Changing Seed and Plant Variety Protection Laws in Tanzania—

Implications for Farmer-Managed Seed Systems and Smallholder Farmers

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Contents

On 7 April 2015 the African Centre for Biosafety officially changed its name to the African Centre for Biodiversity (ACB). This name change was agreed by consultation within the ACB to reflect the expanded scope of our work over the past few years. All ACB publications prior to this date will remain under our old name of African Centre for Biosafety and should continue to be referenced as such.

We remain committed to dismantling inequalities in the food and agriculture systems in Africa and our belief in peoples' right to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems.

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ACRONYMS and ABBREVIATIONS

ACB	African Centre for Biodiversity
AEC	African Economic Community
AECF	African Enterprise Challenge Fund
AGRA	Alliance for a Green Revolution in Africa
ARIPO	African Regional Intellectual Property Organisation
ASA	Agricultural Seed Agency
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
CAADP	Comprehensive Africa Agricultural Development Programme
CBD	Convention for Biodiversity
CGIAR	Consultative Group for International Agricultural Research
DRC	Democratic Republic of the Congo
DRD	Department for Research and Development
DUS	Distinct, uniform and stable
EAC	East African Community
EAT	Enabling Agricultural Trade
ESAFF	Eastern and Southern Africa Small Scale Farmers' Forum
FAO	Food and Agriculture Organisation (United Nations)
FtF	Feed the Future
GDP	Gross domestic product
ISTA	International Seed Testing Association
ITPGRFA	International Treaty on Plant and Genetic Resources for Food and Agriculture
LDCs	Least developed countries
MAFSC	Ministry of Agriculture Food Security and Cooperatives
MoU	Memorandum of Understanding
NAFSN	New Alliance for Food Security and Nutrition
NAIVS	National Agricultural Input Voucher Scheme
OAU	Organisation of African Unity
OECD	Organisation for Economic Cooperation and Development
OPVs	Open-pollinated varieties
PBR	Plant Breeders' Rights
PBRO	Plant Breeders' Rights Office
PPP	Public Private Partnership
PVP	Plant Variety Protection
QDS	Quality Declared Seed
RECs	Regional Economic Communities
SADC	Southern African Development Community
SAGCOT	Southern Africa Growth Corridor of Tanzania
SFSA	Syngenta Foundation for Sustainable Agriculture
SSA	Sub-Saharan Africa

SSTP	Scaling Seeds and Technologies Programme
SUA	Sokoine University of Agriculture
TaCRI	Tanzania Coffee Research Institute
TAFSIP	Tanzania Agricultural Food Security Implementation Programme
TANSEED	Tanzania Seed Company
TASTA	Tanzania Seed Trade Association
TOAM	Tanzania Organic Agricultural Movement
TOSCA	Tanzania Official Seed Certification Agency
TOSCI	Tanzania Official Seed Certification Institute
TRIPS	Trade-Related Aspects of Intellectual Property
UPOV	International Union for the Protection of New Varieties of Plants
USAID	United States Agency for Development
WTO	World Trade Organisation

TERMINOLOGY

Plant Variety Protection (PVP) and Plant Breeders' Rights (PBR)
Plant Variety Protection (PVP), also known as Plant Breeders' Rights (PBRs), is a form of intellectual property rights granted to breeders of a new plant variety. These rights give the breeder exclusive control over the propagating material (including seed, cuttings, divisions and tissue culture) and, in some cases, harvested material of a new variety for a certain period of time.

Informal or farmer-managed seed systems
In sub-Saharan Africa (SSA) the majority of seed planted by small-scale farmers has been selected and saved from the previous year's harvest, sourced from neighbouring farmers in the local vicinity and local rural trade (McGuire and Sperling, 2016). Despite this, the literature refers to these systems as being 'informal', as opposed to 'formal' seed systems in which seed breeding, production and marketing is highly regulated. Informality implies something that is sub-standard and that must be ignored, radically overhauled, or eradicated altogether. We feel it far more appropriate to replace this terminology with the term 'farmer-managed' seed systems. This recognises that farmers are the primary agents in these systems and should be treated as equal partners in any attempts to support their farming practices (ACB, 2015c).

Improved seed
An improved seed or plant variety could include any crop variety for which some form of deliberate selection, or breeding together of different varieties, has been adopted in order to achieve desirable traits. Thus, crop varieties have been undergoing improvement by farmers for the last 10 000 years. The use of 'improved' seed or varieties in this paper, refers primarily to those varieties that have been bred or selected, registered and certified under a formal seed system (ACB, 2015c).

About this paper
This paper focuses largely on the current changes to Tanzania's Seed Legislation, including the Seeds Act No. 18 of 2003, the Seeds Regulations of 2007 and the Plant Breeders' Rights Act of 2012. It will attempt to discuss the background to this legislation, the driving factors towards their reform, and their potential impact on smallholder farmers and their seed systems.

INTRODUCTION AND BACKGROUND

Tanzania's main goal is to become a middle-income country by 2025 (Tanzania Planning Commission, Tanzania Development Vision 2025) and consequently it is gearing up towards major development through transforming different sectors of its economy. Agriculture, through the development of a number of public-private partnerships (PPPs) coupled with policy reforms and programmes, has been earmarked as one of the key sectors integral to this economic transformation. The agricultural sector constitutes 75% of the Tanzanian population and comprises mostly smallholder farmers who cultivate at least 91% of the arable land and contribute at least 26.5% of the gross domestic product (GDP) (ACB, 2015a). The aim of this transformation is to achieve a highly commercialised type of agriculture and thus usher in a Green Revolution agenda.

It is no doubt that seed is one of the most critical inputs in agricultural production. In Tanzania the seed supply is derived from both formal and informal systems; 90% originates from farmer-managed seed systems, while 10% stems from the formal seed sector (Majamba and Longopa, 2014). There is a marked emphasis on the role of the private sector in Tanzania's agricultural policy regarding the provision of improved seeds for farmers. There are also a number of public-private partnership (PPP) initiatives, coupled with policy and law reform in the agriculture and seed sectors, to cement this role of the private sector.

The New Alliance for Food Security and Nutrition (NAFSN) was launched at the G8 summit at Camp David in 2012 and was implemented initially in Ethiopia, Ghana and Tanzania, in the same year. This is one of the many PPP initiatives connected to the Tanzania Agricultural Food Security Implementation Plan (TAFSIP), and other initiatives, which are embedded within the Comprehensive African Agriculture Development Programme (CAADP). Numerous commitments under the NAFSN aim to pursue several policy goals that favour both domestic and international private investments, focusing on land, tax and seed. A key component of the G8's NAFSN is to accelerate implementation of the TAFSIP through the Grow Africa Partnership. This will increase private investment and scaling innovation, and also promote food security, within the Southern Africa Growth Corridor of Tanzania (SAGCOT) (Tanzania New Alliance Cooperation Framework, 2012).

Tanzania has also been earmarked as one of the breadbasket countries in SSA by the Alliance for a Green Revolution in Africa (AGRA), which is focusing on the Southern Highlands and their links with SAGCOT. AGRA is connected to the G8 NAFSN, the Scaling Seeds and Technologies Partnership (SSTP) and receives funding from the United States Agency for International Development (USAID). Its targets include the provision of improved varieties of beans, cassava, Irish (white) potatoes, maize, pigeon peas, sorghum and soya beans, in 21 SAGCOT districts (ACB, 2015a).

In 2012 Tanzania enacted a new Plant Breeders' Rights Act, aligned to the International Union for the Protection of New Varieties of Plants (UPOV) 1991. Currently both the Tanzanian Seeds Act of 2003 and the Seeds Regulations of 2007 are under review to accommodate; related legislation such as the Plant Breeders' Rights Act of 2012, regional and international instruments and recommended areas of the review of the legal and institutional framework of the seed industry in Tanzania, among others. The process for adopting a new PBR law began after Tanzania passed a resolution in the National Assembly in 2010 (Majamba and Longopa, 2014). Under the NAFSN Tanzania has committed to ratifying a new PBR Act by November 2012 and across the region further efforts are underway to harmonise seed and plant variety protection (PVP) laws, which will have an impact on national legislation. In July 2015 in Arusha, Tanzania, a regional harmonised PVP was adopted by African governments who are members[1] of the African Regional Intellectual Property Organisation (ARIPO). The aim of the regional harmonisation of plant variety protection national laws is to increase the development of new plant varieties, especially from the private sector; facilitate the movement and availability of improved seed as a commodity, across the region in

ARIPO member states; and further increase the participation of the private sector in the formal seed sector. However, none of these efforts recognise the role of smallholder farmers—who provide 90% of the seed from farmer-managed seed systems—or farmers' rights, as set out in the International Treaty on Plant Genetic Resources in Food and Agriculture (ITPGRFA).

The review of the Seed Act 2003 may have implications for smallholder farmers and their farmer-managed seed systems. The proposed amendments generally emphasise strengthening the quality control of seeds from the formal seed sector, while smallholder farmers and their varieties are restricted to participation in the production of Quality Declared Seed (QDS) only.

This report will deal with selected key issues, as amended in the law, which largely target issues of seed quality control. In particular, efforts to eliminate fake seed, expansion of the QDS system and restriction of the sale of non-certified seed. The revised law envisages some positive changes, such as expansion of the QDS system from the ward to the district level, but it also raises concerns; for example, restrictions on the sale of uncertified seed with no exemptions for farmer-managed seeds. Further, we will examine the Plant Breeders' Rights Act and other factors that influence change and the adoption of the new seed legislation, together with probable implications of these for smallholder farmers and their seed systems.

Africa Rising, Babati Tanzania. *S. Malyon, CIAT*

OVERVIEW OF TANZANIA'S SEED SECTORS

Although the formal seed sector supplies a very small amount of improved seed to farmers in Tanzania, (about 4–10%), this sector attracts the lion's share of public support, funding and regulatory mechanisms. On the other hand, the farmer-managed seed system remains unrecognised and unsupported—despite providing at least 90% of the seed used by farmers. In 2014 the ACB conducted a survey in the Morogoro and Mvomero districts which found that over 80% of the local maize, legume and rice seed in use was non-certified, and that 43–75% of improved OPV and hybrid seeds in use was non-certified. Most farmers were recycling some seed from year to year, particularly with legumes. The main reason given for recycling seed was the high cost of certified seed, which rendered it inaccessible to most farmers. Farmers also complained about the poor quality of the seed purchased from agro-dealers (ACB, 2015a).

1. The African Regional Intellectual Property Organisation (ARIPO), formerly the African Regional Industrial Property Organisation, is an intergovernmental organisation for cooperation among African states in patent and other intellectual property matters. It comprises 19 African Anglophone countries—Botswana, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, Sao Tome and Principe, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Uganda, Zambia and Zimbabwe.

Private sector involvement in the seed sector

Tanzania's commercial seed sector can be traced back to the 1970s when support from USAID led to the establishment of seed farms, the Tanzania National Seed Company (Tanseed) and the Tanzania Official Seed Certification Agency (TOSCA). Through its Feed the Future (FtF) project USAID has been the key funder and advocate for the development of the agricultural policy environment (USAID, 2015). In 2010 the Enabling Agricultural Trade (EAT) programme was launched, aiming to renew USAID's focus on reforming legal and regulatory obstacles to agribusiness (ACB, 2012).

Following liberalisation and structural adjustment, multinational seed companies began entering Tanzania in the early 1990s, targeting profitable seed (mostly hybrid maize and some rice). Between 1993 and 2000, private companies released 17 hybrid maize varieties, notably Pannar 7, Cargill 4, Ciba-Geigy 2, Pioneer 2, DeKalb 1, and Kenya Seed 1. Pannar is now owned by DuPont Pioneer, Cargill Seed and DeKalb by Monsanto and Ciba-Geigy by Syngenta (ACB, 2015a). The Tanzania Association of Seed Traders (TASTA) was established during the late 1990s but it was registered only in 2002. In 2012 TASTA had 39 members (World Bank, 2012) and in 2002 Tanseed was fully privatised.

Information is scarce regarding industry market shares but, according to figures from 2011, Zimbabwe's Seed Co Limited[2] accounted for 46% of the market, followed by Pannar and Monsanto (both 9%) and DuPont Pioneer (at 6%) (ACB, 2015c). Under the auspices of the G8's NAFSN Monsanto and Syngenta have both pledged to expand their operations in Tanzania; Monsanto in maize and vegetable seed, and Syngenta in rice and vegetable seed. The Syngenta Foundation for Sustainable Agriculture (SFSA) has been active in expanding the use of certified potato seed in Tanzania, having provided technical support to Mtanga Farms Limited, who made their first sales of certified potato seed in 2012. SFSA also facilitated the US$ 1 million investment in Mtanga Farms from Voxtra, a Norwegian social investment vehicle and the African Enterprise Challenge Fund (AECF) (ACB, 2015c).

Alongside these global giants are a number of large international seed companies, predominantly from Asia and Europe. Two of these companies, East-West Seed of the Philippines and the Dutch-based Rijk Zwaan, have entered into a joint venture called Afrisem to produce tropical vegetable seed for local and export markets in Arusha. This venture has subsequently gained additional support from the Dutch Ministry of Foreign Affairs and Wageningen University (ACB, 2015c).

Another large international seed company, Advanta Seeds India, has also signed up to the G8 NAFSN in Tanzania, and plans to increase the adoption of improved varieties of maize, sorghum (for which it is a global market leader), sunflower, canola, rice, cotton, forages, legumes and vegetables (G8 NAFSN, 2014). Several other regional African seed companies also have a presence in Tanzania, including East Africa Seed Company (Kenya), FICA (Uganda) and MRI (Zambia, now owned by Syngenta). The Kenya Seed Company (KSC) has a presence in Tanzania through its subsidiaries, Simlaw (vegetables) and Kibo Seed (ACB, 2015c).

The Alliance for a Green Revolution in Africa has become a major player in the domestic seed industry in Tanzania. Between 2007 and 2012 AGRA gave grants to 11 Tanzanian seed companies, more than any other country in SSA (see Table 1). Tanseed received one of these grants, for the period 2007–2009, to work on improved maize, pigeon peas and sesame. However, AGRA has continued to support Tanseed beyond 2009, providing both financial and technical assistance and sharing its 'world class' consultants with the company. It also sponsors Tanseed staff training in technology and marketing skills at the University of Nairobi. Tanseed is presently looking to expand into neighbouring countries, including the Democratic Republic of the

2. In 2014 the French seed company, Vilmorin & Cie, the world's fourth largest seed company, increased its equity in Zimbabwe's Seed Co to 30%.

Table 1: AGRA grants to private seed companies in Tanzania, 2007–2014

Company	Dates	Amount (US$ 000)
Tanseed	2007–2009	169
Krishna Seed Co. Ltd	2008–2010	151
Zanobia Seeds Ltd	2008–2010	154
Itente Co. Ltd	2009–2014	170
Meru Agro-Tours Co. Ltd	2010–2013	223
Agriseed Technologies Ltd	2010–2013	200
Animata Quality Seeds Ltd	2010–2013	200
IFFA Seed Co. Ltd	2010–2013	197
Northern Seed Co. Ltd	2011–2014	200
Kipato Seed Co. Ltd	2011–2013	150
Suba Agro-Trading Co. Ltd	2012–2013	187

Source: ACB, 2015c.

Congo (DRC), Burundi, Rwanda, Mozambique and Madagascar (ACB, 2015a).

It is clear that Green Revolution initiatives and public-private partnerships intend to provide ongoing support for the policy commitments made by the Tanzanian government regarding the development of the seed industry. The ethos of the Green Revolution as this is applied to smallholder farmers is to wean them away from subsistence farming, by encouraging the use of agricultural inputs such as improved seed and fertilisers. Within the seed industry the focus is to enable private companies to provide sufficient quantities of seed within their countries and beyond their borders. The business of seed supply is seen as a lucrative profit-making arena, with corporations targeting the seed market in Africa. The likely impact of this on smallholder farmers is that they will become highly dependent on seed from the commercial sector. In addition they will incur huge costs associated with buying certified seeds and the fertilisers that perforce accompany them. Further, the blatant disregard for farmer-managed seed will lead inevitably to the erosion of varieties of landraces, which are key in the conservation of agricultural biodiversity.

Regulation of the formal seed sector

The development of seed laws in Tanzania began in the early 1970's with the implementation of a Seed Programme funded by USAID. The programme provided for a national seed law and the laboratories necessary for testing and to ensure the quality of seed at every stage of the process. Accordingly, the Seeds Act No. 29 of 1973 was enacted, followed by the Seeds Regulations of 1976. As already discussed above, deregulation and the liberalisation of seed production and distribution in Tanzania, which involved changes to both policy and legislation, saw an upsurge in the number of seed companies in the country in the 1990's.This also created a role for private sector involvement that included the privatisation of state-owned enterprises, the establishment of new quasi-government agencies, the facilitation of private entry into the seed sector, and public sector input subsidies (ACB, 2015a). As a result of this, the new Seeds Act of 2003 was enacted, followed by the Seeds Regulations of 2007.

Tanzania's seed legislation provides the foundation for several institutions. The National Seed Committee functions as an advisory body to the government and also provides the regulations for compulsory seed certification, laboratory seed testing, variety evaluation and registration under the Tanzania Official Certification Institute (TOSCI), which is a semi-autonomous institute, responsible for seed certification and quality seed control (The Legal Unit, Ministry of Agriculture, Food Security and Cooperatives (MAFSC), 2014).

The Quality Declared Seed (QDS) system

The QDS production system emanates from the Food and Agriculture Organisation (FAO, 2006). This system is recognised in the Seeds Act of 2003 and the Seeds Regulations of 2007, and separate guidelines cover its operation. It provides a semi-formal type of seed system for the participation of smallholder farmers in the multiplication of improved open pollinated seed varieties (OPVs). The QDS system attempts to bridge the challenges of seed shortages and the delivery of improved seed varieties to smallholder farmers. This semi-formal system allows small-scale farmers (who farm on no more than 5 acres) to produce seed on their own farms, declare the quality of their own seed, and sell their seed to nearby farmers, within an administrative ward[3] only. The national seed certification agency may occasionally inspect the QDS of smallholder farmers, but their involvement usually is limited to checking only 10% of the seed produced (Ngwediagi, 2008).

Unlike certified seeds, QDS seeds are affordable, readily available, and can be saved and replanted in the next season. Further, the QDS system can provide additional employment for smallholder farmers (Saidia and Mkiga, 2014)—given the current emphasis on the private sector to produce and distribute seed, some private seed companies are contracting smallholder farmers to generate certified seed.

Although the QDS system has been in operation since 2000, farmers face challenges such as inadequate technical know-how, limited financial resources—including the capital with which to operate a seed business, insufficient training for farmers on the production of QDS seed—which limits their capacity, the restriction of operating at the ward level only, and the lack of packaging materials, among others. Further, expansion of the QDS system beyond the ward level is seen as a threat by private seed companies. They feel that QDS farmers do not incur the same extensive production and distribution costs as they do.

The MAFSC is the main regulator of the country's formal seed sector. Specific regulatory aspects pertaining to seed variety release, seed certification, and quarantine and phytosanitary measures are undertaken by the Ministry's Department of Research and Development (DRD), the Plant Breeders' Rights (PBR) unit and the Crop Development Division (CALR, 2012).

According to the MAFSC, the Seeds Act of 2003 ensures that farmers' rights are protected when it comes to accessing good quality seed. However, Tanzania's seed legislation has no room for, and does not recognise, farmers' rights, farmer-managed seed systems and local varieties. It does, however, allow for the participation of smallholder farmers in seed production through the QDS system, only.

Lack of recognition within Tanzanian legislation for the contributions made by farmer-managed seed systems

Tanzania's seed legislation regards smallholder farmers as end users and their involvement in seed production is limited to QDS only—despite the 90% contribution of seed from the farmer-managed seed system by and to farmers. Further, policy makers emphasise that there are no restrictions regarding the manner in which farmers use, save and exchange their own seeds, as long as this seed does not enter the commercial market, and confirm that they are not concerned with the farmer-managed seed system/informal seed sector. The government may recognise the informal seed system only if it is organised and incorporated within existing governing institutions.

3. A ward generally comprises three to five villages.

Table 2: Seed sources in all agro-ecological zones

Crops and Seed Sources			
	Total acres per crop	**% of acres planted with seeds from farmer-managed seed systems**	**% of acres planted with seeds from the formal seed sector**
Paddy	162.5	98.6	1.5
Groundnuts	44.8	93.3	6.7
Bean	150.3	92.7	7.3
Sesame	16.5	72.7	27.3
Other crops	173.8	67.5	32.5
Sunflower	182.8	62.1	38.1
Maize	784.7	45.5	54.5
Vegetables	15.0	45.0	55.0

Source: (TOAM, 2015)

A study conducted by the Eastern and Southern Africa Small Scale Farmers' Forum (ESAFF) clearly shows the gap between the seed produced by the formal seed system for smallholder farmers, and the seed produced by the informal seed sector. According to the ESAFF study, in 2009–2010 no bean seed was available from the formal sector and farmers had to depend on their own local sources. This failure on the part of the formal sector highlights the massive contribution by farmers to seed accessibility and availability—without any support from the government and private sector—and demonstrates the inability of the formal seed sector to meet the seed requirements of smallholder farmers. A recent study conducted by the Tanzania Organic Agricultural Movement (TOAM) in eight agro-ecological zones in Tanzania confirms that the main source of seed for smallholder farmers is derived from farmer-managed seed systems. See Table 2.

Ultimately, farmer-managed seed systems dominate in terms of meeting the demand for seed from smallholder farmers, every season in Tanzania. It is an already thriving system, with farmers creating their own mechanisms for seed selection, testing, quality control, storage and marketing. This system ensures that seeds are available, reliable and affordable, while the formal seed system is unable to meet the demand from farmers. However, farmers also face challenges within the farmer-managed seed system, including inadequate knowledge on seed production, seed damage by pests and diseases during storage, the length of time until maturity, and poor germination. Farmers also mention that it is difficult to save seed after crops have failed (TOAM, 2015). Farmers expressed the need for support from the government, research institutions, NGO's and fellow farmers to counter the challenges they face.

Nevertheless, the emphasis in government policy is not on supporting and strengthening these seed systems, but rather on the "creation of a conducive environment for the private sector" through crafting the appropriate enabling environment. This approach excludes small-scale farmers because funding commitments from private and public partnerships are directed largely to seed companies and research institutions, for the production of improved seed. This is so despite the private sector focusing on a few commercially viable, high-yielding varieties only, rather than the range of varieties cultivated by farmers to satisfy their needs.

REVIEW OF THE TANZANIAN SEEDS ACT OF 2003 AND ITS REGULATIONS, IN RELATION TO SMALLHOLDER FARMERS

The need for a review of the Seeds Act of 2003 and the Regulations of 2007 has been captured in several government reports. A report conducted in 2014 by the Ministry of Agriculture cited the main objective of the review-to have a better and sound legal framework which necessitate for the development of the seed industry, defend the interest of both parties and respond to international, regional procedures for seed regulation. The review is to be done taking into consideration outdated provisions, gaps, and inconsistent provisions, related legislation such as the Plant Protection Act and Plant Breeders Act; regional and international instruments Tanzania is signatory to and legal and institutional framework of the seed industry in Tanzania. The following factors that facilitate the review of the Seed Act were further elaborated;

(a) on-going regional harmonisation on seed industry in order to remove obstacles at national and regional levels and encourage investment in the seed market by new and existing entrepreneurs;
(b) increase participation by the private sector in seed production in order to make seed available, including by way of PPPs in regard to the multiplication of public seed;
(c) to control fake seeds (The Legal Unit, MAFSC, 2014).

A first revision of the Seeds Act of 2003 was conducted in 2014. The Miscellaneous Amendments were published in the Gazette of the United Republic of Tanzania (URT) on 16 May 2014 and included changes to six sections: Seed Inspectors, Samplers and Analysts; Engagement in the Seed Activities; Seeds Standards; Compensation for Loss caused by Seed; Registration of Seed Seller; and Sub-standard Seeds. Further revisions of the Seeds Act were undertaken the following year and incorporated definitions of seed to comply with definitions used by the Organisation for Economic Cooperation and Development (OECD), strengthening the mandate of TOSCI, the expansion of QDS to the district level, and the development of a stakeholders' forum to discuss challenges facing the seed sector.

Regional harmonisation and impacts regarding changes in the seed legislation

Tanzania is a member of two Regional Economic Communities (RECs)—the East African Community (EAC)[4] and the Southern African Development Community (SADC).[5] Harmonisation and rationalisation of seed laws across the region aim to ensure the movement and availability of improved seed as a commodity, to increase participation by the private sector in the seed sector, and to reduce the transaction costs involved in the movement and distribution of seed (Waithaka *et al*., 2011). Thus the harmonisation of seed laws across the region includes, *inter alia*, the establishment of interagency certification for seeds in transit within the region, and the simplification of seed export/import documentation in most countries within the region.

The Seeds Act of 2003 and its amendments in 2014, together with the Seeds Regulations of 2007, have been developed under the EAC/ASARECA harmonisation processes—ASARECA being the Association for Strengthening

4. The East African Community (EAC) is an inter-governmental organisation comprising five countries in the African Great Lakes region in eastern Africa—Burundi, Kenya, Rwanda, Tanzania and Uganda. The organisation was founded in 1967, collapsed in 1977, and was revived on 7 July 2000. The EAC is an integral part of the African Economic Community (AEC).
5. The Southern African Development Community (SADC) is an inter-governmental organisation whose goals are to further socio-economic cooperation and integration, and political and security cooperation, among 15 southern African states. It complements the role of the African Union (AU).

Village Based Agricultural Adviser and QDS farmer, Mr. Bakari, showing rice nursery on a Farmer Field Plot in Mvomero, Tanzania.

Agricultural Research in Eastern and Central Africa. So far, Tanzania has implemented 98% of its ASARECA seed obligations as stipulated in the Seeds Act.

As part of the SADC regional community Tanzania has also signed the SADC Seed Memorandum of Understanding (MoU). This allows the registration of a plant variety released by any two SADC member states without further testing (ACB, 2015a). The SADC process for developing harmonised technical agreements on seed regulation was initiated in 2004–2005 and is very similar to the one used by ASARECA in 2000 (Waithaka *et.al*., 2011). It focuses on (i) SADC crop variety testing, registration and release systems; (ii) SADC seed certification and quality assurance systems; and (iii) SADC quarantine and phytosanitary measures for seed (SADC, 2008). Technical agreements on harmonisation are designed to facilitate the adoption of improved seed in the region and ease the movement of such seed from country to country.

Under the SADC harmonised seed law framework QDS is classified as one of the seed classes. The production of QDS is based on three principles: (i) only varieties included in the SADC Variety Catalogue will be eligible for seed production; (ii) seed producers are required to register with the National Seed Agencies; and (iii) the National Seed Agency will check 10% of the seed crops (SADC, 2008). These principles are not so different from the QDS system in Tanzania. If implemented effectively within the SADC region, the QDS system may support the involvement of smallholder farmers in seed production, and also ensure some recognition of smallholder farmer-managed seed systems, provided that the basic seed emanates from public institutions.

Efforts to accommodate the international standards and schemes adopted by the RECs have brought Tanzania to the final stages of accreditation by the quality assurance system of the International Seed Testing Association (ISTA), through one of its seed laboratories based in Morogoro. The country is also aligning itself with schemes implemented by the OECD.

The new Tanzanian Seeds Act may adopt several definitions that comply with OECD schemes, including referring grade to certified class, subjecting emergency seed to laboratory tests and post-control observations, and referring to standard seed as a category of seed that is distinct, uniform and stable (DUS).

Quality control and access to quality seed

One of the main challenges faced by farmers is the prevalence of fake seed. It has been reported by both public and private sector stakeholders that at least 25–30% of certified seed used in Tanzania is fake seed[6] (USAID, 2013). Many farmers have also complained about the failure to germinate of seed acquired from agro-dealers and other seed supply agencies. In certain cases some of these seeds were acquired through the National Agricultural Input Voucher Scheme (NAIVS) (USAID, 2013). This shows the failure of the formal seed system regarding the precision of seed quality control processes, despite its support and funding from the government.

While efforts to remedy this core problem have led to the inclusion of several sections on quality control within the Amendments of 2014, these changes to the law have come at a time when farmers have already lost faith in seeds from the formal seed sector. The government has experienced difficulties in terms of technical capacity and the authority with which to hold accountable the suppliers and distributors of fake seeds and thus the revised legislation has given a mandate to TOSCI to address these challenges (AllAfrica, 2015).

The amendments of 2014 provide for the appointment of seed certification officers, seed inspectors, samplers and analysts at the local government level. These officials are required to inspect the quality of seed from private producers, processors, and sellers and distributors at the local levels of villages, wards and districts. Additional regulations have been set for seed standards, seed classes, tests and labels for the sale of certified seed, and also specify that any seed dealer must ensure the quality of his/her own seed and be registered before he/she can engage in any seed business.

Further, in the case of failure of the seed to germinate, the Act requires that the seed dealer compensate the farmer or buyer of seed, according to evidence provided by seed certification officers, inspectors, samplers and analysts. Inspectors are allowed also to confiscate seed deemed to be unfit for use or, in other words, sub-standard seed. Both the OECD seed schemes and UPOV define sub-standard seed as any seed that does not meet the DUS standard.

Section 14 of the Amendments to the Seeds Act restricts the sale of uncertified seed, untested seed or any seed that has not followed the procedures specified in the Act. It allows a fine of not less than 100 million shillings and no more than 500 million shillings, or imprisonment for a term of not less than 5 years and no more than 12 years, for any infringements. A seed review meeting held in April 2015 proposed the following addition to Section 14: "Any person who sells as certified seed any seed which is not certified under the provisions of this Act", will be convicted and fined or imprisoned as above. Restrictions governing the sale of uncertified seed have provoked different responses, especially from farmers and members of civil society. These will be discussed below.

The review of the Seeds Act has also elicited recommendations from farmers, farmers' associations and civil society organisations, about expanding QDS operations to the district level. This will further increase the availability of seed to farmers. Efforts to sustain the QDS system are urgently needed and experience shows that Tanzania's government would be willing to support an initiative captured within its policies and legislation.

Implications for Tanzania's smallholder farmers arising from changes to the Seeds Act and its Regulations

While all the changes regarding quality control are perceived as a benefit that will ensure the provision of quality seed to farmers and, at the same time, prevent unscrupulous seed dealers from selling fake seed to farmers, provisions

6. Fake seed includes seed varieties that: (1) are of poor quality with low germination; (2) are of poor quality with mixtures of other varieties; (3) have been altered with grain; (4) have been repackaged in fake containers; (5) are sold with expired labels; and (6) are not registered in the National Variety Catalogue.

relating to farmers' rights and the recognition of farmer-managed seed systems have been omitted. There are no exemptions for farmers who supply their own seed through their own seed systems. While farm-saved seeds are unable to meet the DUS criteria, or the requirements and costs for seed sampling and testing, farmers nevertheless engage fully in the seed sector, especially in regard to seed exchanges and the occasional sale of local varieties or farm-saved seeds to kin, neighbours or friends (social networks), community-based seed groups, and to local markets (McGuire and Sperling, 2016). The government may not always suppress farmers' varieties and recycled farm-saved seeds, or punish farmers who sell their own seed without being licenced, but current revisions to Tanzania's legislation may have serious implications for the future of farmer-managed seed systems.

In Igunga district, for example, there are a number of paddy seed producers who are not registered and are not producing certified or QDS seed, but these farmers select seeds and sell them to fellow farmers (TOAM, 2015). The question remains: how will the rights of these farmers be protected, or, put another way, will these farmers face prosecution at some time in the future? Civil society organisations in Tanzania have constantly urged the government to exempt smallholder farmers and their varieties from the provisions of the seed law, so as to avoid any restrictions and prosecutions that may arise in the future.

The government should demonstrate that it is not concerned with criminalising farmers and their seed systems, by providing specific exemptions for smallholder farmers. Ethiopia's seed legislation provides a good example of such exclusions. It recognises and provides exemptions for farm-saved seeds and states that the Seed Law [Seed Proclamation No. 782/2013] under section 3-Scope of Application- may not be applicable to:

(a) the use of farm-saved seed by any person;
(b) the exchange or sale of farm-saved seed among smallholder farmers or agro-pastoralists; (Ethiopian Seed Proclamation, No.782/2013).

Rwanda Seed Systems, Bean seeds. *SGeorgina Smith, CIAT*

The Tanzanian Seeds Act should adopt exemptions for farm-saved seed as per the Ethiopian law, and also restrict only those persons who sell seed that is not certified as certified, as proposed in the seed review meeting. This will allow some leeway regarding the exchange and sale of farmers' seeds and strengthen the farmer-managed seed system.

Expansion of the QDS system to the district level, as proposed in the revision of the Act, should garner support for QDS as well as bridge some of the gaps in the system, such as the lack of financial resources and capacity building. Since the government has taken the first step towards recognising the QDS system in its seed legislation, expansion of QDS operations to the district level could serve to open the doors to public financing and support.

To conclude, the review process is still ongoing and it is debatable whether the new proposals will find their way into the final Act. If it does, it will represent a key victory for farmers involved in the QDS system. A further benefit would be to limit the prohibition on the marketing of uncertified seed to fake seeds only (i.e. uncertified seeds being sold as certified) and to sanction the marketing of farm-saved (uncertified) seed.

PLANT VARIETY PROTECTION (PVP) IN TANZANIA

The World Trade Organisation (WTO) and its Trade-related Aspects of Intellectual Property Rights (TRIPS) agreement

Tanzania is a member state of the World Trade Organisation (WTO) and subscribes to its Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement. Article 27.3.(b) of the agreement requires member countries to implement a form of PVP. However, the TRIPS agreement allows states a degree of flexibility, and provides that members may implement a sui generis system of protection, i.e. a system that is unique, or of its own kind, and which is tailored to the needs of plant breeders. While national governments have a number of options from which to choose when selecting the intellectual property regime applicable to plant varieties, the model of protection developed under UPOV is promoted by the international seed industry as the only model that will inspire confidence among investors.

UPOV, in particular the current convention open for membership, UPOV 91, grants extremely strong rights to breeders and severely limits farmers' rights to recycle, exchange and trade the farm-saved seed of protected varieties. This is clearly undesirable for countries in which farmer-managed seed systems are dominant. Governments facilitate the distribution of improved and protected varieties through subsidy programmes to smallholder farmers. For example, in Tanzania the NAIVS (which was established in 2009 and constituted 37% and 44% of the annual MAFSC budget between 2009 and 2012) targeted the distribution of hybrid and improved OPV maize and rice (ACB, 2015a). NAIVS enables the government, through private dealers, to distribute vouchers to households that cultivate approximately 1 hectare of maize/rice and can afford top-up payments for input packages. These improved varieties, especially the OPVs, which emanate from a mixture of external germplasm from institutes within the Consultative Group for International Agricultural Research (CGIAR) and local varieties (ACB, 2015a), are thus closely related to local varieties. They adapt easily to local conditions and farmers are able to use traditional methods with which to experiment and select seeds, including the improved varieties, during and after harvesting. Consequently the improved varieties are merged with other seed within the farmer-managed seed system and, in the end, it is hard to differentiate between protected and unprotected varieties. Tanzania joined UPOV in November 2015 through the revision of its PBR law of 2012 and is already a member of UPOV 1991.

The least developed countries (LDC's), which include Tanzania, were given a grace period until 1 July 2021 (which can be extended) to comply with Article 27.3.(b) and introduce PVP legislation. Effectively, this means that LDCs are in no way obligated to implement a PVP system before July 2021.

There is also a lot of pressure for the regional harmonisation of UPOV-style PVP laws through the RECs and regional intellectual property institutions such as ARIPO. Such harmonisation will allow breeders within the seed industry to claim intellectual property rights protection in several countries across the ARIPO region in one swoop. This will not only drastically reduce their transaction costs but will ensure that their protection is recognised and enforced uniformly across the region. On 6 July 2015 at a diplomatic conference in Arusha the Protocol for the Protection of New Varieties of Plants (the 'Arusha Protocol') was adopted. It will come into force once it has been ratified by four countries. Having hosted the conference, and signed the Protocol in September 2015, Tanzania is seen as one of the champions of this process.

The Arusha Protocol is based on UPOV 1991 although some of its provisions go beyond the convention. Notwithstanding the enormous diversity found in the agricultural systems operating in the 19 member countries of ARIPO, the Protocol creates a one-size-fits-all centralised regional PVP system. The Protocol does not recognise farmers' rights and fails to acknowledge the contributions made by farmers to the conservation and development of plant genetic resources. These resources

constitute the basis of food and agriculture production, as provided for in Article 9.1 of the ITPGRFA, and include the rights to save, use, exchange and sell farm-saved seed/ propagating material.

Over the past few years civil society and farmer organisations across SSA have consistently raised numerous concerns with the Protocol which it was developing as well as when it was adopted (AFSA, 2015). The Arusha Protocol will facilitate the expansion of international seed companies in Africa, enabling them more easily to obtain and enforce breeders' rights across the region. Having signed the Protocol Tanzania has yet to ratify it. Before it does so, the government should embark upon an open and transparent public consultation process to discuss the implications of such ratification for the country and smallholder farmers and their seed systems.

Tanzania's Plant Breeders' Rights Act 2012

Tanzania's Plant Breeders' Rights (PBR) Act of 2012 replaces the Protection of New Plant Varieties (Plant Breeders' Rights) Act No. 22 of 2002. According to the government the aim of the new PBR Act 2012 (which is based on UPOV 1991) is to promote plant breeding activities and stimulate and promote agricultural development. The process towards Tanzania's membership of UPOV 1991 began in 2010 following a resolution adopted by the National Assembly. In addition, under the G8 New Alliance Framework, Tanzania has also committed to having in place, by November 2012, PBR legislation that is aligned to UPOV 1991. (See Appendix 1.)

The PBR Act 2012 is meant to provide incentives for the seed industry. It is argued that conferring plant breeders' rights will attract investment from the private sector, thus stimulating research and the development of stronger and productive plant varieties (Ngwediagi, 2008). It is expected that the Act will motivate breeders to develop more, new, improved varieties, which will boost the agricultural sector and, consequently, farmers will benefit from the expanded range of available improved varieties. Emphasis has been placed on the involvement of private companies to bulk up and commercialise public varieties through license agreements with the breeder.

Rice Nursery Embeti Village-Mvomero, Tanzania.

As justification for joining UPOV 1991 the Tanzanian government cites the low number of applications for breeders' rights, the low involvement of private breeders (both local and international), and the lack of confidence in the PVP system among breeders and investors—they are not convinced of the merits of a system that is non-UPOV-compliant (Ngwediagi and Doyire, 2013). By June 2014 a total of 73 applications for PBR grants had been received, 48 of which have been granted PBR titles. Noteworthy applicants included the MAFSC (25 applications); the Sokoine University of Agriculture (SUA) (3 applications); the Tanzania Coffee Research Institute (TaCRI) (18 applications); Tanzania Breweries Ltd (2 applications); and Seed Co. Zimbabwe (5 applications) (Majamba and Longopa, 2014).

The PBR Act and implications for smallholder farmers

The PBR Act of 2012 accords strong rights to breeders—at the expense of rights for farmers—in terms of saving, reusing and exchanging the propagating material of protected varieties, whether these emanate from the private or public sectors. The Act requires the authorisation of the breeder if a person wishes to engage in one or more of the following activities: production or reproduction (multiplication), conditioning for the purpose

Sunflower seeds at Mkindo local Market Mvomero, Tanzanias.

of propagation, offering for sale, selling or marketing, importing and exporting of the protected propagating material and harvested material (sections 30 (1)-(3)). This effectively curtails the age-old practice of small-holder farmers to save, sell, multiply, and exchange any or all of their seeds with other farmers, freely, as they have done for generations. Even in present times, this practice of saving, exchanging, improving and cultivating seed that emanates from both the formal and farmer-managed seed sectors provides invaluable support for agricultural systems in most developing countries. Furthermore, smallholder farmers are the largest and most prolific group of seed breeders in Africa—for centuries they have successfully cultivated an abundant diversity of crops.

However, the Tanzanian government states that the PBR Act of 2012 does not restrict the rights of farmers, because the law provides for activities that are conducted privately and for non-commercial purposes, under section 31 (1) (a). The government further stipulates that under section 31 (2). Breeders' rights do not extend to farmers who use harvested material from planting the protected variety for propagating purposes on their own holdings of a particular variety. In addition, it points out that the Act also excludes breeders' rights from fruits, ornamentals and vegetables or forest trees, as per the list of agricultural crops specified by the Minister and detailed in section 31 of the Act.[7]

Ostensibly this allows farmers to use protected varieties for the purpose of subsistence farming, and to provide food for their families, but only within the boundaries of their own holdings. In Tanzania this could apply to farms of not more than 5 acres, depending on the PBR regulations. Furthermore, in a meeting to discuss a legal guide to strengthen Tanzania's seed and input markets the government stated that this Act, as with the Seeds Act, is only for the regulation of commercial varieties from the formal seed sector, and has nothing to do with farmers' varieties or the farmer-managed seed system.

Nevertheless, farmers use improved protected varieties from time to time and restrictions on the saving and exchange of these varieties, without authorisation, will have an adverse effect on their food production systems. Further, farmers still conduct local trade of all seed in their systems, even on a small scale, and the Act may erode these practices. In addition, legal limits that prohibit farmers from exchanging seed will result in the loss of genetic material which contributes to the development of locally appropriate seeds and crop diversity.

Most of the protected varieties developed are those of high commercial value—maize, rice, tomatoes, cashew nuts, coffee, sesame,

7. The draft regulations specify the list of crops to be specified by the Minister.

barley, cotton, sorghum and beans (Majamba and Longopa, 2014). Consequently, while commercial breeders are bound to receive incentives and resources for the development of varieties, the quality of farmers' varieties will decline. Eventually farmers will be forced to depend on seeds from the formal sector, whose commercial varieties will have proliferated over time (Majamba and Longopa, 2014).

Impacts on Zanzibar

In order to approve Tanzania's PBR Act, UPOV required that both mainland Tanzania and Zanzibar present their separate laws. However, according to the Constitution of the United Republic of Tanzania of 1977, agriculture is a non-union matter between mainland Tanzania and Zanzibar. Thus it would require that each part of the Union enact a separate law but in harmony with one another. It appears that Zanzibar's process for the enactment of a UPOV compliant legislation was a rushed process, with limited understanding of the implications for farmers, civil society and other stakeholders about the possible impacts of adopting such a PBR Act. Rigorous sensitisation meetings were conducted by mainland Tanzania for Zanzibar's officials in order to develop a PBR Act in a short period, after they had failed to secure acceptance from UPOV. Zanzibar's PBR Bill, which is very similar (word for word) to mainland Tanzania's PBR Act, received a positive decision from the UPOV Council on 22 March 2013; it was accepted into law on 2 July 2014 by the House of Representatives of Zanzibar. The two PBR Acts were then submitted to UPOV for consideration. According to the UPOV membership database, the United Republic of Tanzania became a full member of UPOV 1991 in November 2015.

Farmers' rights and the Seed Treaty

Tanzania ratified the International Treaty known as ITPGRFA in April 2004. This Treaty aims to enforce the Convention on Biological Diversity (CBD) of 1992 by protecting plant genetic resources from extinction, as well as protecting countries and persons who possess these resources from losing their benefits through inattention and exploitation (Shashiskant, 2015). The Treaty affirms that the rights recognised are fundamental to the realisation of farmers' rights, as well as the promotion of farmers' rights at the national and international levels. These include saving, using, exchanging and selling farm-saved seed and other propagating materials, and participating in decision making and the fair and equitable sharing of the benefits arising from the use of plant genetic resources for food and agriculture. It also requires its contracting parties to take responsibility for realising farmers' rights and taking measures to protect and promote farmers' rights.

Tanzania began the process of domesticating the ITPGRFA in 2007 when the country initiated the development of a legal framework for Plant Genetic Resources for Food and Agriculture. Unfortunately the process is now at a standstill. The draft document has been stalled at the cabinet level for a lengthy period of time and it seems that there is no rush by the Tanzanian government to adopt the Treaty. In Tanzania the implementation of farmers' rights under the Treaty rests solely within the jurisdiction of contracting parties, as opposed to this being an international obligation in terms of law. In any event, even if legislation is enacted to give effect to the Treaty's provisions on farmers' rights, it is highly likely that such legislation will be subservient to Tanzania's PBR Act.

Most countries that are contracting members of the Treaty have been unable to domesticate it, due to conflicts with UPOV 1991. This could be the dilemma faced by the Tanzanian government. It is indeed impossible for countries to find a balance between a restrictive PVP system and a Treaty that protects farmers' rights.

While LDCs cite financial constraints for the lack of implementation of the Treaty, some of these countries are receiving support for the application of their PBR laws, providing that these are UPOV 1991 compliant. In 2014, 54 civil society and farmers' organisations sent a letter to the ITPGRFA Secretariat, calling for an independent commission to investigate the implementation of Article 9 of the Treaty, stipulating that this must be done in a

participatory manner. This recommendation was issued in a Notification by the Secretariat that outlined a process for the identification of inter-relations between the Treaty, UPOV and WIPO. However, recent developments indicate that the process falls short of CSO expectations. On 17 March 2016 UPOV took a decision to hold a joint symposium, in October 2016, with the Treaty institutions on the inter-relations between the Treaty and UPOV Conventions. The purpose of such a symposium is to present information and experiences regarding the implementation of the UPOV Conventions and the Treaty (Sangeeta.S, 2016).

For Tanzania, striking a balance between the Treaty and its own PBR Act means that amendments will have to be made to the Act to include farmers' rights. More than that, it should open up fresh discussions about other sui generis systems of PVP, as adopted by countries such as Malaysia, Thailand and India, which aim to provide for more equitable and balanced legal frameworks.

CONCLUSION

The Green Revolution agenda that underpins agricultural transformation has greatly influenced agricultural policy, programmes and investments in Tanzania since the imposition of the structural adjustment programmes in the 1990s. A focus on seed production as an area for the expanded role of the commercial seed sector has precipitated the drafting of new national and regional legal frameworks governing the seed sector. Law reform is designed to support public-private partnerships and policy commitments, as well as attract further investment in agriculture. PPPs are the preferred vehicles for agricultural development at present and this is likely to continue into the future. While such partnerships can build institutional and technical capacity in seed through research and development and extension services, support is inclined towards the protection of private interests and profits.

Seed law reform has neglected farmer-managed seed systems and their contributions to the seed sector in Tanzania. The lack of awareness about this reform, its intent and the impact of the legislation on smallholder farmers is shared by many different groups and it has been left to the government and the private sector to define and shape the policy agenda.

It is clear that the government is not yet ready to recognise the rights and needs of smallholder farmers within seed and PVP legislation, beyond transforming them from subsistence farmers to commercial farmers, with a strong emphasis on their use of improved certified seed, especially through government subsidy programmes. Seed Law does not provide exemptions for smallholder farmers with regard to farm-saved seed. The Tanzanian government should develop policies that prevent commercial seed encroachment, which damages farmer-managed seed systems and leads to the loss of agricultural biodiversity. It should explicitly recognise farmers' rights and support flexible and adaptive seed quality control processes, appropriate to local conditions. Specifically, it should recognise and provide for exemptions in the seed law for all uses of farm-saved seeds, so as not to criminalise farmers' activities concerning seed, and it should remove propriety ownership on all seed once it enters the farmers' seed system. Furthermore, public resources such as programmes and budgets should be channelled towards experimentation and the development of farmers' existing seed systems, through the improvement and development of farmers' varieties. Farmers should be seen not only as end users but also as breeders and seed producers, and as essential participants in the process to meet the demand for seed in the seed sector.

APPENDIX 1: KEY POLICY COMMITMENTS BY THE GOVERNMENT OF TANZANIA

Policy Indicators Improved score on Doing Business Index Increased $ value of new private-sector investment in the agricultural sector % increase in private investment in commercial production and sale of seeds		
Objective	**Framework Policy Actions**	**Timeline**
Increased stability and transparency in trade policy, with reduced tariff and non-tariff barriers.	1. Implement policy alternatives to the export ban identified in the comprehensive security study, in order to strengthen the response to food emergencies while minimising disruption in the market.	July 2014
Increased incentives for the private sector by reducing taxes and increasing transparency and consistency of the agricultural tax and incentive system.	2. Reduce or lift the pre-profit tax at farm-gate ("cess") on crops.	July 2013
	3. Reduce or lift the VAT on spare parts for farm machinery and equipment.	July 2013
	4.Secure certificate of land rights (granted or customary) for smallholders and investors:	
	All village land in Kilombero demarcated;	August 2012
	All village land in SAGCOT region demarcated; and	June 2014
	20% of villages in SAGCOT region to have completed land use plans and have received a certificate of occupancy.	June 2014 with an additional 20% by June 2016
	5. Develop an instrument that clarifies the roles of land implementing agencies (TIC, RUBADA, Ministry of Lands and Local Government) in order to responsibly and transparently allocate land for investors in the SAGCOT region.	December 2012

Objective	Framework Policy Actions	Timeline
Develop and implement domestic and regional seed and other inputs policies that encourage greater private sector participation in the production, marketing and trade in seeds and other inputs.	6. Reduce or lift taxes (cess, VAT) on seeds and seed packaging.	
	7. Finalise a Revised Seed Act that aligns plant breeder's rights with the International Union for the Protection of New Varieties of Plants (UPOV) system.	
	8. Review and benchmark with international best practices the time required to release new varieties of imported seeds from outside the region.	
	9. Authorise qualified private sector companies to produce foundation seed under proper supervision and testing.	
	10. Secure ISTA and OECD seed testing accreditations, to enable regional and international seed sales.	
	11. Review and benchmark with international best practices the time required to register imported agrochemicals outside the region.	
Implement harmonised nutrition policy.	12. Update and align the National Food Nutrition Policy with the National Nutrition Strategy.	June 2013

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