer Hi-Bred Zimbabwe
	PHB3442	Pioneer Hi-Bred Zimbabwe
White Maize- Open-Pollinated	ZM421	Crop Breeding Institute
	ZM521	Crop Breeding Institute
	ZM423	Agpy (Pvt) Limited
	ZM623	Seed Co Limited
	ZM523	Seed Co Limited
	Kalahari early pearl	Seed Co Limited
	Matuba	Seed Co Limited
	Obatanpa	Seed Co Limited
Yellow Maize-Open-pollinated	----------	----------
2. Tobacco (*Nicotiana tabacum* L)	Kutsaga RK8	Tobacco Research Board
	Kutsaga 30R	Tobacco Research Board
	Kutsaga RK 22	Tobacco Research Board
	Kutsaga RK 23	Tobacco Research Board
	Kutsaga RK 26	Tobacco Research Board
	Kutsaga RK 27	Tobacco Research Board
	Kutsaga RK 28	Tobacco Research Board
	Banket 102	Tobacco Research Board
	Banket BRK1	Tobacco Research Board
	Banket BRK2	Tobacco Research Board
	Banket BRK3	Tobacco Research Board
	Banket BRK4	Tobacco Research Board
	Banket BRK5	Tobacco Research Board
3. Field Crops		
(1) Barley (*Hordeum vulgare* L.)	Kyle	National Breweries
	Dawn	National Breweries
	Caruso	National Breweries
	Hope	National Breweries
	New Canut	National Breweries
	Diamant	National Breweries
	Ruti	National Breweries
	Triumph	National Breweries
(2) Bean (*Phaseolus vulgaris* L.)	Iris	Crop Breeding Institute
	Nandi	Pannar Seed (Pvt) Ltd
	PAN148	Pannar Seed (Pvt) Ltd

	Bounty	Seed Co Limited
	Cardinal	Progene Seeds
	Speckled Ice	Progene Seeds
(3) Cowpea (*Vigna unguiculata* L. Walp.)	CBC1	Crop Breeding Institute
	CBC2	Crop Breeding Institute
	CBC3	Crop Breeding Institute
	PAN311	Pannar Seed (Pvt) Ltd
	IT18	Seed Co Limited
(4) Durum wheat (*Triticum turgidum var duram* L.)	----------	----------
(5) Groundnuts (*Arachis hypogaea* L.)	Falcon	Crop Breeding Institute
	Flamingo	Crop Breeding Institute
	Jesa	Crop Breeding Institute
	Teal	Crop Breeding Institute
	Ilanda	Crop Breeding Institute
	Tern	Crop Breeding Institute
	Natal Common	Crop Breeding Institute
	Nyanda	Seed Co Limited
	SC Orion	Seed Co Limited
(6) Bambara groundnuts (*Vigna subterranea*)	Kazuma	Crop Breeding Institute
	Mana	Crop Breeding Institute
(7) Oats (*Avena sativa* L.)	--------	----------
(8) Open pollinated sorghum (*Sorghum bicolor* L.)	SV1	Crop Breeding Institute
	SV2	Crop Breeding Institute
	SV3	Crop Breeding Institute
	SV4	Crop Breeding Institute
	Macia	Seed Co Limited
	Sila	Seed Co Limited
(9) Rice (*Oryza sativa* L.)	--------	----------
(10) Soya-bean (*Glycine max* (L.) Merr.)	Roan	Crop Breeding Institute
	Nyala	Crop Breeding Institute
	Soma	Crop Breeding Institute
	Bimha	Crop Breeding Institute
	Mhofu	Crop Breeding Institute
	Nyati	Crop Breeding Institute
	SC Serenade 4	Seed Co Limited
	Santa 2	Seed Co Limited
	Siesta 2	Seed Co Limited
	Solitaire	Seed Co Limited
	Soprano	Seed Co Limited
	Storm	Seed Co Limited

	Safari	Seed Co Limited
	Edamame	Seed Co Limited
	SC Squire	Seed Co Limited
	SC Saga	Seed Co Limited
	PAN891	Pannar Seed (Pvt) Ltd
(11) Sunflower (*Helianthus anuus* L.)	Mopane	Crop Breeding Institute
	Msasa	Crop Breeding Institute
	Peredovik	Crop Breeding Institute
	PAN7369	Pannar Seed (Pvt) Ltd
	PAN7392	Pannar Seed (Pvt) Ltd
	PAN7353	Pannar Seed (Pvt) Ltd
	PAN7351	Pannar Seed (Pvt) Ltd
	AGSUN5551	Seed Co Limited
	HV3037	Seed Co Limited
(12) Velvet bean (*Mucuna pruriens* (L.) D.C. var. utilis (Wall ex Wight) Bak ex Burek)	----------	--------
(13) Wheat (*Triticum aestivum* L.)	Dande	Crop Breeding Institute
	Insiza	Crop Breeding Institute
	Kana	Crop Breeding Institute
	Nduna	Seed Co Limited
	Shangwa	Seed Co Limited
	Smart	Seed Co Limited
	Sahai	Seed Co Limited
	Stallion	Seed Co Limited
	Sekuru	Seed Co Limited
	Nonsprout	Seed Co Limited
	Kame	Seed Co Limited
	Shield 1	Seed Co Limited
	Shine	Seed Co Limited
	Shorty	Seed Co Limited
	PAN 3490	Pannar Seed (Pvt) Ltd
	PAN 3492	Pannar Seed (Pvt) Ltd
4. Pasture Grasses		
(1) *Chloris gayana* Kunth	Giant Rhodes Katombora Rhodes	
(2) *Eragrostis curvula* (Schrad.) Nees	Ermelo lovegrass	
(3) *Panicum maximum* Jacq.	Sabi Panicum	
(4) *Paspalum guenoarum* Arech	Wintergreen Paspalum	
(5) *Paspalum notatum* Flugge	Paraguay grass	
(6) *Paspalum plicatulum* Michx	Beehive Paspalum	
(7) *Eragrostis curvula*	Umgeni	
(8) *Sectaria sphacclata* (Schumach.) Stapf & Hubbard ex M.B. Moss	Kazungula	
(9) Hybrid grass (Napier & Pearl millet)	PN-1	DR&SS (Matopos)
(10) Napier grass	NG1	DR&SS (Grasslands & Matopos)
(11) Napier grass	NG2	DR&SS (Grasslands & Matopos)

5. Cotton (*Gossypium hirsutum* L.)	Albar BC853	Cotton Research Institute
	Albar BB8714	Cotton Research Institute
	Albar SZ9314	Cotton Research Institute
	Albar TE9310	Cotton Research Institute
	Albar FQ902	Cotton Research Institute
	Albar FQ904	Cotton Research Institute
	Albar DF885	Cotton Research Institute
	Albar AG4869	Cotton Research Institute
	HAP1	Cotton Research Institute
	CY889	Cotton Research Institute
	LS-92-19	Cotton Research Institute
	MS2	Cotton Research Institute
	MS1	Cotton Research Institute
	QM301	Quton Company Ltd
6. Hybrid Sorghum (*Sorghum bicolor* (L.) Moench	DC75	Pannar Seed (Pvt) Ltd
	PAN888	Pannar Seed (Pvt) Ltd
	NS5511	Seed Co Limited
7. Seed Potatoes *(Solanum tuberosaum* L.)	Pimpernel	Crop Breeding Institute
	Montclare	Crop Breeding Institute
	BP1	Crop Breeding Institute
	Nyanga Amethyst	Crop Breeding Institute
	Jasper	Crop Breeding Institute
	Garnet	Crop Breeding Institute
	Montclare	Crop Breeding Institute
	Diamond	Crop Breeding Institute
8. Pasture Legumes		
(1) *Desmodium uncinatum* D.C.	Silver leaf Desmodium	
(2) *Lotononis bainesii* Bak.	Beit Lotononis	
(3) *Maroptilium atropurpureum* (D.C.) Urb.	Siratro	
(4) *Stylosanthes guinensis* (Aubl.) SW	Oxley Fine-stem Stylo	
(5) *Macrotyloma axillare* (E. Mey.) Verdc.	Archer	
(6) *Glycine wightii* (R. Grah. Ex wight & Arn) Verdc.)	Cooper Glycine	
9. Pearl-millet (*Pennisetum typhoides* L.)	PMV1	Matopos Sorghum and Millets Crop Improvement Programme
	PMV2	Matopos Sorghum and Millets Crop Improvement Programme
	PMV3	Matopos Sorghum and Millets Crop Improvement Programme
10. Finger millet (*Eleusine coracana* L.)	FMV1	Matopos Sorghum and Millets Crop Improvement Programme
	FMV2	Matopos Sorghum and Millets Crop Improvement Programme

Annex 2. **SADC Seed Certification and Quality Assurance System: Minimum SADC Seed Certification Standards**

CROP		SADC LABORATORY STANDARDS					NATIONAL LABORATORY STANDARDS				
Botanical Name	Common Name	Minimum germination (%)		Minimum % pure seed (by weight)		Maximum Moisture (%)	Minimum germination (%)		Minimum % pure seed (by weight)		Maximum Moisture (%)
		BS (B)	CS (C)	BS (B)	CS (C)	(All Classes)	BS (B)	CS (C)	BS (B)	CS (C)	(All Classes)
Arachis hypgoaea L.	Groundnut	75	75	98.0	98.0	9.0	60	70	98.0	98.0	6.5
Cajanus cajan L.	Pigeon Pea	75	80	99.0	98.0	13.0	70	70	98.0	98.0	13.0
Glycine max L. Merrill	Soybean	70	70	99.0	99.0	12.0	70	70	98.0	98.0	12.0
Gossypium hirsutum L.	Cotton (H)	70	75	99.0	98.0	10.0	70	70	99.0	99.0	10.0
Gossypium hirsutum L.	Cotton (OP)	70	75	99.0	98.0	10.0	70	70	99.0	99.0	10.0
Helianthus annuus L.	Sunflower (OP)	75	85	98.0	98.0	10.0	75	85	96.0	96.0	10.0
Helianthus annuus L.	Sunflower (H)	80	80	98.0	98.0	10.0	75	85	96.0	96.0	10.0
Nicotiana tabacum L.	Tobacco	85	85	99.0	99.0	8.0	90	90	99.0	99.0	8.0
Oryza sativa L.	Rice	80	80	98.0	98.0	12.5	80	80	98.0	98.0	12.5
Pennisetum glaucum L.	Pearl millet	75	80	98.0	98.0	11.0	70	70	96.0	96.0	17.0
Phaseolus vulgaris L.	Beans	70	75	99.0	99.0	13.0	70	70	98.0	98.0	13.0
Sorghum bicolor L. Moench	Sorghum (OP)	80	80	99.0	98.0	12.0	70	70	98.0	98.0	12.5
Sorghum bicolor L. Moench	Sorghum (H)	80	80	99.0	98.0	12.0	70	70	98.0	98.0	12.5
Triticum aestivum L. emend. Fiori *et* Paol.	Wheat	85	85	99.0	99.0	13.0	80	80	98.0	98.0	13.0
Vigna unguiculata L. Walpers	Cowpea	75	75	99.0	98.0	13.0	75	75	98.0	98.0	13.0
Zea mays L.	Maize (OP)	90	90	99.0	99.0	13.0	90	90	99.0	99.0	13.0
Zea mays L.	Maize (H)	70	90	99.0	99.0	13.0	90	90	99.0	99.0	13.0

Annex 3. **Comparison of SADC and National Field Seed Certification: Minimum Seed Certification Standards**

CROP		SADC FIELD STANDARDS						NATIONAL FIELD STANDARDS					
Botanical Name	Common Name	Minimum isolation distance (m)		Maximum % of off-types (based on 1000 plants)		Minimum number of inspections		Minimum isolation distance (m)		Maximum % of off-types (based on 1000 plants)		Minimum number of inspections	
		BS (B)	CS (C)	BS (B)	CS (C)	BS (B)	CS (C)	BS (B)	CS (C)	BS (B)	CS (C)	BS (B)	CS (C)
Arachis hypgoaea L.	Groundnut	10	5	0.2	0.2	3	3	3	3	0.1	0.2	2	2
Cajanus cajan L.	Pigeon Pea	400	200	0.1	0.3	3	3	6	6	0.0	0.3	2	2
Glycine max L. Merrill	Soybean	10	5	0.2	0.5	3	3	100	100	0.1	0.2	2	2
Gossypium hirsutum L.	Cotton (H)	500	400	0.2	0.3	3	3	100	100	0.0	0.2	2	1
Gossypium hirsutum L.	Cotton (OP)	100	100	0.2	0.3	3	3	100	100	0.0	0.2	2	1
Helianthus annuus L.	Sunflower (OP)	1000	800	0.2	0.5	3	3	800	800	0.1	0.5	4	4
Helianthus annuus L.	Sunflower (H)	3000	1500	0.2	0.5	5	5	800	800	0.1	0.5	4	4
Nicotiana tabacum L.	Tobacco	800	400	0.2	0.5	3	3	400	400	0.0	0.0	4	4
Oryza sativa L.	Rice	5	5	0.2	0.3	3	3	3	3	0.01	0.1	2	2
Pennisetum glaucum L.	Pearl millet	400	200	0.5	0.5	3	3	400	200	0.1	0.5	2	2
Phaseolus vulgaris L.	Beans	10	5	0.1	0.2	3	3	3	3	0.1	0.2	2	2
Sorghum bicolor L. Moench	Sorghum (OP)	400	350	0.2	0.5	4	3	400	200	0.01	0.4	2	2
Sorghum bicolor L. Moench	Sorghum (H)	750	500	0.2	0.5	5	5	400	200	0.01	0.4	2	2
Triticum aestivum L. emend. Fiori *et* Paol.	Wheat	10	5	0.1	0.3	3	3	3	3	0.01	0.1	2	2
Vigna unguiculata L. Walpers	Cowpea	10	5	0.2	0.5	3	3	3	3	0.1	0.5	2	2
Zea mays L.	Maize (OP)	400	200	0.5	1.0	4	3	400	360	0.1	0.1	4	5
Zea mays L.	Maize (H)	400	350	0.1	0.3	5	5	400	360	0.1	0.1	4	5

Annex 4. **List of organisation involved in seed industry**

PUBLIC (P), PARASTATALS (PA) & CGIRA (C)	**COMMERCIAL ORGANISATIONS**			**VOLUNTARY (NGOs)**
	Seed companies	**Wholesalers (Outlets)**	**Retailers (Outlets)**	
Cotton Research Institute (P)	SEED-CO	Agricura (6)	Agriseeds (2)	RED CROSS
Crop Breeding Institute (P)	AGRISEEDS	Agricom (1)	Agricura (1)	COMMUTECH
ARDA Seeds (PA)	KUTSAGA SEED ASSOCIATION	Avanos (1)	Agrifarmer Centre (2)	LIFE MINISTRIES
TRB (PA)	NATIONAL TESTED SEEDS	Barack Seeds (1)	Avanos (1)	CHRISTIAN CARE
SIRDC (PA)	PANNAR SEEDS	Charter Seeds (1)	Barack Seeds (1)	FAO
CIMMYT (C)	PIONEER SEEDS	First Direct (1)	Bayhack (1)	PLAN INTERNATIONAL
ICRISAT (C)	MONTEREY ESTATE P/L	Gladbank Investments (1)	Bhadhella (1)	
	QUTON	Golden Stairs Nursery (1)	Bincro Investment Pvt Ltd (9)	
	600 SEEDS	H.F.M. Marketing Pvt Ltd (1)	Built Rich Trading (1)	
	PLATINUM AGRICULTURE	Musa (1)	Shop No.10 Bulawayo (1)	
	PRIME SEEDS	NTS (9)	Central Mashonaland (1)	
	PRISTINE SEEDS	Paseco Quality Seeds (1)	Charter Seeds (1)	
	PROGENE SEEDS	Progroup Pvt Ltd (1)	Chifu Investments (1)	
	FSI AGRICOM HOLDINGS PVT LTD	Red Star (4)	Choclid Enterprises (1)	
	REAPERS SEED COMPANY	Seedridge Investments (1)	Compass Hardware (1)	
	AGPY	Shop No.10 (1)	Conaph Enterprises (1)	
	LOMAG	Spring Bank Investments (1)	Dombwe Dvpt (1)	
	ZTSA	TRB (1)	Farmer’s Pride (1)	
	EAST WEST SEEDS	Zim Garden Seeds (1)	Farmworld (8)	
	SEEDRIDGE		First Direct (1)	
	CAPSTONE SEEDS		Fruit Veg. City (1)	
	ROCKRIDDERS		Godfrey J. Manyawu (1)	
	DA EL SALAM		Gladbank Investments (1)	
	ACFD			
	QUTON		Goldrigger/Hardware (1)	
			Grow Agriculture (1)	
			Gutsai (4)	
			H.F.M. Marketing Pvt Ltd (1)	
			Jenpas Investments (1)	
			Lahama Trading (1)	
			Little Green Pvt Ltd (1)	
			Lucullus (1)	

			Mignon (1)	
			Mohammed Musa (1)	
			Mukumba Ernest (1)	
			Musa (2)	
			Newstream Investments (1)	
			NTS (1)	
			Nyambuya Services (1)	
			Nyanyiwa Enterprises (1)	
			OK (49)	
			Openhill (1)	
			Paseco Quality Seeds (1)	
			Picktalk (1)	
			Pioneer Hi-Bred (1)	
			Poncepop Trading (1)	
			Prime Seeds (1)	
			Progene Seeds (1)	
			Ranchlate (1)	
			Red Star (19)	
			Robsell Trading (1)	
			Rolen Trading Pvt Ltd (1)	
			Ruwa Supermarket (1)	
			Rwodzi D (1)	
			Seed Ridge (1)	
			Seedridge Investments (2)	
			Shalom Agro-chemicals (1)	
			Shalom Trading (1)	
			Shop No.10 (1)	
			Shumba investments (1)	
			Spring Bank Investments (1)	
			Stonminz Investments (1)	
			Thomas Miekles (1)	
			Town & Country (34)	
			TRB (1)	
			Twistex Private Ltd (1)	
			Unique Services (1)	
			United Builders Merchants (1)	
			Waterflow Engineering Pvt Ltd (1)	
			Wiruma Pvt Ltd (11)	
			Zalau Investmets Pvt Ltd (1)	
			Zim Garden Seeds (2)	
			Zimbabwe Professional Marketing (1)	
			ZTSA (1)	

Annex 5.**Guide to Application for Recognition of Crop varieties**

1. Complete Form No. S.C.S 2 in duplicate and attach the additional details (The forms can be collected from Seed Services Reception)
2. Submit the completed Form S.C.S 2. Together with at least 2kg seed of the variety to Seed Services, located at 5th Street Extension, Harare.
3. Pay the required application fees (the fee is reviewed annually). The application will NOT be processed until the fees have been paid.
4. The variety will be planted out by the Certifying Authority (Seed Services), the applicant or a competent and approved institution to facilitate the technical examination of the variety for distinctness, uniformity and stability (D.U.S).
5. The DUS examination will last for a season or two:
    - If problems relating to distinctness, uniformity and stability are encountered, the variety will be entered for a second season of testing.
    - If the variety shows a high level of off-types (greater than the tolerance level for a certified crop of the same species), the applicant will be asked to submit another sample for re-examination.
6. When the Certifying Authority is satisfied with the DUS results, the variety shall be referred to the Variety Release Panel (VRP) for verification.
    - The breeder or the applicant maybe asked to present data on the variety to the VRP on a date set by the Certifying Authority in consultation with the VRP and applicants.
    - The VRP shall approve or reject recognition of the variety for certification according to parameters already explained above.
7. Once a variety has been approved for release, the Second Schedule (section 3) of the Seeds (Certification Scheme) Notice, 2000 will be amended to include the recommended crop variety. The amendment will be published in the Government Gazette.
8. The variety will remain on the Second Schedule for as long as it is properly maintained (i.e. if it remains stable) and the requisite annual renewal fee is paid to the Certifying Authority who will facilitate inspections in the field during seed production.
9. The deadline for applications for recognition of summer varieties is October 30, while for applications for winter-grown varieties it is April 30, to facilitate planning of the DUS grow-outs.

NB. This document was prepared as a simple guideline to assist applicants and is in line with section 10 of the Seeds (Certification Scheme) Notice 2000, of the *Seeds Act (Chapter 19:13)*. For any inquiries, consult Seed Services.

Annex 6. **Form No. S.C.S. 2**

Application for recognition of kind or variety of seed in terms of the Seeds (Certification Scheme) Notice, 2000.

Application to: Seed Services Institute, P. O. Box CY550, Causeway, Harare, Zimbabwe

Applicant's name, in full:……..……..

Applicant's postal address…….……..

Applicant's physical address…….……..

Kind and Variety of seed submitted for recognition……

Botanical name of seed….…….……..

Name and address of certifying agency, if any……..……..

Name of the variety and its parentage (in the case of a variety which is already under commercial production in a foreign country, the name given to such a variety by the breeder should be submitted)…….…..

In the case of a foreign variety:-

a) The country where it was first introduced into the trade ……..……
b) The name and address of the person who introduced it …….
c) The date of introduction …….

The breeding history of the variety……..

The names of already recognized varieties of the same kind with which the variety is comparable…….….

The purpose or use for which the variety was bred ……..….

Complete description of the morphological, physiological and other identifying characteristics of the variety. Mention distinguishable off-types, if any.

…….…

Complete description of the known phenological characteristics of the variety

…….…

Performance data, including yield, insect or disease tolerance/resistance and other factors which would aid in establishing distinctness of the variety

……..……

Special suitability of the variety for certain growing conditions: (mention areas recommended for production) …….……..

Procedure for maintenance of stock seed …….

I declare that the information supplied is, to the best of my knowledge, true and correct.

Date:…….……

Annex 7. **Application form for Seed export**

APPLICATION FOR EXPORTATION OF SEED IN TERMS OF THE SEED ACT

Application to: **Telephone No. 791223**

The Head **Fax No. 791223**

SEED SERVICES

P.O. Box CY550

Causeway, Harare

Applicant's Name (**in full**)…….

Applicant's postal address……..……

…….……..

Applicant's Physical Address……....

……

Kind and Variety of Crop to be Exported…….……

Is the Variety genetically modified……..……

Quantity and Lot No. of Seed……

For what is seed being Exported?.....

Export to (Country)…….

NB: An official Seed Testing Certificate from the country of origin (i.e Orange International Certificate should accompany this application.

Date:……Signature:……
……

For Official Use Only

Certificates Verified:……..

Status of Application: **Approved/Not Approved**

If not approved, Give reason:……

…….

Date:……..Name of Approving Officer:…….

Signature:…….

NB: Form is not valid without a Seed Services Date Stamp

Annex 8. **Application form for Seed import**

APPLICATION FOR IMPORTATION OF SEED IN TERMS OF THE SEED ACT

Application to: **Telephone No. 791223**

The Head **Fax No. 791223**

SEED SERVICES

P.O. Box CY550

Causeway, Harare

Applicant's Name (**in full**)……

Applicant's postal address……

……..

Applicant's Physical Address……....

……

Kind and Variety of Crop to be imported……

Is the Variety genetically modified……

Quantity and **Lot No.** of seed…….

For what is seed being imported?.....

……

Country of Origin……..…….

NB: An official Seed Testing Certificate from the country of origin (i.e Orange International Certificate should accompany this application.

Date:……Signature:……

For Official Use Only

Certificates Verified:……..

Status of Application: Approved/Not Approved

If not approved, Give reason:……

…….

Date:……..Name of Approving Officer:…….

Signature:…….

NB: Form is not valid without a Seed Services Date Stamp