

**Voluntary Report** – Voluntary - Public Distribution

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**Report Name:** Planting Seeds

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**Report Highlights:**

Ghana's seed industry is in its infancy. Corn and rice form about 70 percent of the sales of certified seed in Ghana. Seed varieties of corn and rice are imported to meet growing demand. An import permit is required to import certified corn, rice and soybeans seeds as indicated in the Ghana seed law Part II (Seeds) of 'Plants and Fertilizer Act, 2010 (Act 803). Even so, the Government of Ghana (GOG) continues to implement a non-transparent import permit issuance regime that limits imported products.

## **Executive Summary**

The GOG prioritized the seed sector as a pillar in its flagship agriculture production intensification program, “Planting for Food and Jobs” which is designed to promote the growth of the seed industry as a critical component in the transformation of the agriculture sector. According to the seed industry, the sales volume of certified seeds in the formal sector is low providing less than 20 percent of the total seed demand. The remaining 80 percent of demand is supplied by informal sources. The GOG regulates seed production for corn, rice, cowpea, soybean, sorghum and peanut. Meanwhile, corn and rice seeds account for over 70 percent of the sales of certified seeds.

The public sector in Ghana, conducts most of the research and development (R&D) for seeds. These seed varieties (breeder seed) are sold to state-owned enterprises for further multiplication (foundation seed) and distribution to private companies to produce certified seeds that are disseminated and sold by private seed dealers. Other seed varieties are imported to meet growing demand, such as corn, rice and vegetable seeds. In order to create a more robust seed market, more players may need to expand their R&D capabilities.

Prior to 1990, Ghana’s public sector thoroughly dominated the seed industry. Ghana’s seed law ‘Plants and Fertilizer Act, 2010 (Act 803) Part Two (Seeds)’ that replaced the “Prevention and Control of Pests and Diseases of Plants Act, 1965 (Act 307)” regulates the private sector’s role in the country’s seed industry.

## **General Information**

Ghana’s seed sector combines both the formal and informal seed production and delivery systems according to GOG sources. The formal seed system is characterized by the production and purchase of commercial certified seeds while the informal sector is based on seed production and exchange among farmers at the local level. These may include seed exchanges with other farmers, purchases from local markets, and seed saving. The informal seed sector is very significant with about 80 percent of the major seeds used in the country emanating from that sector. Ghana privatized its formal seed sector in 1990, under a new seed program, which allows the private sector to participate in aspects of the sector such as certified seed production and supply. The public sector is to retain the varietal development, seed inspection and policy responsibilities. As such the private sector’s role in Ghana’s seed system although slow has been increasing, with private companies actively involved in certified seed production and sale.

## **Seed Production**

Although about six crops namely corn, rice, cowpea, soybean, sorghum and peanut are regulated for seed production in Ghana, corn and rice seeds form the bulk of certified seed production. Also, corn and rice account for over 70 percent of the sales of certified seeds. Post projects a 10 percent increase in the production of all of the above-mentioned seeds in 2019/20, due to the 50 percent subsidy for seed and fertilizer production implemented by the GOG in 2017. Table 1 below shows certified seed production for the past three years.

Table 1. Certified Seed Production, Ghana, 2016-2019 (MT)

Crop	2016	2017	2018	*2019
Corn (Maize)	1,206	1,510	8,430	9,270
Rice	1,232	881	5,200	5,720
Cowpea	23	31	220	242
Soybeans	237	248	2,189	2,408
Sorghum	-	32	58	64
Ground-nuts (Pea nut)	-	-	248	273

Source: Seed Inspectorate Division, MOFA, Seed industry: \* estimates

In 2018 certified corn seed production was 8,430 MT, an increase of 458.28 percent, up from 1,510 MT in 2017. Certified rice seed production in 2018 was 5,200 MT, up by 490.24 percent from 881 MT in 2017. In 2018, certified soybean seed production increased by over 782 percent from 248 MT in 2017 to 2,189 MT in 2018. These increases in corn and rice seed production in 2018 have been attributed to the GOG's Planting for Food and Jobs initiative, which provides 50 percent subsidized seed and fertilizer. Selection and preference for maize varieties may be influenced by a combination of factors, including traits such as early maturation, high yield, drought resistant, adaptability to soil conditions, and required fertilizer use. Also, there are several large irrigated rice production projects, described as public-private partnerships, producing seed for their own use not included in official statistics.

The seed sector was privatized in 1990, making certified seed production and distribution a private commercial activity. The decision is based on the premise that the private sector is more efficient in the delivery of seeds to users. Small and medium scale seed enterprises, which include small-scale farmers as well as commercial firms, have been encouraged to produce and sell seeds and planting materials. Direct public sector seed production and marketing has been terminated. These private seed growers and dealers are registered and trained annually, in production and marketing to produce and market seeds in Ghana. The National Seed Trade Association of Ghana (NASTAG), formed in November 2015, is the umbrella association for all seed trade stakeholders in Ghana. NASTAG represents the Seed Producers Association of Ghana, Seed Traders Association of Ghana, Ghana Agro-input Dealers Association.

### Structure of the seed industry

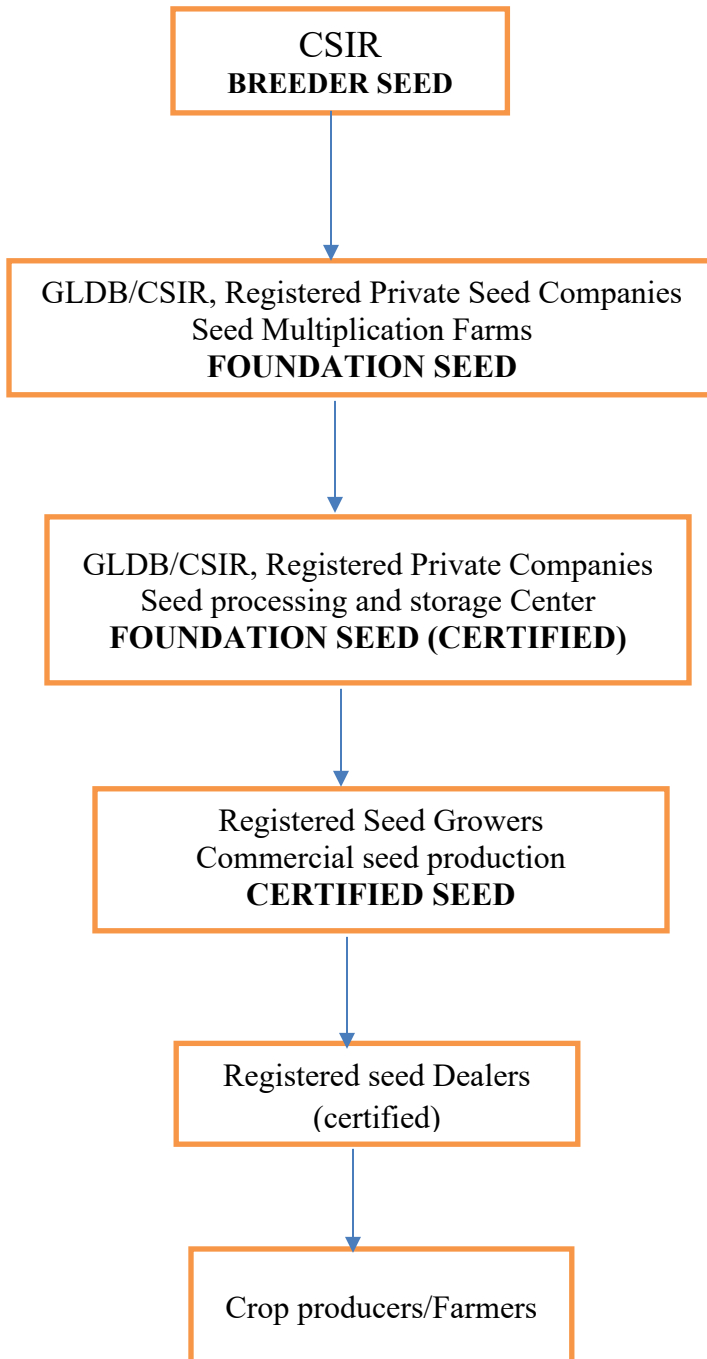
The Ghana Seed Inspection Division (GSID) of Ministry of Food and Agriculture (MOFA) is the GOG institution mandated to inspect and certify seeds produced at every stage of seed production from the production of Breeder's seed, foundation seed and certified seed.

The certified seed production process is as follows:

- *Breeder's seeds* are produced by the Council for Scientific and Industrial Research (CSIR), consisting of the Crops Research Institute (CRI) mostly for the southern half of Ghana, and the Savanna Agricultural Research Institute (SARI) for the northern zone. Some local universities have initiated the production of breeder's seed as well.

- *Foundation seeds* are produced from the breeder's seeds by the Ghana Grains and Legumes Development Board (GGLDB), and SARI particularly for the Northern sector. The Ghana Seed law, 'Plants and Fertilizer Act, 2010 (Act 803) Part Two (Seeds)' allows other qualified and certified private companies to produce and market foundation seed. One private research company, the Legacy Crop Improvement Centre (LCIC), produces foundation seeds for maize, cowpea and rice.
- *Certified seeds* are produced from foundation seeds by approximately 200 private seed producers either as individual growers or members of the Seed Cooperatives/Associations and NASTAG. The seed growers obtain foundation seeds from GGLDB, grow certified seed on their farms.
- Distribution of seeds to farmers occurs through education, training and extension which is carried out by MOFA, CRI, SARI, seed companies, and Seed Grower Associations e.g. NASTAG.
- Distribution and sale of seed to farmers is the responsibility of seed companies, and Agro-dealers.

Fig 1. Seed Supply Flow Chart



## Seed Demand

According to GOG sources, demand for certified corn and rice seeds outstrips supply although there are many companies producing and/or marketing corn and rice seeds, the volumes are still very low. The formal sector provides far fewer seeds than is desired compared with the informal sector. For example, the three-year average (2016 to 2018) for certified seed required for corn and rice was 23,152 MT and 14,000 MT respectively. Yet in all instances, only a fraction of the required demand was met by certified domestic production. Ghana does not have many seed conditioning and processing facilities, which limits the GOG's ability to certify seeds.

**Corn:** is most likely to lead commercial seed system development in Ghana. Corn is a staple and plays a significant role in Ghana's food security. As such, corn is a political priority and the GOG exerts considerable pressure to ensure adequate corn production. Maize hybrid seed use is becoming increasingly important for Ghana to reach its goal of increased corn production.

**Rice:** The demand for high quality rice is growing in Ghana, and this requires high quality rice seeds. There has been a significant shift towards several aromatic rice varieties among growers in Ghana. The market demands a cleaner, purer product, and where seed production capacity is already in place, there is evidence of growing use of commercial rice seed.

**Soybean:** It is more difficult to maintain the viability of stored soybean seeds in the tropics than for many other crops, hence there is demand for good quality commercial soybean seed. The processing sector is currently weak and requires significant upgrading before soybean production will increase.

**Cowpea:** Ghana's annual commercial cowpea seed production is low covering about one percent of the crop area.

**Groundnut:** This seed is exceptionally unattractive as a commercial crop because of its high planting rates and difficult seed processing.

**Sorghum:** Low planting rates of sorghum imply very small potential demand. Sorghum is however, increasingly in demand as an input for commercial breweries and there are various explorations of appropriate hybrids for this market.

Locally produced hybrids and open pollinated seed varieties are also sold, such as okra, long beans, bitter gourd, snake gourd, and cucumbers.

## Trade

There are no reliable statistics on actual certified seed sale, but the industry estimated that only about 60 percent of certified seeds produced are sold, with the remainder being sold as grain in the food market. Most farmers will re-use their old stored seeds (except for hybrids) because they find the certified seeds to be more expensive. According to GOG sources, there are about 3,153 Agro-input dealers in Ghana who distribute and retail seeds as well as other agricultural inputs such as fertilizers and agro-chemicals. Efforts are being made to improve the capacity of these agro-dealers in the handling of seeds in their shops and warehouses (GOG sources) and to address the issues of counterfeit seeds.

Seeds are generally sold in 45kg bags because the certification tag provided by GOG is usually one tag per 45 kg bag. However, seeds mostly sold in the retail Agro-shops are in small packages without certification tags which is an indication that the seeds have been repackaged. At least 66 percent of all seed varieties are sold in packages of 2 kg or less. Most soybean seeds are sold in package sizes of at least 25 kg. According to retailers most smallholder farmers are more likely to experiment with new varieties only if they can purchase them in small volumes which costs less.

Table 2. Seed Prices Per Kg in 2019

Crop	Breeder seed	Foundation seed	Certified seed
Corn	GHC 32.00	GHC 16.00	GHC8.00
Rice	GHC 60.00	GHC 30.00	GHC15.00
Soybean	GHC 64.00	GHC 32.00	GHC16.00
Cowpea	GHC 32.00	GHC 16.00	GHC8.00

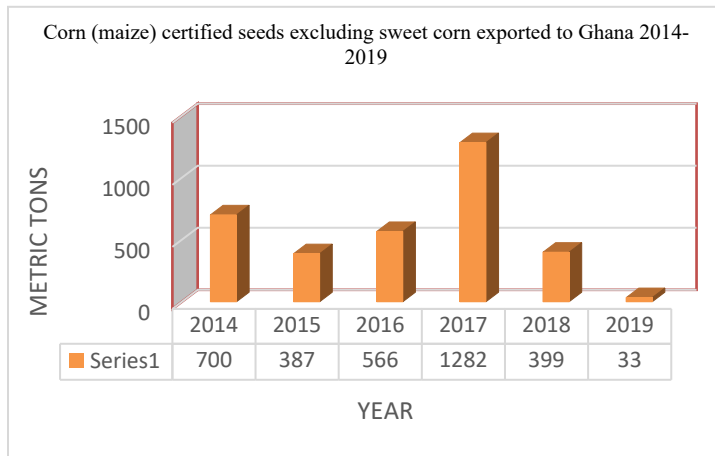
Source: MOFA, seed industry.

The certified breeder seed price is four times the cost of certified seed and two times the cost of foundation seed as shown in table 2 above. Corn and cowpea seed prices are cheaper than the seed price of soybean and rice seeds due to production and handling constraints.

Seed imports are duty free but require an import permit. Ghana's current Seed Law Part II of Plants and Fertilizers Act of 2010, Act 803, Section 39 (3)} contains a provision that combines seed commercialization, seed importation and the approval of import permits. (see Government Oversight and Management section). However, the importation process takes 90 days, which includes the import permitting process to the time the seed is cleared at the border. The long processing time is primarily due to the unclear legal and regulatory requirements for importation, the quantities allowed for import, and the time for processing import permits.

Ghana has imported certified corn, rice and soybean seeds over the past five years to meet the growing demand. According to industry contacts, there is high demand for vegetable seed imports. Agri-business firms in Ghana import exotic vegetable seeds (carrots, lettuce, cabbage, spring onions, etc.) mostly from the European Union, U.S.A. South Africa and Asia, which are sold through wholesalers and agro-input dealers.

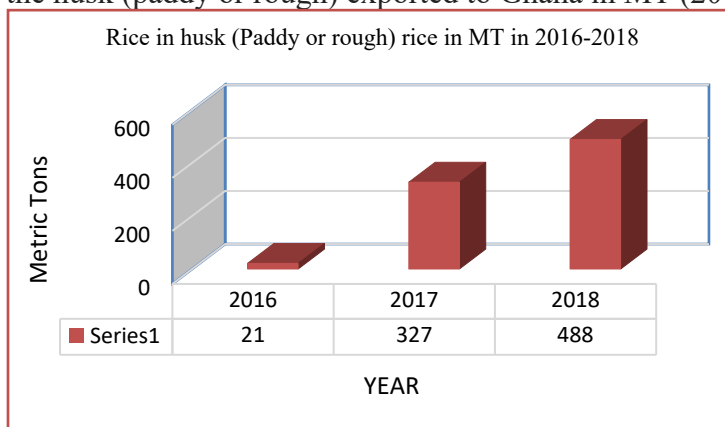
Fig 2. Certified corn (maize) seeds excluding sweet corn exported to Ghana 2014 - 2019



Data Source: Compiled by Trade Data Monitor LLC

There are fluctuations in imports of certified corn seed with the highest imports of 1,282 MT occurring in 2017, and the lowest in 2019 (33 MT). This is due to the continued promotion of certified seeds by governments in Ghana since 2014, which increased demand for certified seeds of corn. In 2017, the GOG, flagship agriculture program PFJ which aims at promoting the growth of the seed industry introduced a 50 percent subsidy on seeds created increased demand for certified corn seeds with low supply of certified corn seeds led to the importation of certified corn seeds. However, corn seed imports were very small at 33 MT in 2019, which the GOG attributes to an increase in domestic certified seed production. The certified corn seeds were imported from South Africa, U.S.A. the European Union, Brazil and from Cote d’Ivoire. According to GOG sources, only a few agribusiness firms in Ghana were granted permits to import certified seeds.

Fig. 3. Rice in the husk (paddy or rough) exported to Ghana in MT (2016-2018)



Data Source: Compiled by Trade Data Monitor LLC

Certified rice seed imports have increased steadily since 2016. In 2018, Ghana imported 488 MT of rice up from 327 MT in 2017. According to the GOG there is increased demand for certified rice seeds



which the local production is unable to supply hence the increase in imports. In addition, the GOG PFJ program's 50 percent subsidy on seeds has resulted in increased demand. In the past rice farmers sourced seeds in the informal sector. The certified rice seeds were imported from Ivory Coast, the USA, South Africa, the European Union, India and Canada. Only a few agribusiness firms in Ghana were issued import permits for certified rice seeds (GOG sources).

Ghana's private sector has a 70 percent market share (industry sources) in the vegetable seed market. Ghana's private sector sells imported seeds such as cauliflower, cabbage, tomatoes, carrots, capsicum and melons to meet the growing demand.

## **Government Oversight and Management**

**Ministry of Food and Agriculture (MOFA):** The MOFA is responsible for developing and implementing policies, regulations, and programs for the seed sector in Ghana. MOFA is also the regulatory organization for certified seed production in Ghana.

1. **Plant Protection and Regulatory Services (PPRSD):** An Act of Parliament established the PPRS in 1965 (Act, 307): 'Prevention and Control of Pests and Diseases of Plants' now replaced by "*Plants and Fertilizer Act, 2010 (Act 803)*". The PPRS is the national institution with the mandate to develop plant protection policies, regulate, implement and coordinate the plant protection services. The PPRS is responsible for enforcing phytosanitary requirements for seed imports.
2. **Ghana Seed Inspection and Certification Division (GSICD):** The GSICD is one of four divisions of the PPRS that regulates the development and production of quality seeds, provides certification, seed testing, field inspection, for breeder, foundation and certified seeds for both public sector and private companies. [*Part II (seeds) of Plants and Fertilizer Act, 2010 (Act 803)*].
3. **National Seed Council**  
The seed law '*Part II of Plants and Fertilizer 2010 Act (Act 803)*' establishes the newly designated National Seed Council (NSC) under MOFA. The responsibility of the NSC includes formulating seed policies, developing variety registration procedures, and designating the conduct and authority for seed certification. The NSC has nine members; four are ex-officio positions occupied by ministers or directors within MOFA; three are representatives from the seed growers' association, farmers association and research institutes, respectively; and two will be nominated by the President of the Republic. It remains to be seen if this membership has the combination of time and experience to effectively direct the implementation of the new law.
4. **National Variety Release and Registration Committee (NVRRC) of the NSC:** The NVRRC is responsible for approving the official release of *new crop varieties* in Ghana based on laid down procedures. All seeds offered for sale as commercial seed must be officially, approved and registered. The breeder submits sufficient seeds of the crop variety developed and its qualities/attributes to the NVRRC which will provide this to an independent body for testing. Little detail is given on the nature of the tests. However, upon receiving satisfactory test results,

the NVRRC officially approves and the new seed variety is registered in the national gazette. Until recently, all seed varieties have come through the CSIR, but the seed new law (*Part II of Plant and Fertilizer Act of 2010, Act 803.*) allows the approval of privately developed varieties from both domestic and foreign sources. In addition, it provides recommendations on seed regulations, standards, and policies. The members that constitute the NVRRC are drawn from Council for Scientific and Industrial Research (CSIR), MOFA, representatives of seed growers associations and seed companies.

- **Ghana Grains and Legumes Development Board (GGLDB):** The GGLDB was set up by an Act of Parliament No. 324 of 17<sup>th</sup> April, 1970 as an organization under the MOFA. The GGLDB obtains breeder seed for multiplication into foundation seed from the CSIR (SARI, CRI). They also have processing, storage and maintenance centers available. GGLDB in turn produces foundation seed that is sold to commercial seed producers. Before 2010 the GGLDB had the sole responsibility to multiply breeder seed to produce the next generation of foundation seed. GGLDB provides maize foundation seed to about one-third (32%) of seed companies in Ghana. SARI is the source of rice foundation seed for 40% of the seed companies. (GOG sources). In many cases, the raw seed is transported to GGLDB facilities where it is dried, cleaned, graded and stored. There were concerns about the efficiency and performance of this arrangement. As such the new seed law (*Part II of Plant and Fertilizer Act of 2010, Act 803*) allows other qualified private certified companies to produce and market foundation seed. One private research company, the Legacy Crop Improvement Centre, produces foundation seed for maize, cowpea and rice. Research institutes such as SARI have also often produced foundation seed, particularly for donor or government projects.
- **Council for Scientific and Industrial Research Institutes (CSIR)**  
Most seed varieties were developed by public institutes within the CSIR and Ghanaian universities, usually in collaboration with international research institutions and funding agencies. Private sector companies currently tend to be more involved in seed multiplication than varietal development. The CRI covering (southern half of Ghana) and SARI covering (northern zone) of the CSIR are primarily responsible for the development of breeder seed varieties in Ghana. They obtain germplasm from international agricultural research centers such as those within the Consultative Group for International Agricultural Research. Ghana has approximately five or six maize seed breeders, three rice breeders, and two soya seed breeders. The production and maintenance of breeder seed requires significant resources and without specific donor funds the availability of sufficient breeder seed of many varieties has often been a problem, limiting the possibilities for further seed multiplication.

## **Laws and regulations**

Ghana's seed sector has undergone some significant changes in the past few years, leading to the establishment of a new law 'The Plants and Fertilizer Act 2010 (Act 803) that replaces the Plant Quarantine Act of 1965 and the National Redemption Council Decree 100 of 1972 (old law). The Plant and Fertilizer Act, 2010, (Act 803) provides for Plant Protection, Seeds and Fertilizer Regulations and for related matters. 'Part II (Seeds)' of the Plants and Fertilizer Act, 2010 (Act 803) is the seed law of Ghana. The Ministry of Food and Agriculture has drafted a Ghana Seed Policy, National Seed Plan, seed

Certification and Standards regulations to implement the Plant and Fertilizer Act, 2010, (Act 803). Please refer to the websites for further information: [www.mofa.gov.gh](http://www.mofa.gov.gh); [www.ghanatradinghub.gov.gh](http://www.ghanatradinghub.gov.gh); [www.e-agriculture.gov.gh](http://www.e-agriculture.gov.gh)

The Act is divided into three main parts;

- Part 1 provides for the efficient conduct of plant protection, to prevent the introduction and spread of plant pests, regulate the import and facilitate the export of plants and plant materials and provide for related matters.
- Part 2 is to regulate and monitor the exportation, importation and commercial transaction in seeds and related matters. The rules also provide specific phytosanitary requirements for seed imports.
- Part 3 is to provide for the control and regulation of fertilizers.

The old law focused on only public sector seed activities, the new seed law expanded regulatory oversight over both the private and public sector, and all seed varieties. Perhaps the most significant aspect of the new law is that it allows the production of any class of seed by any approved entity and permits both domestic private sector activity as well as access to foreign (public and private) varieties. The new seed law includes designation of responsibilities for seed import and export, establishes a register of varieties that can be marketed, outlines procedures for seed quality control and testing, and establishes a National Seed Council and associated committees. In addition, almost all details on implementation and standards are left to the regulations and to those who will interpret and enforce them. Locate the Seed law at: [www.mofa.gov.gh](http://www.mofa.gov.gh); [www.ghanatradinghub.gov.gh](http://www.ghanatradinghub.gov.gh); [www.e-agriculture.gov.gh](http://www.e-agriculture.gov.gh)

### **Seed Variety Registration Procedures**

According to the Plant and Fertilizer Act 2010 (Act803) no 41(1), the Ministry of Food and Agriculture (MOFA) shall prepare an official list of varieties of seeds, which can be registered and marketed in the country.

(2) Without limiting the effect of subsection (1) a new variety shall

- a) Only be introduced into this country after approval has been granted from the Ministry;
- b) Be entered in the national variety list when it conforms to distinctness, uniformity, stability and value for cultivation subject to Regulations on variety releases in this country and
- c) Be registered as a result of regional agreements on variety release and registration.

(3) An accredited public organization shall conduct tests to establish distinctness, uniformity, stability or value for cultivation or use in accordance with guidelines established by the National technical and Variety release Committee.

(4) The requirements and procedures for variety testing, release and registration of seeds shall be prescribed by Regulations.

### **Importation and Exportation of Seeds**

**According to the Plant and Fertilizer Act 2010 (Act803) No 39;**

1. A person who intends to import seeds of any crop
  - a) for the purpose of seed production for experimental or research, or
  - b) for direct and commercial distribution to farmers for production,

Shall submit samples of the seed to the director (Crop Services Directorate) for testing by an accredited research institution.

2. The director shall submit the report of the test to the Minister who shall approve or prohibit the importation of the seeds on the basis of the recommendations contained in the report.
3. On approval of the importation of the seeds, the Minister shall authorize the importer to produce the seeds for commercial production and distribution.

### **Intellectual Property Rights (IPR)**

Ghana does not have intellectual property rights laws or regulations on seed. A draft law entitled “Plant Breeders’ Bill of Ghana, October 1, 2013” has still not received approval in Parliament. The purpose of this Bill is to establish a legal framework to protect the rights of breeders of new varieties of plants or plant groupings and to promote the breeding of new varieties of plants aimed at improving the quantity, quality and cost of food.

### **Genetically Engineered (GE) Seeds**

Although all afore-mentioned seed laws, policies, and regulations do not mention GE seeds, the Ghana Biosafety ‘*L.I. 2383 Biosafety (Management of Biotechnology) Regulations, 2019*’ note that all GE products need to be approved before importation. The GOG has not officially approved nor released any GE seed yet. For further information on agricultural biotechnology regulations in Ghana please see GAIN reporting system. <https://www.fas.usda.gov/data/ghana-agricultural-biotechnology-annual-2>.

**Attachments:**

No Attachments.