

# POLICY BRIEF

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## BUILDING AN ENABLING ENVIRONMENT FOR SEED SECTOR GROWTH

USAID-EAT Project | Iowa State University Seed Science Center

A dynamic and responsive seed industry is an essential component of a healthy agricultural sector. Farmers everywhere depend on access to high quality seed to enhance their productivity. Despite commitment by governments to increasing access to improved seed, the vast majority of farmers in developing countries do not utilize improved varieties. The problem is often a policy environment that does not enable the private sector to generate and meet market demand for seed.

Seed<sup>1</sup> industries, particularly in developing countries, suffer from a number of particularly challenging constraints in starting and expanding operations. A seed business is unique in that, whether it sells each product once or more a year, it is exposed to substantial risk in that it must predict demand and prepare at least two to three years in advance. In addition, the private sector often is burdened with many additional constraints, including lack of access to breeder/foundation seed, insufficient capacity and knowledge of the technical aspects of seed production, financing constraints, and lack of local suppliers of related goods and services.

Few other industries encounter such barriers and are yet so critical for a country's food security. Unfortunately, governments tend to treat the seed industry differently than most others, exercising an unusual amount of control over it with the justification of ensuring farmer access to seed. However, experiences from diverse economies in Latin America, Africa and elsewhere suggests that government treatment of seed-related business often has a pernicious effect, limiting private sector participation and adding production costs and delays. This behavior puts access to improved seed beyond the reach of smallholders and even some larger agribusinesses.

<sup>1</sup> 'Seed' shall refer to all seed, plants, and parts of plants such as cuttings, roots, tubers, bulbs, which are or are intended to be used for propagation.



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**Rather than advancing government control and supervision, policies should instead focus on offering initial support to the private sector while enabling it to adapt to the market and develop independently through a transparent, rules-based legal and regulatory system.**

This briefing paper is meant to inform policymakers and donors interested in agriculture sector reform about one of the key pillars of agricultural growth – building an enabling environment for seed sector growth. This briefing paper is organized around three key principles necessary to develop the seed industry as a successful business. Principle one sets out the key elements necessary to set up a legal and regulatory framework and remove unnecessary barriers to private seed sector growth. Principle two addresses the key policy interventions governments need to make to build up market capacity for the private seed industry. Principle three identifies key interventions required by governments to implement regional harmonization agreements.

The central finding of this brief is that for a vibrant and healthy seed industry to develop, rather than advancing government control and supervision, policies should instead focus on offering initial support to the private sector while enabling it to adapt to the market and develop independently through a transparent, rules-based legal and regulatory system.

### **PRINCIPLE 1: The legal and regulatory framework should create adequate certainty and market conditions necessary for private seed sector growth**

Government seed policy should encourage and support private sector growth in order to spur innovation and maximize access to productive genetic resources. However, a cross-country snapshot of government regulation of seed industries reveals that governments frequently impose strict legal and regulatory requirements on the seed industry that serve to limit the start-up and expansion of seed businesses without providing substantial public benefit. Seed legislation often imposes burdensome standards for a seed company to function, such as requirements for particular seed processing equipment and seed storage facilities. In Ghana, for example, the recently amended seed law requires that certification of maize includes a test on whether or not swine would consume the dried kernel. Such standards tend to limit all but the largest players from entering the market. In addition, seed legislation often limits the role of the private sector by only recognizing seed produced through a lengthy and expensive government-run multiplication process. These rules confine a relatively straightforward but time-consuming process to government agencies ill equipped to handle the time-sensitive nature of bringing new varieties to market. Moreover, they serve to limit the development of the private sector through unnecessary technical, legal and administrative barriers. Instead, experience in countries with a robust seed sector suggests that the legal and regulatory framework should focus on creating adequate certainty regarding the regulation of seed, while creating the market conditions necessary for a private seed sector to flourish. This can be achieved through a rules-based, structured policy framework with clear, enforceable implementing regulations. South Africa is a strong example in this regard, where the government has transferred some functions to the private sector; including seed certification to the South African National Seed Organisation (SANSOR). The USAID-EAT Project in conjunction with the Iowa State Seed Science Center, based on recent experience from the field, have identified a number of key principles that should be made central to all legal and regulatory seed frameworks to achieve this goal:



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## **ESTABLISH A FORWARD-LOOKING SEED LAW**

The role of seed law is to facilitate the establishment and development of the seed system of a country, including the provisions to ensure the quality of the seed delivered to farmers, and the growth of the seed industry. It outlines the processes and responsibilities for seed development, including variety release system, seed certification, seed production and marketing, and seed control. A common weakness of seed law in developing countries is that it seeks to include specific seed requirements, such as the minimum germination and purity levels needed for quality seed, into the articles of the law. This means that change to these requirements will require a change of the law, with associated time, effort, and resources needed. Instead, experience shows that flexible and forward-looking legal frameworks, with a minimum number of articles that address core seed system issues of variety release, registration, certification, production/marketing, seed control, SPS and authority, are more likely to support a dynamic seed sector in the future. Specific requirements associated with an article should be avoided and left for the regulations.

## **REDUCE BURDENSOME AND UNNECESSARY START-UP REGULATIONS**

The legal and regulatory framework often establishes unnecessary conditions for the start-up of a seed business. These include requirements for seed processing equipment, seed storage facilities, seed laboratories, land specifications for seed production, as well as mandatory education requirements for plant breeders and seed production specialists. This substantially increase start-up costs and in many cases makes it prohibitive for an entrepreneur to venture into the industry. These requirements are not necessary, as seed companies can access many of these services on the open market. Also, the process for registering a seed business should be no different from any other business, barring additional health and safety requirements, and without participation restrictions. This could be achieved with a clear definition of a private seed business, such as: "any individual or group of individuals conformed in a legal entity, which is willing and able to produce and market quality seed under their own responsibility".

## **REMOVE RESTRICTIONS ON VARIETY RELEASE**

A variety evaluation and release system outlines the list of seed varieties that can be marketed in a country, and is considered a key component in ensuring trust and quality control in seed systems in many countries. Many legal and regulatory frameworks require mandatory testing by the National Agricultural Research Institutes (NAROs) and do not accept any data from the private sector. In these cases, the testing procedures are often lengthy and inefficient. In El Salvador, for example, before regional harmonization reforms, the variety testing process took four years. The reason often cited by governments for these restrictions is that the private sector is not sufficiently objective and cannot be trusted in the data they generate. However, it is not in the interest of the private sector to produce and market poor seed varieties, as any inferior products will promptly be rejected by the market. Instead, the legal framework should allow for a transparent variety evaluation and release system that eventually can allow private breeders/companies to evaluate and release their own materials. This could be done initially by allowing the seed companies to conduct their evaluations and provide the data under government supervision, if necessary, until the private sector develops the capacity to self-regulate.

## **EXAMPLES OF SUCCESSFUL LEGAL AND REGULATORY REFORM**

In the early 1990's, Peru had three private seed companies and two parastatals and a poorly-run seed certification service. Through USAID support for revamping the Peruvian seed system initiative, CODESES (Comites Departamentales de Semillas) were established. CODESES were designed to develop and enhance Peru's seed industry by providing training, assistance, and other services to small seed entrepreneurs. Eight seed service centers were established as a public-private partnership across the country, which provided field inspections, seed testing, and some seed processing/storage and business orientation support. Central to the success of CODESES was a change in the regulations, which allowed for third-party certification and enabled CODESES to implement seed certification activities in each of the eight centers. As a result of programs like CODESES, the number of established seed companies increased substantially to thirty five over the 4-year project and continued to grow and today boasts over eighty seed companies. Today, farmers in Peru benefit from access to high-quality seeds across a wide variety of crops including rice, maize, potatoes, beans, cotton.

**As a seed industry develops, the government should focus on moving out of the market and creating a conducive environment for further development, integration and privatization.**



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## **REMOVE RESTRICTIONS ON SEED CERTIFICATION**

Seed certification is the process of ensuring the genetic purity of a seed variety. For a seed certification system to be effective, its design, management, and modification require active participation of seed producers and regulatory authorities. However, regulations often require mandatory government-run seed certification, again citing concerns over the objectivity of the private sector. This unnecessarily constrains private seed businesses, with lack of government capacity causing delays in laboratory testing and burdensome and costly bureaucratic processes. In addition to the certification fee, companies often have to pay for inspector field visits or provide other incentives. Enabling the private sector to certify seed, through an accreditation process, will lower these burdens and increase the speed and efficiency of the seed certification process.

## **INTRODUCE A PLANT VARIETY PROTECTION LAW**

The process of plant breeding is a long and costly commitment, yet without appropriate protections, seed varieties could be replicated quickly and cheaply. A national plant variety protection (PVP) law (also known as plant breeders' rights) is a key factor to the development of a seed sector. A PVP law is necessary to protect the rights of breeders and provide the correct protections and incentives for the development of new varieties of plants. In addition, the law should allow both public and private breeders to collect royalties, giving them a chance to recoup costs and profit from their investment. NAROs should be allowed to keep and invest their income generated through new varieties. Often, NARO income is collected into a central government fund, which limits the funding available for crop improvement programs. Finally, national laws should also follow the international principles of UPOV<sup>2</sup>, so that countries eventually may access UPOV membership, if so desired. The introduction of PVP law has had immediate effects on participation and production in countries where promoted and approved. In China, for example, the introduction of PVP laws expanded both the number of new varieties and also the number of crops protected. In 1999, there were no varieties protected. In 2000, when the legislation was introduced, there were 33 types of maize varieties and 6 types of rice varieties. In 2003, there were 255 varieties protected, across a range of crops including rice, wheat, maize, pear, peanut, oilseed, soybean, watermelon and Chinese cabbage.<sup>3</sup>

## **PRINCIPLE 2: Governments must move from control to support for market development through effective public private partnership**

Just as important as a supportive policy environment is the need for effective implementation of these policies. In a fledgling seed industry, there is little private industry and typically the role of the government is to initiate the key components of the seed chain. While in a more developed industry, less and less support is required, as the private sector is enabled to become the dominant market player. As a seed industry develops, the government should focus on moving out of the market and creating a conducive environment for further development, integration and privatization. However, governments are frequently

<sup>2</sup> The International Union for the Protection of New Varieties of Plants (UPOV)

<sup>3</sup> UPOV Report on the Impact of Plant Variety Protection, December 2005, [http://www.upov.int/en/publications/pdf/353\\_upov\\_report.pdf](http://www.upov.int/en/publications/pdf/353_upov_report.pdf)

hesitant or unprepared to do this, which severely crowds out private sector investment. Key interventions that governments need to make in order to move out of the market and enable the private sector to function and develop independently include:

### **ENSURE PUBLIC-PRIVATE SECTOR COLLABORATION WITHIN A NATIONAL SEED ADVISORY BODY**

A seed advisory body that is national in scope with equal public-private sector participation, has been an effective tool when governments are willing to abide its recommendations. Such a body should be an educational and driving force for change and structured at local levels to offer assistance in seed business development and seed technology to interested parties. This assistance together with the services of field inspections, seed processing, seed storage, and seed testing can certainly motivate and increase private sector participation, and contribute substantially to reaching all farmers with new varieties and high quality seed.

### **DEVELOP PUBLIC-PRIVATE SEED SERVICE CENTERS**

Insufficient capacity and knowledge of the technical aspects of seed technology, lack of locally-run support services and insufficient market awareness of farmer preferences all pose constraints to private sector development. Regionally located public-private seed service centers have the potential to assist seed companies in overcoming adoption constraints. Such seed service centers provide the private sector with support including field inspections, seed labs, seed processing, and business orientation support. These services help seed businesses to overcome the substantial capital outlay required for operations, while providing a private-sector led solution that avoids bureaucratic delays of a government-run program and contributing to the growth of an important local industry.

### **BUILD PRIVATE SECTOR CAPACITY FOR THIRD-PARTY CERTIFICATION**

After changing the legal and regulatory framework to allow for third-party certification, support needs to be given to build this capacity, which can be achieved through yearly training programs delivered by the official certification agency. Training should be crop-specific and updated each year with new information for field inspections and laboratory testing. This should also involve support in how to identify and report counterfeit seed. The training would be followed by practical examinations that, if passed, would certify the person's/organization's qualifications to conduct official seed certification activities. This credentialing can also be enhanced by building seed certification capacity into the seed service centers discussed directly above.

## **EXAMPLES OF SUCCESSFUL REFORM**

Thanks to efforts in the harmonization of seed policies and regulations, third-party seed certification may be done in several Latin American countries including Argentina, Bolivia, Brazil, Paraguay and Uruguay. Under a system similar to the United States, Peru also has a seed certification system which is based on a public-private arrangement. In Africa, also through harmonization efforts, three major trade blocs (SADC, ECOWAS, COMESA) have approved the concept of allowing the accreditation of third-parties for seed certification. South Africa and Zambia already have systems in place that allow the private sector to conduct their seed certification through the South African Seed Trade Association (SANSOR) and the Seed Certification and Control Institute (SCCI), respectively.

**Expanded and more efficient regional seed markets stimulate investment and lead to increased seed availability and accessibility by farmers.**

### **IMPROVE FOUNDATION SEED ACCESS**

Access to breeder and foundation seeds are mainly provided by Foundation Seed Units of the NAROs. However, in many places, this access to breeder and basic seed is not always readily available. Late or non-existent up-front payments and cancellations of seed orders have frequently doomed NAROs to failure. In addition, as the income they generate often goes into a central government fund, NAROs are left with little resources for research and development. Without a joint and concerted effort between the NAROs and the private seed businesses interested in obtaining good quality basic seed, there is little probability of success. This can be achieved through a licensing system, where NAROs receive an upfront payment from a seed company for the breeder and basic seed, and then a subsequent percentage of the revenue when the improved seed is sold. These royalties should go into to a separate account, accessible only to the NARO. This funding will assist crop improvement programs and ensure the quality and quantities of basic seed required by private seed businesses. In South America, licensing systems are already quite developed. EMBRAPA in Brazil and INTA in Argentina both license the provision of breeder and basic seed, as well as the commercialization of new varieties to private companies. These licenses provide them considerable resources for research and development, and technology transfer.

### **PROMOTE SMALLHOLDER SEED ACCESS PROGRAMS**

The development of smallholder markets is an effective tool to stimulate development of seed enterprises. This development is attempted in a variety of ways, including voucher programs, incentives to purchase certified seed, and other methods. Successful programs assure the private sector a minimum level of demand and help to create knowledge of new varieties and their benefits, with the expectation that smallholders will continue to purchase seed after programs are finalized.

## **PRINCIPLE 3: Overcome constraints to regional harmonization through increased coordination and support for implementation**

Expanded and more efficient regional seed markets stimulate investment and lead to increased seed availability and accessibility by farmers. Recent pressures have led to various initiatives to develop a more appropriate and harmonized seed policy environment across countries and regions. The effectiveness of these policy harmonization initiatives has been mixed. Harmonization in Central America led to a 23% increase in seed trade within the region after two years, according to the Latin American Seed Federation (FELAS). Within the Expanded MERCOSUR region, Paraguay and Bolivia reported first-time seed exports to Brazil, while Uruguay reported greater facilitation of rice seed exports to Brazil. On the other hand, the Andean Pact countries reached technical agreements, but the document was never signed by the authorities. In Africa, it is still too early to tell. SADC took three years to sign the regional harmonization agreement and is just undertaking implementation in a few countries because of funding difficulties. ECOWAS fared better in quickly obtaining signatures, but implementation is limited to a few countries. High expectations are placed in COMESA, which has reached technical agreements in a record seven months and already started an implementation program together with the African Seed Trade Association to cover all 19 countries.



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These examples serve to demonstrate the importance of implementation policies in determining the success of regional initiatives. Success does not just happen with the signing of an agreement. It takes appropriate planning at the regional level and accompanying funding at the domestic level to enact the various components of the regional agreements. There are a number of interventions that governments can make across the key regional components:

### **SUPPORT THE IMPLEMENTATION OF REGIONAL VARIETY RELEASE SYSTEMS**

Regional variety release systems allow for varieties to be released in countries of a trade bloc if the variety has been released in a minimum number (1 or 2) of countries. The regional release would be accompanied by technical information, such as agro-ecological zones. This allows for less variety testing in each and every country where the variety may be appropriate, reducing time and associated costs. However, the success of regional variety release systems has been constrained by implementation at the regional level. Harmonization should be facilitated centrally through the establishment of a small regional office (1-3 person staff) with oversight over coordinating the implementation process, including regional variety release, seed certification. SADC, ECOWAS, and COMESA are each in differing stages of planning to set up such an office. The office should be complemented by a regional advisory committee, which would offer high level guidance and oversight to the office

### **SUPPORT DOMESTIC CAPACITY FOR REGIONAL SEED CERTIFICATION SCHEMES**

Regional seed certification schemes provide domestic crops with the potential to be traded through streamlined field and laboratory standards for the major crops across the region. They also allow for accreditation of seed companies and third parties to conduct seed certification activities. However, these schemes are constrained by the differing domestic seed certification capacities of countries. Some countries have strong domestic certification programs, while other countries have inadequate inspectors and laboratories or to meet the required regional standards. Support is needed to build domestic capabilities for field inspection, laboratory services, and issuing procedures. One example of this support is the Comesa Regional Agro-Input Program (COMRAP), funded by the European Union, which is currently purchasing laboratory equipment for testing and certification for all COMESA member states.

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Deanna Gordon, COTR  
USAID/BFS  
+1.202.712.0623  
degordon@usaid.gov

Nate Kline, Chief of Party  
EAT/Fintrac, Inc.  
+1.202.621.7349  
nkline@fintrac.com

Joe Cortes, Leader Global Seed Program  
Seed Science Center, Iowa State University  
+1.515.294.5363  
jcortes@iastate.edu

[www.eatproject.org](http://www.eatproject.org)

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## IMPROVE THE TRADE FACILITATION CAPACITY FOR IMPORT/EXPORT PROCEDURES

Seed import/export procedures spell out the responsibilities, timelines and paperwork requirements across countries. These agreements have quarantine pest lists based on science, developed by the countries with peer-reviewed information, which has considerably reduced the amount of quarantine pathogens for seed trade among the trade bloc countries. However, despite these agreements seed trade is constrained by the differing trade facilitation capacity of countries. Some countries have customs, plant health and seed authorities at borders-crossing points, whereas others just have a single customs official, who lacks any knowledge of seed procedures. Adequate funding is required by countries to improve their trade facilitation procedures and capacity at the borders. In addition, border agents can be trained in the correct import/export procedures.

## CONCLUSION

Dynamism in the seed sector is unlikely to come from the government alone, and requires strong private sector participation, even in roles traditionally considered the role for government. While there will always be a role for government in the seed sector, experience in countries that have achieved high levels of seed access at relatively low cost suggests that government should move out of its role as a market participant, and instead focus on offering initial support to the private sector to enable it to function and develop independently. This transition can be achieved through a legal and regulatory framework that removes unnecessary barriers to private seed sector growth, and effective public-private partnership in supporting private sector market development. In addition, greater planning and resources are needed at the regional level to effectively integrate regional markets and increase seed availability and accessibility across countries.

## ABOUT THE EAT PROJECT

The Enabling Agricultural Trade (EAT) project, funded by the United States Agency for International Development (USAID), supports the U.S. government's global efforts to create conditions for agricultural growth. USAID established EAT based on substantial academic and field experience suggesting that a sound legal, regulatory, and institutional environment is a pre-requisite to economic growth in the agricultural sector. EAT offers a suite of targeted and customizable analytical tools and implementation support to identify, diagnose, and reform agribusiness enabling environment (AgBEE) constraints that hinder start up and growth across the agricultural sector.

