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# Prospects and challenges of seed sector privatisation

Patrick Malope

Department of Agricultural Economics, Education and Extension Botswana College of Agriculture, Gaborone, Botswana.  
E-mail: [pmalope@bca.bw](mailto:pmalope@bca.bw). Tel: +267-3650100 or +267-72591713.  
Fax: +267-3928753.

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African countries embarked on privatisation of their seed industries in the 1980s as part of the structural adjustment programmes. Botswana however, chose not to privatise its seed production services at that time. This paper examines the prospects and challenges for embarking on seed sector privatisation in developing countries using Botswana as a case study. The study found that the present system is such that the department of agricultural research (DAR) through its seed multiplication unit (SMU) dominates seed production and distribution, especially for open pollinated varieties. This has stifled private sector participation in seed production and distribution. The present system has a number of shortcomings such as the provision of poor quality seed, insufficient monitoring of seed production, unfulfillment of contracts, low returns to DAR and limited capacity for seed distribution. Challenges facing the drive for privatisation are: free seed distribution, unreliable seed demand, lack of plant breeder's rights and lack of institutional and policy framework to support private sector participation in the seed sector. However, there are a number of prospects that could stimulate private sector participation in the seed sector. These include government's renewed interest in the development of the arable sector through initiatives that could stimulate seed demand and the government's privatisation policy. For the process to succeed it should be followed cautiously and the strategy that promises success is that of contracting out and restructuring of the SMU. The government should also embark on institutional reforms and come up with an appropriate seed policy which will guide private sector participation in the seed industry.

**Key words:** Privatisation, seed, Botswana, challenges, prospects.

## INTRODUCTION

African countries embarked on the process of seed privatisation in the late 1980s as part of the structural adjustment programmes instituted by the international bank for reconstruction and development (IBRD) – World Bank. The structural adjustment programme's main objective was to liberalise markets in order to improve efficiency. In the seed sector, liberalisation involved privatisation of seed production and distribution services. The process of privatisation emanated from the realisation that seed was a very important input in agricultural production, hence the efficiency of both production and marketing were prerequisites for improved agricultural production. As argued by Langyintuo et al. (2010) the global food crisis together with the effects of climate change makes it even more important to explore ways of developing and disseminating drought resistant, high yielding crop

varieties in order to increase crop productivity. This can only be met if there is an efficient seed sector. There was therefore, a strong belief that this could only be achieved through privatisation of the public seed production and marketing. However, the process of privatising seed production and distribution has not been a smooth one.

There are many experiences where privatisation of public seed production and distribution in Africa has led to abandonment of all seed production facilities owned by government. In many instances, the private sector has not performed its functions as expected because of many teething problems. Chief amongst these being that, the privatised public companies have remained inefficient; lack of market for the private sector and failure by the private sector to engage in unprofitable, but important crops (Turner et al., 2001). In countries where the seed sector has been liberalised, we have witnessed a

proliferation of private seed companies, with no real improvement in the performance of the seed sector (Langyintuo et al., 2010).

Botswana chose not to privatise its seed production and distribution services at the time when most African countries embarked on the process. The main reason why Botswana did not embark on seed privatisation was that, at that time there was fear that the private sector (dominated by multinationals operating outside the country) could not be trusted to supply rural areas where it might be unprofitable to do so. In addition, unlike other African countries which were forced to adopt structural adjustment programmes, it was not the case with Botswana. Since the 1980s the Botswana's seed sector has grown, albeit at a slow pace. At present there are two multinational seed companies operating in the country. The seed sector is dominated by government and this has stifled the development of the private sector.

The Botswana's agricultural sector, especially the crop sub-sector has performed poorly, partly due to low use of improved technologies such as row planting, use of fertilisers and improved seeds. In recent years the Government has shown keen interest to develop the agricultural sector, particularly the arable sub-sector. Coupled with the desire to privatise some of its services and the need to improve efficiency in the seed sector, government has revisited the issue of privatising the seed production services of the seed multiplication unit (SMU) of the Department of Agricultural Research (DAR).

Seed is an essential input in achieving optimum crop productivity. Poor access to seed has often been cited as one of the most important constraint to improving crop productivity (Pray and Ramaswani, 1991). This is supported by the fact that in commercial farms, where the use of improved seed is high, crop productivity can be five (5) times higher than in the communal sector, where there is limited use of improved seed and other modern methods of farming (Republic of Botswana, 2007).

By privatising the seed production and distribution services, government wishes to improve smallholders' access to improved seeds and hence improve productivity and achieve food security at both the household and national levels. However, government should embark in this process cautiously as there are many instances where the process has failed and led to huge inefficiencies in the sector. The objective of this paper is therefore to determine the prospects and challenges of privatising seed production and distribution services in Botswana. This will help Botswana and other developing countries intending to privatise their seed industries avoid pitfalls which other African countries have fallen into when trying to privatise their seed industries.

The rest of this paper is organised as follows. Subsequently, we discuss the methodology used in the study after which we discuss the current situation in seed production and distribution. This is followed by the main

shortfalls of the present system. We further discuss the prospects for involving the private sector in seed production and distribution, followed by the challenges facing privatisation of seed production and distribution. The strategy, which should be followed for privatising the seed production and distribution services, is then discussed after which the experiences observed elsewhere are discussed. Finally, conclusions and recommendations are given for successful privatisation of the seed production and distribution services of the SMU.

## **METHODOLOGY**

The main approach to this study was desktop research in which secondary data was collected on seed production and distribution in Botswana. In addition, there was extensive stakeholder consultation in order to identify problems of the current system, prospects and challenges facing seed sector privatisation in Botswana. The consultations were done through personal interviews in 2009. These stakeholders included among others: Ministry of Agriculture Management, Department of Crop Production, Department of Agrobusiness Promotions, the Agricultural Hub, Department of Agricultural Research, in particular the SMU, National Master Plan for Arable Agriculture and Dairy Development (NAMPAADD), Botswana Agricultural Marketing Board (BAMB), private seed companies, agricultural input suppliers and Botswana Seed Grower's Association. The study was undertaken as part of a consultancy project funded by food and agriculture organisation (FAO) to assist Botswana in privatisation of her seed production and distribution services.

## **CURRENT SITUATION IN PRODUCTION AND DISTRIBUTION OF SEEDS**

### **Crop breeding and technology release programmes**

The DAR has breeding programmes for cereals (sorghum, pearl millet) and grain legumes (cowpeas and oilseeds). DAR also evaluates the following crops for adaptation: maize, wheat, sunflower, mung bean and jugo beans. The main objective of DAR is to increase productivity through genetic manipulation and selection. Research on these crops emphasises on the development of cultivars which have high yield potential and tolerance to biotic (pests, diseases, parasitic weeds) and abiotic (rainfall, temperature) stresses which are the major production constraints in Botswana. Varieties are evaluated at several research stations and are also tested on farmers' fields. Breeding plots are not irrigated in order to simulate conditions in most of the farming areas in the country where crop production is mainly rain-fed (Mpfungu, 2010).

When enough data has been generated to justify the release of a variety, it is presented before the Technology Release Committee. Four sorghum varieties were released in 1995, while two millet varieties were released in 1998. Between 1999 and 2009, four cowpea varieties, two bambara nut, and one sorghum variety were

released. Breeder seed of released varieties is handed over to the basic seed production arm of the SMU, which then multiplies the foundation seed into basic seed. Currently, the SMU is producing eight open pollinated sorghum varieties and one hybrid (BSH1). The SMU also produces basic seed of one sunflower (Russian No. 4), one maize (Kalahari Early Pearl - KEP), three cowpea, one millet and one mungbean variety (Mpofu, 2010).

### **Seed production/multiplication and distribution**

The SMU multiplies the foundation seed into certified seed using contract growers, most of whom are located in Southern Botswana and in the area around Gaborone, as farmers are required to transport the seeds to the SMU headquarters, located in Gaborone. The contracted farmers are provided with start up seeds. Farmers are expected to sell the seeds to SMU. The SMU is responsible for carrying out all the necessary seed quality control activities. After buying the seeds from the growers and processing them into certified seed, the SMU is supposed to sell the seeds to retailers for distribution.

### **Major institutions in seed production and distribution**

#### ***Botswana agricultural marketing board (BAMB)***

BAMB is a parastatal under the Ministry of agriculture (MoA) whose mandate is to buy all scheduled produce from local producers, while at the same time ensuring that adequate supplies exit for sale to customers at affordable prices. The BAMB also acts as a one stop agricultural service centre to the farming community and customers alike by performing the following functions; buying, packaging, processing and marketing locally produced grains, pulses; selling a wide range of animal feeds, agricultural inputs such as fertilisers, seeds, pesticides and packaging materials. The BAMB has eleven branches strategically placed in crop producing areas throughout the country. BAMB, imports hybrid maize and sorghum, groundnut and vegetable seed from South Africa and it is also the sole supplier of SEEDCO seeds in Botswana.

#### ***Cooperatives***

Cooperatives are strategically placed in the rural areas and hence could act as seed distributors in remote areas where there are no BAMB branches. However, cooperatives have not been able to perform this task, mainly because of poor management. Thus, very little if any seed is distributed through this channel.

#### ***Private seed companies***

There are currently two private seed companies

producing and distributing seeds: SEEDCO International and Savannah Seeds. These companies supply mainly imported hybrid seeds as they do not compete directly with the SMU which supplies open pollinated varieties (OPVs). SEEDCO has contract growers in Botswana, but no longer processes the seed in Botswana. Instead the seed produced in the country is sent outside for processing and part of it is later re-imported into the country. Similarly, Savannah Seeds also has contract growers in the country and mainly specialises on hybrid seeds, but also produces OPVs mainly for export. The company processes the seeds in the country and sells a small fraction, while the bulk is exported because of limited local market.

#### ***Other agricultural input suppliers***

There are a few agricultural input suppliers who also sell seeds. The seeds sold are mainly for vegetables, speciality crops and other horticultural crops. These suppliers source their seed mainly through imports, particularly from South Africa.

#### ***Government extension services***

The Government, through the department of crop production (DCP), occasionally distributes seeds through its extension services. This occurs in instances where seed is offered free as a drought recovery measure or as part of government programme to improve crop productivity.

## **SHORTFALLS OF THE CURRENT SYSTEM**

### ***Un-fulfilment of contracts by growers***

As indicated in Table 1, the contracted growers have not been able to produce the amount they were contracted in most years. It was only in one season, the 1999/00 planting season that the contracted growers were able to produce more than (114%) of what they were contracted to produce (for maize only). At times the amount supplied has been less than 10% as in the case of millet in the 2000/2001 planting season.

When seed growers were asked about their failure to supply the amount contracted to them, they mentioned two main reasons, first they indicated that seed production depends on weather conditions and other factors such as pests which are beyond their control. Secondly, they indicated that at times they produce enough seeds but end up selling to local BAMB depots in order to avoid transport costs of taking the seeds to SMU. Moreover, in some cases the price differentials between the SMU and BAMB are so small that they are more than

**Table 1.** Seed production for selected crops versus the amount contracted by SMU.

Crop	Cropping season	Amount contracted (tonnes)	Amount supplied (tonnes)	Percentage supplied
Sorghum	1999/00	1888.8	869.96	46
	2000/01	1188	167	14
	2001/02	1430	437	31
	2008/09	1500	275.88	18
Maize	1999/00	1052	1201.56	114
	2000/01	1045	698	67
	2001/02	1462.5	1248	85
	2008/09	3080	1456.4	47
Millet	1999/00	64	2.21	3
	2000/01	32	0.14	0.4
	2001/02	50	11.52	23
	2008/09	75	0.9	1.2
Cowpeas	1999/00	101.5	64.67	35
	2000/01	120	49	41
	2000/02	130	70	54
	2008/09	241	68.98	27

Source: Seed multiplication unit. Data for the years 2002/03 to 2006/07 for all crops not available.

off-stetted by the transport cost to SMU and hence the contracted growers prefer to sell to BAMB where they do not have to pay additional transport costs.

### Poor quality seed

The quality of seeds supplied by contracted growers has at times not been impressive due to lack of monitoring on the part of SMU. This has resulted in contracted growers supplying the SMU with poor quality seeds. As stated earlier, the contracted growers are not able to supply the SMU with the amount they were contracted to supply. Due to the fact that the contracted growers always fail to meet the demand by SMU, the latter end up sourcing seeds through imports and at times importing grain and turning it into seed. This compromises the quality of the seeds and hence production at farm level.

In addition, the DAR has been supplying the contracted growers with basic seed that has been recycled for over fifty (50) years. This has led to poor quality seed being produced by contracted growers as the quality of the commercial seed depends on the quality of foundation seed.

The DAR has released very few varieties for farmers to choose from. At present there are only nine sorghum varieties, including relatively new OPVs. In addition three groundnut varieties were released in 1998, making the total number of varieties available to four. Unfortunately, seed of these varieties is not readily available to farmers and the old sorghum varieties are reportedly disappearing from farmers' fields.

### High costs of multiplication and distribution

The SMU is currently multiplying seeds at a very high cost compared to the price at which it sells the seeds. As shown in Table 2, the SMU is unable to cover its operational costs from the sale of seed for all crops under consideration as indicated by the negative gross margins. For all the crops, the SMU price is actually below the price at which it buys the seeds from contracted growers. Gross margin was also calculated based on two prices, the actual SMU price and the commercial price and the results of such analysis are shown in Table 2. These results show that in both cases gross margin is negative. It is important to note that fixed costs are not included and hence the losses could have been greater. On the revenue side, one item which is omitted is the sale of the unsuitable seeds, however this is expected to be minimal and hence not to alter the results significantly. Thus, as argued by Jaffee and Srivastava (1994), some public entities like the SMU have been a major financial liability to their governments. Tripp and Rohrbach (2001) supports this argument by maintaining that the costs of multiplication and distribution are high and there is no full cost recovery for seed multiplication units such as the SMU.

### Limited capacity for seed distribution

As earlier mentioned the SMU is mandated to produce seeds and sell to retailers, notably the BAMB and cooperatives throughout the country. However, several

**Table 2.** Gross margins analysis for selected crops.

Item/Crop	Sorghum	Maize	Millet	Cowpeas
Cost per ton	Pula	Pula	Pula	Pula
Uncertified seeds	1,140.00	1,140.00	1,140.00	3,775.00
Pesticides	302.50	427.53	302.50	302.50
Seed pockets	500.00	500.00	500.00	500.00
Materials	32.50	32.50	32.50	32.50
Storage	6,000.00	6,000.00	6,000.00	6,000.00
Maintenance	2,500.00	2,500.00	2,500.00	2,500.00
Labour	342.58	266.50	32.71	428.60
<i>Total Variable costs</i>	10,817.58	10,866.53	10,507.71	13,538.60
Revenue per ton				
Sales at SMU price	1,000.00	1,000.00	1,000.00	2,500.00
Sales at commercial price	1,630.00	2670.00.00	1,1630.00	na
Gross margin/ton	-9,817.58	-9,866.53	-9,507.71	-11,038.60
Gross margin/ton (at commercial prices)	-9, 187.58	-7, 196.53	-7, 196.53	na

Source: SMU, 2003/04. Key: na – not available.

factors limit BAMB and private sector participation in seed distribution. Chief amongst these factors is the government's programme of free seed distribution. For example, as mentioned by Mpofu (2010), the BAMB did not distribute any seed from the SMU during the 2008/2009 planting season because all the seeds from the SMU were distributed by the extension services of MoA. Thus, free seed distribution programs have discouraged the development of wholesale and retail seed trade channels (Tripp, 2000; Kugbei, 2003). The SMU also sells seed directly to farmers, especially in areas around Gaborone and hence retailers can not compete with the SMU as they have to put a mark-up to SMU price. Lastly, the performance of cooperatives who were supposed to distribute seeds in remotest parts of the country has been very poor. Many have not been able to do so because the majority have collapsed and those that remain are not able to perform this function adequately. In addition, there have been instances where the government extension services have failed to supply farmers with free seeds on time.

### Limited market for the private sector

The current arrangement has stifled the development of the private sector due to a number of reasons. First, the SMU has taken up the limited market available, leaving the private sector with very limited market. This is because the seeds sold by SMU are sold at subsidised prices and hence the private sector cannot compete. Secondly, there are many instances whereby government offers free seeds through the SMU, especially as a drought relief measure or as part of government programmes to increase crop production, such as the current integrated support programme for arable agriculture development (ISPAAD). The issuance of free seeds means that the private sector is left with very

limited market, notably commercial farmers who prefer to use hybrid seeds, which are not provided through SMU. Some private seed companies who produce OPVs choose to export them as they are not able to compete with the SMU.

All these mean that the private sector is left with a very limited market, warranting participation uneconomic in terms of setting up both production and processing facilities. As argued by Tripp and Rohrbach (2001), the issuance of free seeds leads to reluctance of the private sector in investing in quality seeds due to uncertainty about the consistency of seed demand. The private sector has therefore concentrated on supplying seeds which the SMU does not produce. As argued by Tripp and Rohrbach (2001), several multinational seed companies have entered national markets only to retreat a few years after disappointing sales. This happened with one multinational company which was producing and processing OPVs in Botswana, but had to abandon its production and processing because of limited market and competition with the state seed company (SMU). The said company is currently producing and processing hybrid seed outside the country. Thus, the private sector has chosen to supply hybrids seeds because they are not offered for free and the SMU does not concentrate on their production.

## PROSPECTS FOR INVOLVING THE PRIVATE SECTOR IN SEED PRODUCTION AND DISTRIBUTION

### Privatisation policy for Botswana

One of the major prospects regarding privatisation of seed production and distribution services is that the Government of Botswana (GoB) has adopted a privatisation policy through government paper No.1 of

2000. According to GoB's privatisation policy, privatisation is broadly defined as encompassing all measures and policies aimed at strengthening the role of the private sector in the economy. Privatisation is also narrowly defined as the transfer of ownership of public enterprises to private buyers. It covers a wide range of different policy actions resulting in private sector involvement in economic activities that have previously been performed by the public sector (Republic of Botswana, 2000). However, it should be made clear that privatisation does not involve government discarding any of its core responsibilities for safety and welfare of its citizens. Privatisation is broadly defined as encompassing all the measures and policies aimed at strengthening the role of the private sector in the economy (Republic of Botswana, 2000). Thus, in terms of policy, privatisation of seed production and distribution services is well catered for.

### **Initiatives that could stimulate seed demand**

There are several initiatives that the government is currently undertaking or planning to undertake that could stimulate the demand for seed and hence the prospects for increased private sector participation in seed production and distribution. These initiatives are discussed as thus explained.

#### ***National master plan for arable agriculture and dairy development (NAMPAADD)***

NAMPAADD was instituted in 2002 and its major objectives are to improve dry-land arable agriculture, irrigated agriculture and dairy farming. Under rain fed agriculture, the components of the programme include increasing the minimum farm size to at least 150 ha to ensure economic viability (average farm sizes are presently 4 ha in the communal sector and 100 ha in the commercial sector, (Malope, 2009). The main objective of NAMPAADD is therefore to increase the area under cultivation and hence increase seed demand and therefore the prospects for private sector participation in the provision of inputs including seeds (Republic of Botswana, 2002). NAMPAADD also wishes to increase area under irrigation for both field and horticultural crops, through the use of both fresh water and urban waste water. Thus, NAMPAADD has the potential to increase the area under cultivation; hence seed demand and therefore the prospects for private sector participation in the seed industry.

#### ***Integrated support programme for arable agriculture development (ISPAAD)***

The ISPAAD programme was instituted in the 2008/2009 planting season and its main objectives are to: increase grain production; promote food security at household and national levels; commercialise agriculture through

mechanisation, facilitate access to farm inputs (including seeds) and credit; and improve extension outreach. The programme offers among other things, free seeds up to a maximum amount which can be used to plant 16 ha. For hectareage over and above 16 ha, farmers are given 50% subsidy on the cost of seed. The seeds offered are OPVs of major grains supplied by SMU. Farmers who wish to buy hybrids are also offered 50% subsidy on the cost of the seed (Ministry of Agriculture, 2009).

The programme has the potential to increase seed demand as demonstrated by the fact that during its first year of operation area planted increased by almost three folds. This was partly due to the fact that the programme also offers subsidies on complementary inputs such as ploughing, planting and fertilisers. The most important complementary input offered is free ploughing and planting up to a maximum of 5 ha and 50% subsidy on additional 11 ha. The ISPAAD programme is open to all farmers irrespective of their resource endowments and size. The programme therefore has the potential to increase seed demand in the country and hence the prospects for private sector participation in provision farm inputs including seeds.

#### ***Zambezi agro-industrial project***

Government is planning to increase the area under crop production by tapping some water from the Zambezi River. The plan is to increase area under irrigated farming to about 20,000 hectares and this includes arable production. Currently, all SMU seeds are planted under rain fed conditions and the expectations are that part of the land will be used for seed production under irrigated conditions. This project also has the potential to increase seed demand and hence private sector participation in seed production and distribution.

#### **Other initiatives to improve arable production**

The Ministry of Agriculture is currently undertaking new initiatives with the view of improving the performance of the agricultural sector. Such initiatives include the agricultural infrastructure development initiative (AIDI) and Botswana contributory agricultural insurance scheme (BCAIS). The AIDI calls for provision and improvement in infrastructure in the farming areas; this include roads, telecommunications, electricity and water. This will definitely decrease transaction costs for farmers and hence their profits and area under arable production.

### **CHALLENGES FACING PRIVATISATION OF SEED PRODUCTION AND MARKETING**

#### **Free seed distribution**

The Government has been involved with free seed distribution for OPVs, either as a drought recovery measure or as a means to increase crop production.

Free seed distribution does not only create an artificial demand for seed, but also limits the market available for the private sector. This is demonstrated by the fact that currently private sector participation in seed production and distribution is limited to the supply of hybrid seeds which the SMU does not supply. As noted by Tripp and Rohrbach (2001), the strategy for free seed distribution is one of the most important constraint to seed system development. Free seed programs increase demand for seed, but the private sector remains reluctant to invest in producing good quality seeds due to uncertainty about consistency of seed demand. Free seed distribution programmes also discourage the development of wholesale and retail seed trade channels. Companies prefer to sell to large single buyers as demonstrated by SEEDCO which sells to BAMB.

### **Unreliable demand for seed**

Botswana is a drought prone country and this does not only disrupt seed production, but also demand. As a result of highly variable rainfall, area under cultivation in rain fed arable agriculture fluctuates widely. This causes unreliability in the demand for seeds. For profitable private sector participation, the private sector needs to be assured that they will have a stable market for their products. Thus, a major challenge facing private sector participation in seed production and distribution is lack of reliable market. Moreover, the culture or practise of using saved seeds which is widely practiced in Botswana limits the demand for improved seeds (Mpofu, 2010).

### **Lack of plant breeders rights**

Another challenge facing private sector participation in seed production and distribution is lack of intellectual property rights (IPR) in the country. Technologically superior firms prefer to operate in an environment where their investment is protected by intellectual property rights. In the seed industry these rights are in the form of plant breeders' rights and provide breeders and research programs with a means to limit access to the varieties they develop and to gain income from the commercial sale of their products. In effect, these rights, insofar as they can be enforced, allow public and private researchers to obtain larger returns on their investments. This increases the likelihood and level of future investment in variety development. IPR also help ensure returns on investment made in developing markets for particular varieties. Lack of IPR is therefore a barrier to private sector involvement in variety development and seed production (Tripp et al., 2006).

### **Lack of institutional and policy framework for private sector participation**

The present institutional arrangement in which the SMU

is both the producer and the certifier of seeds is not conducive to an efficient seed industry. The seed production and distribution services should be separated from the legislative framework for an efficient seed industry. Thus, one can not be judge and a jury at the same time if the process is to be transparent. In addition there is no seed policy to guide the private sector participation in seed production and distribution. For an efficient private sector participation in seed production and distribution, there must be clear guidelines that direct the private sector in the performance of its services. Moreover, although the Government has adopted privatisation policy since 2000, there is no accompanying legislation to help in the implementation of this policy. This has stifled privatisation of goods and services provided by government, including seed production and distribution.

## **THE STRATEGY TO FOLLOW FOR PRIVATISATION OF SEED PRODUCTION AND DISTRIBUTION**

There are several strategy options that the government can follow in privatising seed production and distribution services of the SMU (Turner et al., 2001; RoB, 2000). It must be noted that no ideal structure exists for the national seed system. An efficient system should involve both the public and private sector participation in the industry. Policy makers should therefore devise policies and investments that lead to the two sectors complementing each other (Jaffee and Srivastava, 1994).

### **Leasing SMU assets**

Under this arrangement, Government retains the ownership of the SMU and other assets involved in seed production and multiplication and simply leases them out to a private operator who will run the seed production and multiplication on his/her own account. The private operator assumes commercial risk of operation and maintenance and thus, has incentives and obligations to reduce costs and maintain long-term value of assets. Fees are normally linked to performance and revenue generated.

The leasing of government facilities to private companies may be appropriate particularly to seed processing plants, which often operate below their capacity, especially when government is the contracting authority. Plant can therefore be leased on medium to long term basis to the private sector. This approach allows private companies to make good use of past investments. However, it may present management problems and it should probably be used only as a transient solution until companies have sufficient confidence or resources to acquire their own facilities (Turner et al., 2001). Moreover, full privatisation can not be achieved through leasing of SMU facilities alone. Leasing should be complemented by other strategies,

such as contracting out. In addition, the SMU or government will need some of these facilities for production of basic seeds and certification.

### **Selling of assets/ transfer of ownership**

This can either involve selling of assets to a single buyer or to several buyers. When selling to a single buyer, the new owner buys all the assets of SMU (plant, machinery, equipment and stock) but does not buy the SMU itself. The new owner is therefore not unencumbered by any of the SMU liabilities and obligations such as its contractual obligations to its staff, its suppliers (seed growers) and its customers (Turner et al., 2001). The assets of SMU can also be sold to different buyers, but this may not be appropriate because the SMU assets as stated earlier are not many and are located in one place and are immovable.

Selling the assets of an existing public institution such as SMU to a private company could be effected either through the creation and public offer of shares or by buying of SMU. The assets could be sold to existing or new seed companies. For instance, contracted seed growers may wish to form a company of their own which will process the seed. However, the seed processing and multiplication facilities of the SMU are very old and it might be difficult to find a prospective buyer for them. In addition, government might need these facilities for the production of basic/foundation seed and certification and testing. In any case, before considering this route, Government should hire professional valuers to value the SMU assets as there are no proper valuation records or purchase prices and the time in which the assets were purchased.

### **Contracting out and restructuring of the SMU**

Contracting out is perhaps the most widely used method of privatisation (Turner et al., 2001). Under this strategy the Government retains ownership and control of the activity, but contracts out to the private sector the production of goods and services. In the case of seed production, Government would maintain control over seed production, but would contract out to the private sector the actual production and multiplication of seeds. The selection of private sector companies is normally based on competitive bidding process through invitation of tenders. The Government must set service level standards and determine specifications with regard to quality, quantity and timeliness within which seeds should be produced. The successful bidders are required to follow these specifications.

This is perhaps the easiest strategy to follow especially during the early days of privatisation. The strategy will ensure that the right varieties are supplied and in correct

quantities. A number of commercial seed companies could be contracted to supply seeds to Government. This strategy will also not negate the Government's commitment to increase arable production through the issuance of free or subsidised inputs, including seeds. Government can buy seeds from contracted companies and this will assure companies of a reliable market and hence increase their investment, thereby leading to the development of a vibrant seed industry in the country.

### **EXPERIENCES ELSEWHERE**

Having dealt with a number of strategy options which the Government could follow when privatising the seed production and marketing services of the SMU, it is perhaps logical to briefly summarise experiences elsewhere. As mentioned earlier, a number of developing countries embarked on the process of privatisation in the later 1980s and early 1990s. This involved the removal of public monopolies which dominated the pre-privatisation era. In many countries, we have witnessed the proliferation of private companies. However, the seed sectors in these countries have remained inefficient. Langyintuo et al. (2010) mentions a number of bottlenecks which inhibits efficient private sector participation in the seed industry in eastern and southern Africa. These constraints include policy bottle necks in the form of lengthy varietal release process and trade restrictions and establishment bottlenecks which manifests themselves in the form of high cost of establishment, lack of access to credit and manpower constraints. The other constraints are related to production, such as lack of access to germplasm, lack of production credit and expensive production equipment. Marketing also poses problems in the privatised seed industry due to lack of contractual agreements at retail levels and poor rural road infrastructure. Lastly, there are demand bottlenecks resulting from low adoption rates and difficulties in estimating demand. Thus, privatisation of seed production and distribution has not significantly improved the efficiency of the seed sector in eastern and southern Africa.

### **CONCLUSIONS AND RECOMMENDATIONS**

Private sector participation in Botswana's seed industry is limited due to a variety of reasons, chief amongst them being the dominance of the SMU. The seed market, especially for OPVs is completely dominated by the SMU because the private sector can not compete with it as it sells seeds at highly subsidised prices. The issuance of free seeds through government programmes meant to stimulate crop production has also stifled the development of a vibrant private sector in the seed industry. The present system has a number of problems



such as unfulfillment of contracts by contracted growers. This often leads to importation of grain and turning it into grains, resulting in poor quality seed, leading to poor crop production. This limits access to good quality seeds especially by small-holder farmers.

Privatisation of the Botswana seed sector is faced with a number of challenges. One of these is lack of institutional and policy framework to support private sector participation in seed production and distribution. Although, there is no legislation preventing private sector participation in seed production and distribution, the current arrangement where there is no proper legislation to support the private sector inhibits its growth. The other challenge is lack of policy on plant breeders' rights which discourages private firms from investing in variety development as their intellectual property rights are not protected.

However, there are a number of prospects for increasing private sector participation in the seed sector. The main one being the government's commitment to increasing arable production through a number of initiatives. These initiatives will surely increase seed demand and hence more market for the private sector. In addition, the government adopted a privatisation policy in 2000, through which government seeks to privatise some of its services which the private sector could provide more efficiently and seed production and distribution has been identified as one of them.

There are a number of strategy options that are available for government to follow in its drive to privatise seed production and distribution. Each one of them has its own advantages and disadvantages. Amongst these strategies, contracting out is the preferred strategy because it is easy to implement and less costly. For privatisation to succeed, government should first create a conducive environment for the private sector through institutional reform. This should include separation of seed production from certification as one can not be a 'judge and jury' at the same time. The government should also be clear regarding its practice of issuing free seeds as this creates an artificial demand for seed. Thus, for the private sector to participate fully, government has to ensure that there is a stable market for seed. In the early stages of privatisation, government should take the risk of unreliable demand for seed through contracting out as this will ensure that the private sector has a market for seeds. Government should also make sure that seeds are supplied to areas where the private sector may find it unprofitable to do so.

In conclusion, there are many benefits that the government could reap through privatisation of seed production and distribution. These benefits include more access to improved seeds and timely supply of seed. This will increase both crop production and productivity and hence lead to the achievement of Botswana's agricultural policy objectives of food security at both the household and national levels. It must be noted that no

ideal structure exists for an efficient national seed system. An efficient seed system should involve the participation of both the public and private sectors in the seed industry. Policy makers should therefore devise policies that will lead to the two sectors complementing each other. In addition, when privatising, government should take cognisance of experiences elsewhere where privatisation has not been successful because of a number of bottlenecks.

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