



FEASIBILITY STUDY FOR THE DEVELOPMENT OF PUBLIC-PRIVATE SEED DELIVERY SYSTEMS IN TOGO



COUNTRY REPORT ON SEED SYSTEM- TOGO

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Abstract

Togo's agriculture, dominated by the production of food crops, is characterized by low productivity of the varieties used and especially, by a low adoption rate of improved seeds. The government's efforts over the period 2010 to 2015 to revive agricultural production in order to ensure food security for the population resulted in a 6% increase in annual agricultural growth, in 2015. The surpluses of food crop production observed from 2010, with the exception of rice, was mainly due to the increase in areas under cultivation and not the increase in productivity.

There is exist a will of the public authorities to dynamize seed sector in order to boost agricultural production, taking advantage of the existing favorable agro-ecological conditions in the country. The effort put forward by the government and other technical and financial support agencies during the period 2010-2015, permitted the seed sector to:

- ✓ have a legal and regulatory framework based essentially on ECOWAS / UEMOA Seed Regulations;
- ✓ organize all seed multipliers into a national network;
- ✓ have official quality control and seed certification service;

However, the seed sector in Togo still suffer from:

- lack of planning of seed production: all seed categories are produced without prior knowledge of their real demand;
- lack of entrepreneurship of seed multipliers and emerging seed companies in their profession;
- lack of traceability of the quality of the proposed seed in the market due to a poor seed conditioning habit;
- a weakness of the quality control and certification system due to the lack of qualified human resources, modern facilities for analysis and financial support;
- low performance of current varieties which are for the majority of composites;
- discredit on the quality of basic seeds by seed multipliers, and on certified seeds by farmers,
- difficulties in accessing credit to finance activities in the sector;
- absence of a business relationship among the key players in the sector (producers, distributors, input suppliers, service providers, etc.).

To improve access to improved seed by smallholders, the government through the implementation of the National Program for Agricultural Investment, Food and Nutritional Security (PNIASAN: 2017-2026) plan to cluster all farmers into various value chains, group main value chains in different agropoles with all the necessary facilities. In the seed sector, all the actors will be linked around seed companies that play the role of the aggregator. The current actions of the government to achieve its goal can be grouped into three main axes:

- ✓ offer to farmers a wide range of high-yielding varieties and quality seed;
- ✓ support the emergence of three (3) seed companies with seed production, processing, packaging, storage, and distribution capacities;
- ✓ strengthen the quality control and seed certification system.

Three emerging seed companies have been identified and supported recently with a donation of seed processing, treatment and packaging mobile unit of 2.5 tonnes /hour capacity each. Also, a laboratory for seed quality analysis is being constructed and will be equipped with the latest facilities for quality control. Currently, only the first ax, which is offering to farmers a wide range of high-yielding varieties, lack serious actions, although there is still a need to strengthen the already existing actions.

Summary

Abstract	3
Summary	4
List of Tables	6
List of Figures	6
1. Introduction and Background	7
1.1 Agricultural production systems	7
1.2 Current and recent agricultural development initiatives	8
1.3 Scope for the development of agriculture	9
2. Crop Production Systems	10
2.1 Current crop production levels of major staple food crops, average crop yields, and trends, by crop	10
2.2 Description of the country’s main agro-ecologies and their cropping systems	13
2.3 Current status of agricultural extension activities	15
2.4 Level of adoption of improved crop varieties, by crop	18
2.5 Level of the utilization of fertilizer and manures to increase crop yields, by crop	20
2.6 General description of the current system for marketing surplus production of staple crops	20
2.7 Trends in the development of markets for staple food crops	22
3. National Agricultural Research System	23
3.1 Description of the public institutes and universities actively engaged in crop breeding	23
3.2 Nature of recent or ongoing crop improvement activities, by crop	23
3.3 Level of the capacity of public crop breeding institutions	23
3.3.1 Scientific personnel	23
3.3.2 Infrastructure	24
3.4 Recent or ongoing collaborations with public institutions, farmer-based organizations, and the private sector in seed supply	24
3.5 Current status of crop variety licensing arrangements for the production of seed by third party entities	25
4. Status of Seed Supply	25
4.1 History of crop breeding and seed supply in the country	25
4.2 Recent and ongoing activities aimed at the release of improved crop varieties, by crop	26
4.3 Recent and ongoing activities aimed at increasing the supply of improved seed	28

4.4 Current options for smallholder to access improved seed	29
4.5 Number of private seed companies operating in the country and their estimated annual supply	30
4.6 Other non-governmental and farmer-based organizations active in seed production and supply.....	30
4.7 Facilities and equipment available for seed processing and packaging in the country	31
4.8 Tonnages of seed certified and marketed in the past five years, by crop	31
4.9 Number of agro-dealers currently in operation, by region.....	32
4.10 Level of importation of certified seed from neighboring countries, by crop.....	33
4.11 Summary of prospects for improving seed supply	33
5. National Seed Policy Framework	33
5.1 Documents which control the production and supply of seed	34
5.2 Process for the official release of improved crop varieties.....	35
5.3 Procedures for seed certification	35
5.4 Current status of the regulatory agencies in charge of seed certification	35
5.4.1 Active personnel.....	35
5.4.2 Infrastructure.....	35
5.5 Current status of basic (foundation) seed supply.....	35
5.6 Procedures for production and supply of basic (foundation) seed.....	36
5.6.1 Access by private seed companies to basic seed	36
5.6.2 Policies for the supply of basic seed by private sector	36
6. Summary and Conclusions	36
6.1 Current status of access to improved seed among smallholder farmers	36
6.2 Current status of government support for improving seed systems	36
6.3 Trends and opportunities for seed systems improvements.....	37
6.4 Recommendations.....	38
6.5 Likely impact the improvement of access to improved seed by smallholder farmers	38
CONCLUSION	39
References	40

List of Tables

Table 1	Staple food crop production level in 2017/2018 growing season.....	4
Table 2	Crops and cropping systems in different agro-climatic zones in Togo.....	7
Table 3	Crop Calendar of staple food crops of Togo.....	8
Table 4	The adoption level of improved varieties for Maize, Rice, and Sorghum in Togo in 2012.....	12
Table 5	Domestic supply and export-import of major staple food crops in Togo.....	14
Table 6	Surplus / deficiency level of food crops in Togo from 2010 to 2016 in tons.....	15
Table 7	Summary of the past, current and ongoing breeding activities at ITRA.....	17
Table 8	Tonnage of certified seeds from 2009 to 2018.....	22
Table 9	Number of registered agro-dealers supplying inputs throughout the country.....	22
Table 10	Quantity of certified seeds imported in 2019.....	23

List of Figures

Figure 1	Food crops importance (production and harvested area) per group in the country (DSID, 2018).....	5
Figure 2	The trend of production, area under cultivation and yield of major food crops (A: Cereals, B: Legumes, C: Roots and tubers) in the past 10 years.....	6
Figure 3	A cluster of a seed system.....	20
Figure 4	The trend of the coverage rate in certified seeds.....	29

1. Introduction and Background

Agriculture is the driving sector of Togo's economy, contributing up to 40% of the country's GDP, which engages 60% of the population and 87 % of the total active population (DSID, 2014). The majority of the agricultural population is female (51%). Despite favorable agro-ecological conditions, Togo's agriculture is characterized by a low adoption rate of improved seeds (15%), low rate of fertilizers applications (only 33.5% of food crops cultivated area were fertilized), low level of mechanization (174 tractors, giving 7 tractors for 100 000 farmers), and high proportion of smallholders.

Although agriculture contributes significantly to the country's GDP and affects majority of the population, Togo's level of investment in the sector is low compared to the requirements of the sector.

Public expenditure, including that of donors, have remained low, ranging from CFAF 25 billion in 2010 (1.7% of GDP) to CFAF 50 billion (1.4% of GDP in 2013-14), CFAF 48.5 billion (1.9% of GDP) in 2016 and CFAF 36.4 billion (1.3%) in 2017. The proportion of agricultural land is approximately 59% of the land area and arable land constitutes 38% of the land area. The country has large unused farmland with only 25% of arable land under cultivation.

Private investment is insufficient compared to the needs and potential of the agricultural sector due, in particular, to a *poor incentive environment, inadequate infrastructure and weak structuring of the agriculture sector* (ADB, 2019). Togo is a member of the *United Nations, African Union, Organization of Islamic Cooperation, South Atlantic Peace and Cooperation Zone, La Francophonie and Economic Community of West African States*.

Low levels of investment and supervision largely account for low agricultural productivity and insufficient access to domestic (*significant share of import substitution in domestic demand*) and export markets. To address this, the Government has included agriculture and agricultural processing as the second of the three priorities in the PND. It has developed the **2017-2030 Strategic Plan for the Development of Agropoles**, created the Agropoles Promotion and Development Agency (APRODAT), which will promote the implementation of a ten-agropoles program, and launched the **Agri-Incentive and Financing Facility (MIFA)**. At this key start-up phase, the AfDB is supporting the Government and coordinating, among development partners, support for the mobilization of private and private financing capable of transforming the agri-food sector. It focuses on six promising chains initially identified after preliminary studies and broad consultations.

Once euphemistically called the “Switzerland of West Africa”, Togo today strives to transition from a low income, fragile state to an emerging economy. Yet, ***Togo still lacks the foundations for credible market-based competition and good governance, although there have been undeniable improvements.***

Togo remains dependent on development aid, though net official development assistance received has shown a substantial decrease in the past decades from USD 258.2 mn in 1990 to USD 165.0 mn in 2017 (Kohnert, 2019) with EU, France, Germany being the biggest provider of development assistance, besides China. Togo's World Bank Doing Business indicator improved little over the past ten years – is ranked at 156 of 190 economies worldwide in 2018.

1.1 Agricultural production systems

Agriculture in the country is dominated by *subsistence farming* and *family farms* that follow traditional practices and are subject to the vagaries of climate, price fluctuations, and poor agricultural support services. *Extremely limited rural infrastructure* is poorly maintained and constitutes a major constraint to growth (World Bank, 2017). On-farm productivity is still very low (due to little use of inputs, and traditional production methods and farm equipment), and the irrigation potential is largely untapped.

Historically, agricultural production in Togo is mainly family-based, and this has been a serious production constraint. Production effort has always been through traditional knowledge. In the context of the unprecedented population growth and in the face of increasingly scarce resources, new production systems have emerged with the support of national and international institutions and NGOs. Science, technologies, and innovations contribute greatly to fostering productivity, competitiveness and economic development.

The key constraints are

- i. Weak extension services and limited agricultural research capacity, limiting generation, dissemination, and adoption of new technologies;
- ii. limited access to rural credit, which also prevents farmers from acquiring improved seeds and fertilizers;
- iii. inadequate rural infrastructure, and access to water for agricultural production purposes,
- iv. a weak institutional network that fails to promote change in agricultural production methods; and
- v. poor agricultural infrastructure maintenance services.

Role of agriculture in the Economy - Agriculture employs over 60% of the active population and contributes about 40% of the gross domestic product (GDP) (Bonfoh *et al.* 2016). The country relies on imports to make up for its food deficit.

Overall Challenge

- *Yields have been consistently low for food crops and the performance of the main export crops (cotton, coffee, and cocoa) has been deteriorating.*
- *Lack of rural infrastructure and poor maintenance* of existing ones

1.2 Current and recent agricultural development initiatives

The country has multiple donor-funded projects for improvement in crop productivity, value chain, extension, and increased agri-input use. Some of the initiatives and government focus are listed hereunder

- *Promotion of Science and Technology for Agricultural Development (PSTAD) project* led by the Forum for Agricultural Research in Africa (FARA) used multi-stakeholder innovation platforms in its the Dissemination of New Agricultural Technologies in Africa (DONATA) initiative - *rapid dissemination and adoption of innovations along the value chains of cassava and maize* in Togo (2011-2014).
- *West and Central African Council for Agricultural Research and Development (CORAF/WECARD)* established six innovation platforms in Togo, Niger, and Mali *to test improved white pepper varieties* (2012-2015).
- GIFS CORAF Platforms - Promoting *Crop Integrated Management technologies to increase plantain productivity* in Western and Central Africa (Togo -2011-2013) - a collaboration between African Centre for Research on Banana and Plantain (CARBAP) and the Togolese Institute for Agricultural Research (ITRA)
- *EU Food Facility helped farmers receiving seeds and fertilizers for staple crops, as well as inputs for market gardening (2007-08)*. FAO also provided structural support to the seed sector and market information system in Togo, helping Togo's primary seed farm with production and certification of quality seeds, and developing an information system for monitoring agricultural product prices.

- **WB and Global Agriculture and Food Security Program (GAFSP) funded Agriculture Sector Support Project (PASA)** - helps nearly 14,000 smallholder farmers and 3,300 livestock farmers improve their livelihoods and provide better futures for their families.
- The government implemented a National Agricultural Investment and Food Security Program (PNIASA) (2010-15) to support producers in
 - *accessing agricultural inputs;*
 - *facilitating the financing of producers through credit lines and supporting research, and*
 - *extension services in the development and transfer of technology.*
- Ministry of Agriculture launched a process to develop the National Plan for Agricultural Investment, Food and Nutrition Security (PNIASAN) for the period 2017-2026, which includes measures to ***incentivize the establishment of seed producers and companies in the country.***
- **Promotion of Technical Vocational Education and Training for the Agricultural Sector in Africa (CAADP-ATVET)**, with the support of the German government through GIZ. The current phase of the project is expected to go on for six years and is in the pilot stage in six countries including Togo
- WB funded West Africa Agricultural Productivity Program (WAAPP-EC) is now in the second phase with \$ 10 mn funds for Togo. The Program had already increased yields and income of beneficiaries by at least 30 percent and reduce the hunger period by half and improve nutrition standards, resulting from the ***adoption of new crop varieties, improved crop management practices, and improved small-scale food processing technologies.*** The second phase is aimed at
 - Transformation of the National Centers of Specialization into Regional Centers of Excellence;
 - ***Consolidation and expansion of the regional exchange of agricultural technologies and innovations through the regional technology market*** for scaled-up dissemination and adoption;
 - ***Modernization of the agricultural extension services and technology transfer systems,*** including expanded use of innovative approaches being piloted under the project in some countries— Innovation Platforms (IPs) and Information and Communication Technologies (ICT)-based instruments such as the E-extension and E-voucher instruments; and
 - ***Strengthening both the national seed production and distribution systems and the regional seed market*** to ensure the availability and use of certified quality seeds.
- The government has recently produced a new agricultural sector policy document (Document de Politique Agricole 2015-2030), stressing the need for the sector to be equitable, integrate gender-sensitive activities and support vulnerable poor rural households.
- The Government of Togo invested during the period 2011-2019, a total of \$US 22 Million to increase the productivity of maize, rice, cassava, poultry, and small ruminants value chains. The main activities supported were:
 - Research and development infrastructural construction and rehabilitation and equipment procurement;
 - Training of young scientists and extension agents;
 - Technologies and innovation (T&I) generation;
 - T&I dissemination for broad adoption.

1.3 Scope for the development of agriculture

- Low productivity of the smallholder system, through generation, dissemination, and use of new and improved production technologies- good support from the research system to generate demanded technologies;
- Development of effective agricultural input delivery system to meet the demand of the smallholders;

- Facilitation of an efficient policy system that engages all stakeholders in developing supportive policies for trade within and outside the country;
- Encouraging sustainable market orientation and the establishment of economic structures, such as producer cooperatives, supply contracts, and business services

2. Crop Production Systems

2.1 Current crop production levels of major staple food crops, average crop yields, and trends, by crop

The major food crops that are cultivated in Togo are cereals (Maize, sorghum, millet, rice), legumes (cowpea, groundnut, and soya beans) and roots and tuber crops (yams, cassava, and potatoes). The cereals contribute about 68.5% to agricultural GDP and serve as either food for home consumption or sold in the domestic market to generate income for farm households. Although soybean is hugely produced in the country, it is mostly used as raw material for processing and does not count as a staple food crop.

Table 1 presents the production level of major staple food crops during 2017/2018 growing season.

Table 1. Staple food crop production level in 2017/2018 growing season

Group	Major crops	Production (Tonnes)	Area harvested (ha)	Yield (Tonne/ha)
Cereals	Maize	715274.9	886629.9	1.24
	Sorghum	318834.3	277240	0.87
	Millet	38571.84	22618.03	0.59
	Rice, paddy	86805.01	145488.7	1.68
Roots and Tubers	Yam	93853.79	858782.7	9.15
	Cassava	273678.8	1089472	3.98
Legumes	Cowpea	378775.1	207551.7	0.55
	Groundnut	59289.65	43842.2	0.74

Source: DSID, 2018

The importance of each food crop with regard to the harvested area and the production level in each group is presented in Figure 1.

Maize is the principal crop among the cereals as well as cowpea among legumes. In 2018, maize represented 66% of the total production of cereals with a harvested area representing 61%, making it the most cultivated staple food crop among the cereals.

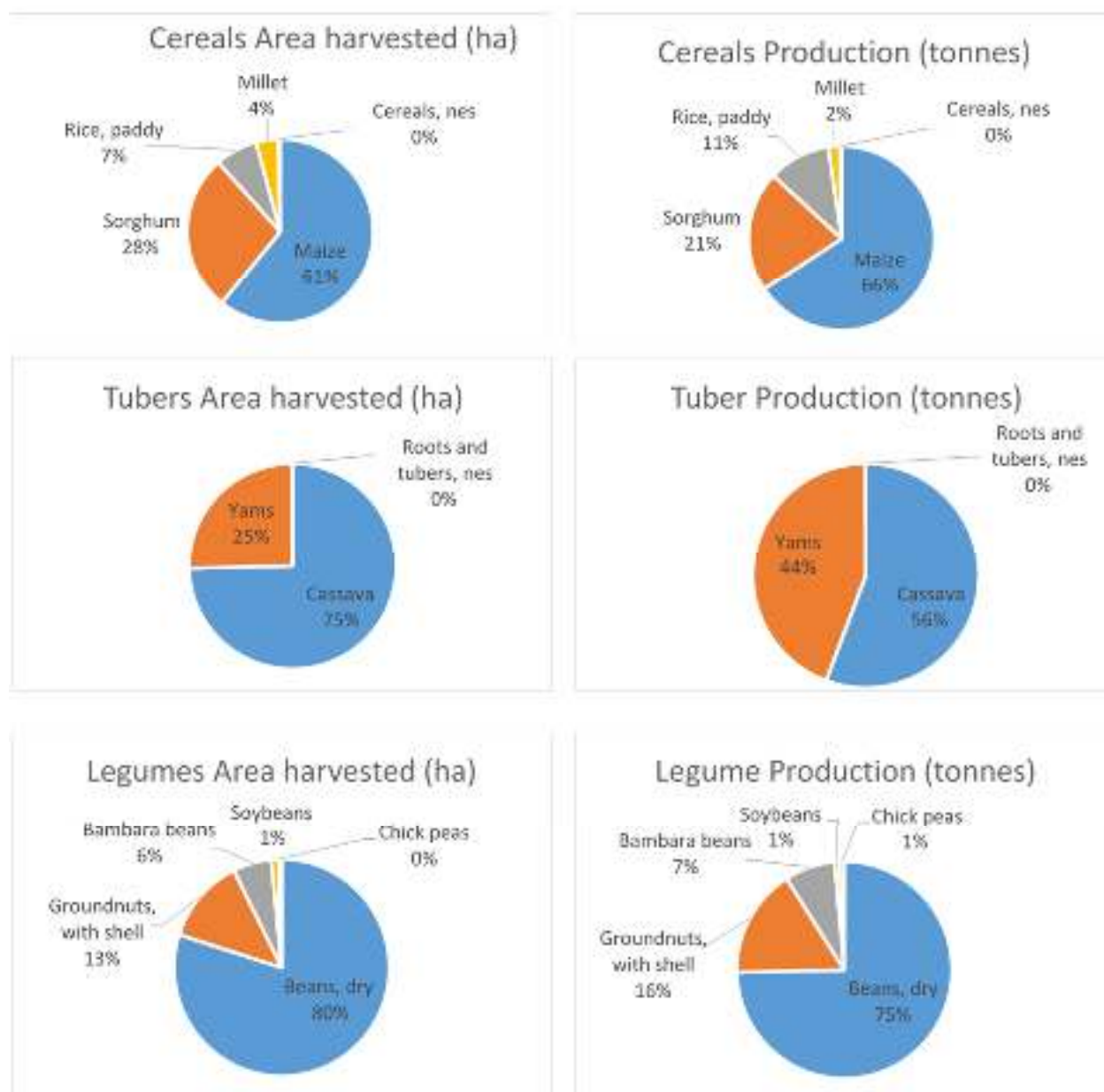
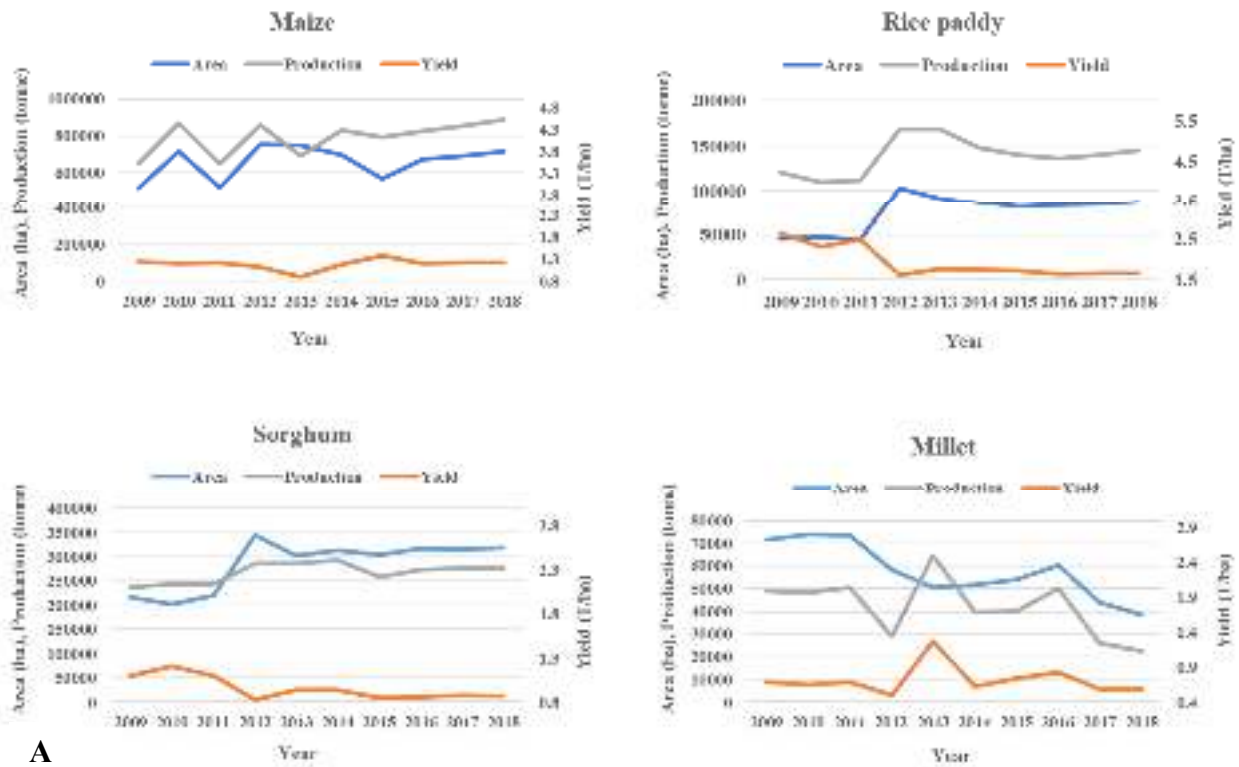


Figure 1. Food crops importance (production and harvested area) per group in the country (DSID, 2018)

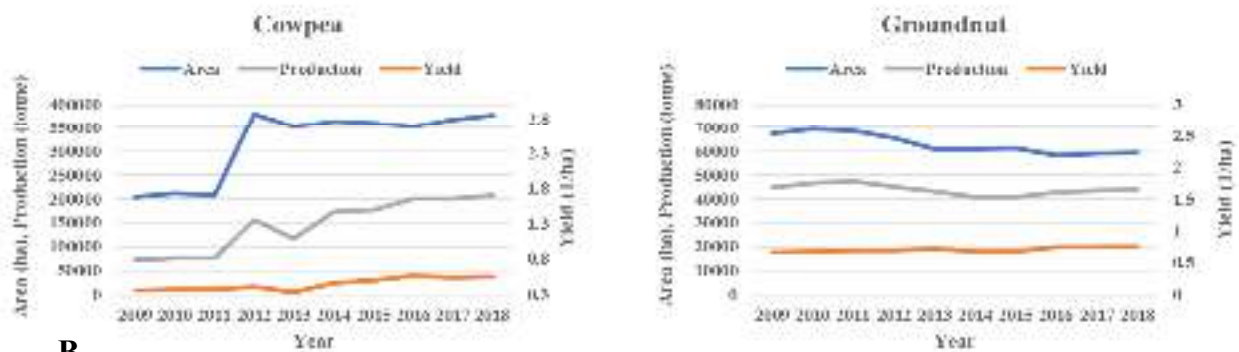
Figure 2 presents the trend of production, the area under cultivation and the yield of major food crops in the past 10 years. Generally, production increased as the area under cultivation increased. At the same time, most of the yields remained stagnant.

Trend in Cereals production in the past 10 years



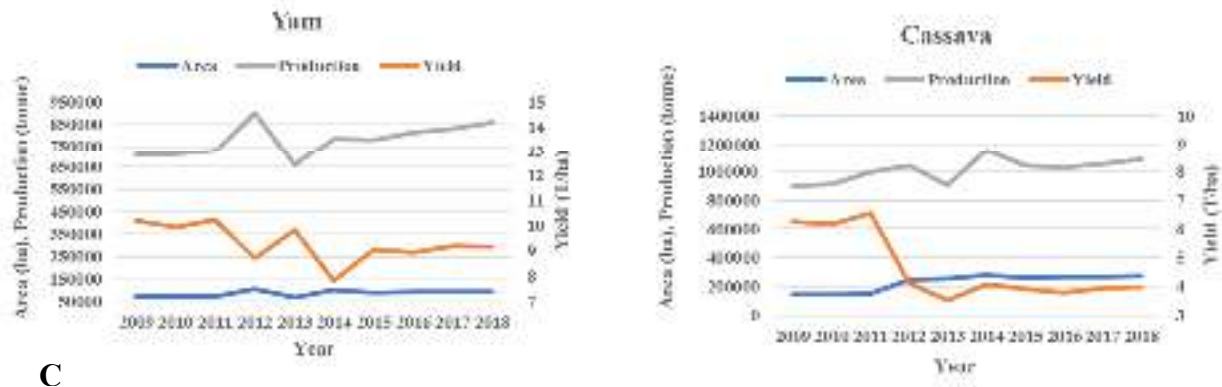
A

Trend in Legumes production in the past 10 years



B

Trend in Roots & Tubers production in the past 10 years



C

Figure 2. The trend of production, area under cultivation and yield of major food crops (A: Cereals, B: Legumes, C: Roots and tubers) in the past 10 years.

2.2 Description of the country's main agro-ecologies and their cropping systems

Togo is one of the smallest countries in West Africa. Nevertheless, Togo has a variety of landscapes and straddles several bioclimatic regions. Northern Togo (Center, Kara, and Savannah regions) is characterized by the seasonal Sudanian climate (dry climate) with one rainy season (April- October). Woodlands and savannas still predominate in the north, but they are losing ground to agriculture. This region is exposed to dry Harmattan winds and prone to drought. The Atacora mountain range crosses central Togo, with more wooded landscapes, and a few isolated remnants of dense tropical forest. These forest relicts from the eastern limit of the Upper Guinean forest ecosystem. The southern half of Togo (Maritime and Plateau regions) falls into the Guinean climatic region, characterized by two rainy seasons (April-July and September-October) and annual rainfall between 800 and 1,000 mm. The coastal area, however, is part of the Dahomey Gap, a relatively dry savanna zone that separates the high rainfall regimes outside of Togo to the east and west. The coast receives an average of only 900 mm of rainfall per year; annual rainfall varies from 800-1500 mm. The natural vegetation consists of dense and open forests, riparian training and also completely degraded or built area.

There are four agro-ecological zones –

- a. *Coastal region*
- b. *Forestry*
- c. *Humid savannah* and
- d. *Dry savannah.*

Table 2. Crops and cropping systems in different agro-climatic zones in Togo

Agro-ecologies	Major crops	Major cropping Systems
Coastal Region	Maize, cassava, rice, tomato and vegetable cultures, cotton, cowpea, groundnut	Root Crop Mixed Farming System
Forest Zone	Maize, yam, rice, cassava, cowpea, cotton, soybean, coffee, cocoa	Tree Crop and Forest-Based Farming Systems in wetter regions and Cereal-Root Crop Mixed Farming System in drier regions
Humid Savannah	Maize, yam, rice, cassava, cowpea, cotton, groundnut, soybean, fonio (small millet)	Main location of the "yam belt" in West Africa extending from Côte d'Ivoire through Ghana, Togo, and Benin into Nigeria and part of Cameroon (Andrew, 1995)
Dry Savannah	Maize, yam, rice, cassava, cowpea, cotton, groundnut, soybean, fonio	Maize, sorghum, and pearl millet - mainly for subsistence, while cash crops such as cotton, some vegetables, and legumes such as okra, cowpea, soybean, root crops, cassava and yam and groundnut

In the plateau sub-humid region of Togo, farmers combine several strategies to restore and maintain soil fertility. They traditionally manage soil fertility by including a period of fallow in their farming systems, although its duration is increasingly limited by population growth pressure. In addition, soil-improving plants are planted to enhance soil fertility. For instance, *Cajanus cajan*, which is a legume shrub, is planted in fallows and sometimes around plots. Besides its fertilization capacity, this plant presents other advantages: its grains are consumed by local populations and its stems provide firewood.

In parallel, farmers favor agroforestry systems. Cash trees are planted (such as cashew tree, oil palm or teak), and crops cultivated under them. Furthermore, some tree species are preserved (baobabs, papaya, shea, mango trees... etc.). They provide fruits for local populations' alimentation; their wood is used for energy and constructions; they bring shade for workers; and some of these trees' leaves (Neem, *Leucaena*) constitute green manure (Valentine *et al.* 2015).

Table 3. Crop Calendar of staple food crops of Togo (FAO, 2019)

Crops	Months											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Cassava												
Maize (Main)												
Maize (second)												
Millet & Sorghum												
Rice												
Yams												

Legend

Sowing	Growing	Harvesting
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Farmers adopt strategies of diversification and plant-based improvement of soil fertility to maintain their production capacity. By maintaining tree species that provide foods and enhance soil fertility, peasants contribute to food security of local populations and to the maintenance of fertile land in long term. Such plant associations may also contribute to improving their resistance to the spreading of weeds, pests, and diseases.

2.3 Current status of agricultural extension activities

Results from the national agricultural Census (DSID, 2014) revealed that about 95% of the farmers have never directly benefited from extension activities. This proportion is higher among women (97%) than that among men (93%). However, a large proportion of the smallholder farmers benefit from their proximity to the small proportion of supervised farmers.

Three structures provide supervision of the farmers' fields, namely:

- ✓ ICAT, the government extension agency, contributing up to 63.4% of the supervised farmers;
- ✓ NGOs, with 22.6% and
- ✓ Projects, with 14%.

Extension services in Togo are presently limited by a decline in the number of extension officers, weak organization of producers, particularly of small-holder farmers, lack of harmonization of agricultural extension strategies, and lack of an extension policy.

❖ **Level of the capacity of public extension system** - Led by Ministry of Agriculture, Livestock and Fisheries, *Institute of Technical Support Council (ICAT)*, Togolese Agricultural Research Institute (ITRA) and Advanced School of Agronomics (ESA), University of Lome.

ICAT

The Institute of Advice and Technical Support (ICAT) was created on July 23, 1997. It is a public establishment of agricultural character, installed in the five regions of Togo. Its mission is to promote, on one hand, a professional agriculture through the popularization of improved agricultural techniques adapted to the needs and possibilities of the producers and, on the other hand, to the efficient agricultural professional organizations (OPEA) capable of ensuring the representation of different sectors and participate in the design and extension of agricultural development programs. To achieve these missions, ICAT uses intervention strategies that are:

- ✓ the empowerment of producers through the participatory approach with a view to their professionalization,
- ✓ research and development for a synergy of actions towards the rural world with all actors,
- ✓ intermediation between producers for the provision of different services and finally,
- ✓ a flexible operational system where the dimension of local technical support remains very strong at the level of the institution.

ICAT has partners such as GIZ, NSCT, ITRA, Red Cross, FAO etc.

The ICAT is subdivided into 5 regional directorates located in the administrative regions of Togo.

Each regional directorate includes the following services:

- Agricultural Extension and Support Service (SVAPA)

The main tasks of this service are to ensure the practical organization and smooth running of the extension system in all agencies in the region; to provide effective support in the technical, economic and specific areas at the agency level.

- Support Service for Cooperative Development (SADC)

It intervenes in support of the emergence and organization of Cooperative Societies. It is represented at the level of the agencies by a Specialized Technician in Professional Agricultural Economic Organization (TS-OPEA) who relies on the Agricultural Advisers (CrA) in the antennas for the realization of his work.

- Administration and Finance Department (SAF)

The department is responsible for staffing and financial management.

- Monitoring Unit (CSE)

It deals with the internal evaluation of the activities of the structure.

The agencies ensure the execution of the various extension programs and management advice through all the antennas by an operational system of extension. Each agency is technically led by a team of Technical Advisors in Agricultural Enterprise Management (CTGEA) under the coordination of the Head of Agency (CAG).

Currently, ICAT has a total of 250 technical advisors that cover 300,000 farmers.

- ❖ ***Level of activity by non-governmental and private sector entities in agricultural extension*** – Led by Enterprises Territories and Development (***ETD***), Action Research Group for Socio-Economic Development for Human Development and International Cooperation (***GRADES***), Research, Support and Training for Self-development Initiatives (***RAFIA***), Action Research Center for the Environment and Integrated Development (***CREDI***) and Christian Research Group Actions for Human Development (***GRAPHE***).

Enterprises Territories and Development (ETD)

Enterprises Territories and Development – ETD is a non-profit organization. Created in 2003, legally formalized in June and recognized in Togo on April 30, 2008 under n ° 0160 / MATDCL-SG-DAPOC-DOCA. Recognized as Non-Governmental Organization (NGO) on December 23, 2011 under number no. 631 / PR / MPDAT / 2011 in Togo, it received its Program Agreement with the Togolese Government on May 15, 2012 under the number N ° 324 / PR / MPDAT / 2012. Its actions cover the whole country.

The different activities of ETD are as follows:

- ✓ Promotion of small businesses and agro-food SMEs like ESOP (Business Services and Producer Organizations)
- ✓ Structuring value chains and agricultural filters
- ✓ Promoting entrepreneurship for young people
- ✓ Promotion of contract farming
- ✓ Creating favorable conditions for agricultural production: structuring of small producers, supply of production support services, setting up of infrastructure and equipment for production and post-harvest treatment
- ✓ Promotion of consultation and decision-making frameworks between local public authorities and local civil society organizations (CSOs)
- ✓ Support to planning through participatory and inclusive inter-village diagnosis
- ✓ Capacity building of communities in project management, mobilization and management of local finances.
- ✓ Education for sustainable development
- ✓ Support for the implementation of local initiatives of an environmental nature
- ✓ Restoration of banks along waterways
- ✓ Support for reforestation
- ✓ Sustainable management of productive water

In short, ETD provides technical support to the various actors (producers, ESOP managers, local authorities), through training and sensitization in areas such as: rural agro-food entrepreneurship, technical production routes, management of food companies, the marketing of agricultural products, local governance, concerted planning, project management, territorial management of spaces and natural resources and others.

2. GRADSE

The NGO Action Research Group for Socio-Economic Development for Human Development and International Cooperation (GRADSE / PHCI), is a non-profit organization created in 1998. It is recognized under the number N ° 1301 / MISD-SG-DAPSC-DSC as an association and as Development NGO under the number N ° 194 / MPD / 2000 officially by the Togolese government.

Its actions have been oriented towards the study and structuring of the environment, support for income-generating and local employment activities, support for collective actions of community interest, advisory support, evaluation and training. formations.

GRADSE operates mainly in the Central and Kara regions of Togo in the following areas:

- ✓ Rural agricultural training,
- ✓ Management of producer organizations,
- ✓ Agro ecology, food and nutrition security,
- ✓ Promotion of rural entrepreneurship
- ✓ Promotion of sustainable agriculture and protection of the environment,
- ✓ Identification and management of income generating activities,
- ✓ Promotion of women and youth employment,
- ✓ Promotion of human rights and good governance
- ✓ Community Health
- ✓ Microfinance in rural areas
- ✓ Food processing

The NGO GRADSE pursues its objectives through the strategy based on:

- ✓ Training sessions
- ✓ Exchange / reflection meetings

- ✓ The process of participatory knowledge of the milieu implied by the dynamics of research - action, permanent formation and collective creativity
- ✓ Support for the identification, design, development, implementation, management and evaluation of programs with projects and micro-projects of Local and Participative Development
- ✓ Surveys, studies, consultations, collection, capitalization and dissemination of development information
- ✓ Agroecological and craft training centers
- ✓ The management of local and participative development services in the socio-economic, socio-cultural and socio-sanitary domains.

3. RAFIA

The Research, Support and Training for Auto development Initiatives – RAFIA is a development NGO, officially recognized on March 30, 2001 under the n° 205 / MPATHU / 2001.

It carries out activities in the sectors of agriculture (sustainable agriculture and food security, promotion of promising agricultural sectors) and the management of the environment (protection and safeguarding of the environment, rational management of natural resources).

RAFIA most interventions are localized in the Savannah region, the poorest region of the country.

5. CREDI

The Action Research Center for the Environment and Integrated Development (CREDI) is a development NGO under n° 196 / MPATHU / 2000.

CREDI operates mainly in the Maritime and Plateau regions of Togo in the following sectors:

- ✓ Sustainable family farming,
- ✓ Community and mutual health,
- ✓ Management of the environment and natural resources.

CREDI strategy is based on:

- ✓ Awareness-raising, empowerment, valorization of local resources and capacities for a development process in which the beneficiary is author and actor of the action,
- ✓ Training of core partner groups,
- ✓ Accompany producers to improve farming techniques for better yield and increased income,
- ✓ Work with local communities to develop and manage natural resources.

6. GRAPHE

The Christian Research Group Action for Human Development (GRAPHE) is a non-profit Christian Non-Governmental Christian Organization (receipt N ° 143 / MIS-DAPS-DSC of 17 February 1998). Its purpose is to promote the improvement and quality of life through participatory community development programs to provide all, including young people, women and disabled people of all categories and disadvantaged peasants, the opportunity to feed themselves, to heal and educate themselves without a healthy environment.

2.4 Level of adoption of improved crop varieties, by crop

Data on the adoption rate of improved varieties are scarce and unreliable. However, this rate was estimated in 1997 at 3% for all food crops in Togo. This rate then rose to 15% in 2012 according to the fourth agricultural census (DSID, 2014). However, there are varying levels of the adoption rate of varieties of a given crop. Table 4 shows the different adoption rates of varieties for the three main kinds of cereal for which data exist. It indicates that improved varieties for crop such as maize and rice are the most adopted, even though most of them are old varieties. For sorghum, the table shows a very low level of adoption of

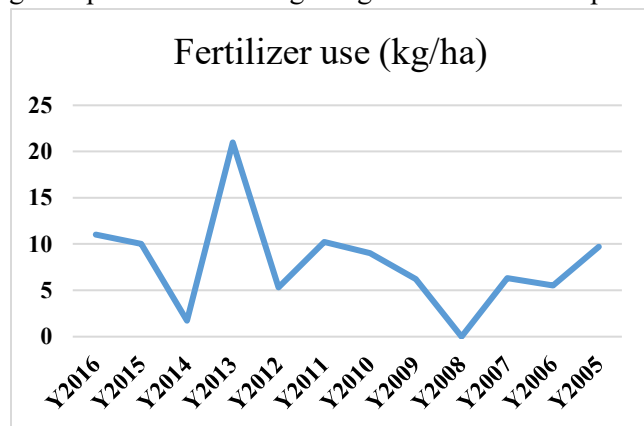
improved varieties. Generally, there is low adoption of improved crop varieties in the country which is one of the main reasons for extremely low crop productivities.

Table 4. The adoption level of improved varieties for Maize, Rice, and Sorghum in Togo in 2012

Crop	Improved varieties	Adoption rate, %
Maize	Ikenne 9449 SR	71
	Obatanpa	7
	AB11	8
	ACR97TZL	1
	TZEE W POP STR	0 (not estimated)
	Others	13
Rice	IR841	37
	TGR	13
	NERICA	16
	Others	34
Sorghum	Sorvato 1	12
	Sorvato 28	7
	Local varieties	9
	Others	72
Millet	No improved variety used	No available data
Cowpea	Vitoco	No available data
	Vita 5	
	TVX 1850-01E	
Groundnut	RMP 12	No available data
	TS 32-1	
	ICIAR 19 BT	
ICGV 01276		

2.5 Level of the utilization of fertilizer and manures to increase crop yields, by crop

In 2016, fertilizer consumption for Togo was 11 kilograms per hectare. Though Togo fertilizer consumption fluctuated substantially in recent years, it tended to increase through the 2002 - 2016 period ending at 11 kilograms per hectare in 2016. According to FAO (2006), large-scale farmers who are often commercial farmers tend to use fertilizer optimally while it is very low for subsistence or small-scale farmers. For example, in Zimbabwe, the large-scale commercial farmers apply on average 290 kilograms of fertilizer per hectare while on small-scale farming, this rate is on average around 15 kilograms per hectare; 3 times that of Togolese small-scale farmers' application rate.



The low rate of fertilizer application in Togo is driven by two factors: availability and price. It is known that not only is the fertilizer use in African agriculture very low but also the availability of fertilizer at the right time for cultivation is a major challenge, hence the ongoing debate about the benefits and drawbacks of fertilizer use in agricultural development. Sometimes, the fertilizer price is too high for most farmers. For example, the official price of one bag of 50 Kilograms of fertilizer in Togo was on average US\$15 before 2003 and in 2016, it costs about US\$22 (1USD=500FCFA). This is high for subsistence farmers with very limited purchasing power and no access to financial products leading to the use of manure. However, the application of manure is still low and low yields reflect that (ALI, 2017). Different agroecological zones and soil types could be determinants.

2.6 General description of the current system for marketing surplus production of staple crops

Since 2010, Togo has recorded cereal surpluses (Table 6) with an annual increase of nearly 10% on the main cereals, including maize and sorghum (PNIASAN, 2018). Actions have been deployed to improve the conservation and enhancement of products. In fact, over the period 2012 to 2016, the Government of Togo, with the support of its partners, has launched the construction of 267 storage warehouses for farmers' organizations with a total capacity of 20950 tonnes, a process to which the Togolese Coordination of Farmers' Organizations and Agricultural Producers (CTOP) has contributed greatly.

Despite these efforts, it should be noted that cereal and legumes, especially maize and soybeans, still face several market requirements, such as quality (moisture content, aflatoxin, etc.). Indeed, in 2015 for example, on a firm order of 20,000 tonnes, only 515 tonnes of white maize met the quality requirement and were

delivered by a member federation of CTOP, the Central Cereals Producers of Togo (CPC Togo), to Premium Foods agribusiness in Kumasi, Ghana. This has had a significant negative impact on the strategy of grouped sales operations and farmers' incomes.

In order to regulate price fluctuations in the staple food market, Togo has set up the National Agency for Food Security (ANSAT), which buys products from farmers after harvest and constitutes the security stock for the country. When prices rise up, the products are sold to consumers at an affordable price. ANSAT plays the role of balance between farmers and consumers.

Support for farmer organizations is very important to enable them to have a better understanding of market requirements and toxic substances including aflatoxin. Technical support will enable them to improve post-harvest management and thus the quality of their product for easy access to the local, national and sub-regional market. They will thus be able to feed the Regional Reserve of Food Security (RRSA) as well as other institutional markets (PAM, school canteens, etc.) with quality cereal products.

Table 5. Domestic supply and export-import of major staple food crops in Togo

Row Labels	Domestic supply quantity	Export Quantity	Food supply quantity (kg/capita/yr)	Import Quantity	Production
Cassava and products	923000	0	114.97	1000	903000
Cereals, Other	1000	3000	0.43	0	4000
Groundnuts (Shelled Eq)	31000	0	3.42	0	27000
Maize and products	693000	1000	69.58	1000	693000
Millet and products	64000	0	7.07	0	64000
Potatoes and products	3000	0	0.51	4000	
Pulses, Other and products	8000	0	0.78	0	8000
Rice (Milled Equivalent)	188000	6000	25.99	151000	64000
Sorghum and products	285000	0	24.29	0	285000
Soybeans	1000	6000	0.01	0	7000
Wheat and products	90000	3000	12.91	110000	
Yams	766000		80.77		661000
Grand Total	3053000	19000	340.73	267000	2716000

2.7 Trends in the development of markets for staple food crops

The overall population growth rate in Togo is 2.8% (FAO, 2013). However, the growth of the population in urban areas estimated at 4.4% is faster than that of the population engaged in agriculture in rural areas, which is estimated at 1, 9%. At the same time, with the effort deployed in agriculture through projects of the PNIASA the average annual growth of the crop production increased only from 3.12% during 2002-2007 to 3.55% during 2010-2015 (PNIASAN, 2018). Therefore, there is still an important local market for food crop products consumption.

An analysis of the food crop production's evolution during the period of 2010-2016 reveals that the tendency of self-sufficiency is satisfactory for all the staple food crops except for rice as indicated in the table below.

The cereal self-sufficiency rate increased from 101.26% to 112.33%. However, this rate remains below the 125% target set in ECOWAS. From 2010 to 2015, the coverage rate for rice requirements increased from 66.88% to 91.33%. However, Togo is structurally deficient in rice. National requirements are mainly covered by imports.

To improve the quality of export products and thus enable producers to access the regional and international markets, the government:

- built 267 storage warehouses for farmers' organizations with a total capacity of 20950 tons;
- supported the rehabilitation and equipping of the ITRA laboratories to facilitate nutritional analyzes and instituted subsidized analysis fees;
- built a sesame processing unit in the agropole of Kara;

Ten agropoles are in the process of being set up. Each of them will have at least one unit of food crop products processing (PNIASAN, 2018).

Table 6. Surplus / deficiency level of food crops in Togo from 2010 to 2016 in tons

Crops	2010	2011	2012	2013	2014	2015	2016
Cereals	76 489	107 439	139 486	56 662	156 522	59 526	96 241
Maize	58 623	81 495	160 425	53 142	140 311	88 456	128 668
Sorghum-Millet	29 527	29 664	-17 377	24 066	18 153	-20 760	-19 079
Rice	-11 661	-3 720	-3 561	-20 545	- 4 641	-11 219	-13 348
Fonio	0	0	0	0	2 699	3 049	0
Roots and tubers	639 137	765 294	717 382	454 036	745 243	633 136	661 235
Yam	229 619	256 998	321 971	126 961	227 460	209 338	238 649
Cassava	409 518	508 050	395 412	326 251	557 226	436 186	422 585
Others	0	0	0	823	-39 444	-12 390	0
Legumes	40 412	44 953	82 172	68 370	131 762	143 771	144 654
Cowpea	21 160	22 553	66 120	50 187	94 978	102 284	117 980
Groundnut	19 252	22 401	16 052	15 033	25 088	24 977	26 673
Bambara groundnut	0	0	0	3 150	11 695	16 509	0

Source: PNIASAN, 2018

3. National Agricultural Research System

3.1 Description of the public institutes and universities actively engaged in crop breeding

There are six public agencies involved in agricultural research in the country. *Togolese Agricultural Research Institute (ITRA)*, Lomé is the largest and accounts for > 70 % of Togo's full-time equivalent (FTE) agricultural researchers (2011). ITRA research focus is the crops, livestock, natural resources, off-farm post-harvest, river and lake, socioeconomics. Additionally, ITRA also operates research centers in each of the country's four agro-ecological zones known as Centers of Excellence for Research in Agriculture (CRA)

- i. CRA Coast (SARC) based in Davie;
- ii. CRA Forest area (CRAF) based in Kpalime;
- iii. CRA Wet Savannah (CRASH) based in Kolokopé;
- iv. CRA - Dry Savannah (CRASS) based in Kara.

Plant Protection Directorate (DPV), another public institute agricultural research focus in on socio-economics whereas *Agricultural Statistics, Information, and Documentation Directorate (DSID)* research is focused on crops.

There are three higher education agencies that conduct agricultural R&D and all three are at the University of Lomé (UL) and together employed 32 FTE agricultural researchers in 2011

- i. Advanced School of Agronomics (ESA) - largest of the three (22 FTEs in 2011) -focus on crops, livestock, pastures & forages, off-farm post-harvest, forestry, agricultural engineering, socioeconomics
- ii. Faculty of Science - focus on crops and
- iii. Advanced School of Biological and Food Technology (ESTBA) - focus on the off-farm post-harvest

No NGOs or private-sector companies do conduct in-house R&D within the country however, some of these researches to ITRA and UL.

3.2 Nature of recent or ongoing crop improvement activities, by crop

ITRA is the main institute in charge of the agronomic research in Togo and carries out the majority of plant breeding and biotechnology activities in the country. Funding for plant breeding has come from the government, the loans of the World Bank and foreign financial partners and associations of producers.

Plant breeding activities in Togo involve making crosses, assessing segregating populations, and fixed lines developed by national programs or introduced from other international programs of breeding. Togo is a member of several regional and international research networks and collaborates with research institutions, facilitating the exchange genetic material. The plant breeding budget is distributed among crops according to their economic importance. Thus, the activities of cotton breeding take about 1/3, followed by root and tuber crops, by coffee and cocoa, by rice, corn, and sorghum respectively (FAO, 2009).

The most limiting aspects for the success of the crop breeding programs in Togo is the insufficient number of breeders by crop due to the inability of the country to replace the retired breeders, the lack of adapted infrastructure and of training and educational system. The lack of financial resources for field and laboratory experiments and the lack of knowledge of the use of molecular selection techniques are also major constraints.

3.3 Level of the capacity of public crop breeding institutions

3.3.1 Scientific personnel

In 2014, the Agricultural Science and Technology Indicators (ASTI) led by the International Food Policy Research Institute (IFPRI) estimated a total of 109.6 full time equivalent (FTEs) with 7.6 FTEs engaged

in plant breeding and genetics (including Biotech) at ITRA. Thanks to WAAPP-Togo, the scientific level of the personnel has increased even though still insufficient. There is, currently, at least one PhD holder in each of the food crop breeding programs. A total of 11 researchers with PhD or Msc are involved in breeding food crops except for fonio and yam. ITRA defined five breeding programs that deal with major food crops:

- Maize breeding program with two breeders (1 PhD and 1 Msc);
- Rice breeding program with one PhD holder breeder;
- Sorghum, millet and fonio breeding program with one PhD holder breeder and one agronomist;
- Legumes and Sesame breeding program with one PhD holder breeder and one agronomist;
- Cassava and other root crop breeding program with one breeder (PhD student) and two biologists (1 PhD and PhD student);
- Yam and taro breeding program with only one Master student.

ITRA researchers lack official status and hence are paid significantly less than their university-based counterparts limiting their ability to recruit, retain, and motivate well-qualified researchers. ITRA also lacks a critical mass of Ph.D. qualified researchers. There are no postgraduate training programs at ITRA thereby limiting the capacity upgrade of Human resources (Domgho et al. 2017).

3.3.2 Infrastructure

ITRA has four research centers, each of which is located in each of the agro-ecological zones. The littoral agro-ecological zone has 4 stations, the forest zone has 7 stations that can accommodate food crops while the humid and dry savannahs have 3 stations each.

In general, the agricultural R&D centers in the country are characterized by limited infrastructures, which is more focused on livestock and poultry. There are shortages of office space and unreliable internet access, limiting the ability of researchers to conduct meaningful research.

The lack of vehicles in the centers is also critical, limiting the capacity of researchers to conduct, as required, field research.

Particularly, in breeding activities, ITRA lacks:

- Irrigation facilities,
- Greenhouses for breeding purposes,
- Threshing facilities,
- Long term storage facility,
- Precision measurement tools,
- Electric dryer to speed up breeding processes.

3.4 Recent or ongoing collaborations with public institutions, farmer-based organizations, and the private sector in seed supply

- a. **Regional** - West and Central African Council for Agricultural Research and Development (CORAF/WECARD)
- b. **International:** CGIAR centers
 - AfricaRice (Rice focus),
 - International Institute of Tropical Agriculture (IITA) –Cassava focus
 - International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)
 - International Center for Tropical Agriculture (CIAT)
 - Agricultural Research for Development, France (CIRAD) - focus on crops, livestock, food and energy security, public policy,
 - FAO, and
 - Agronomists and Veterinarians Without Borders (AVSF)

c. National –

- Higher education agencies (ESA, Université de Lomé, Université de Kara)
- Plant protection directorate (DPV)
- The extension (ICAT)
- Farmer organizations
- NGOs

3.5 Current status of crop variety licensing arrangements for the production of seed by third party entities

At the national level, plant variety protection is carried out by the African Intellectual Property Organization (OAPI) through the National Institute of Industrial Property and Technology of Togo (INPIT). This institute advises breeders on the need to protect their accessions and then transmits the files of breeders wishing to protect their properties to OAPI for their instructions.

Currently, apart from the two varieties of sorghum (Sorvato 1 and Sorvato 28) developed by sorghum breeder in Togo, there is no food crop variety developed by any other breeder.

4. Status of Seed Supply

4.1 History of crop breeding and seed supply in the country

Agricultural research began in Togo in the 1940s, when the regional branches of several French agricultural research institutes were established. In the aftermath of independence in 1960, most research activities were continued and two additional French research institutes were created: the Institute of Tropical Agronomic Research (IRAT), created in 1961, and the Research Institute of Coffee and Cocoa (IRCC), established in 1967. Togo was then not able to nationalize its research system because of insufficiently qualified scientists and limited public resources.

The breeding activities are mainly conducted by the Togolese Agricultural Research Institute which produces and markets basic seeds, while certified seeds are mainly produced by farmer-based seed enterprises, cooperatives or individual seed producers.

The seed production activity started in Togo with the seed production of the NH1, maize hybrid, by IRAT. Projects such as PRODERMA, FED Savannah, FED Kara, North-Togo Project took over the production of certified seeds since 1976.

In 1977, the Central Region Integrated Development Project-GTZ (German project) initiated a real seed production program by transforming the former Sotouboua Agricultural-Farm into a real seed production station that was able to satisfy not only the local needs but also exported seeds to many countries in West Africa.

In 1985, the government set up a national seed system plan in which public agricultural services were responsible for a variety of introduction, maintenance, and improvement. They produced the pre-basic seeds and provided the technical support and control of basic seed production at Sotouboua. In that plan, the Regional Directorates for Rural Development (DRDR) was charged to organize the production of certified seeds by seed multipliers who were composed of cooperatives and other farmer-based association. The DRDRs were also charged to ensure the technical follow-up, distribution, and sale of the certified seeds.

Unfortunately, the system collapsed from 1990 as a consequence of the socio-political crisis and after the Germans left the country. The quality of seeds used from then declined significantly, affecting agricultural production until 2008. From 2008, with the implementation of the Agricultural Production Revival Strategy and also with other projects such as the Community Development Program and reinforcement of the food

security bases of vulnerable farm households intervened in 2009, the use of improved seed in agriculture regained its importance and was considered as the pillar in increasing substantially agricultural production.

4.2 Recent and ongoing activities aimed at the release of improved crop varieties, by crop

In the past, focus crops of research for the NARS have been (a) Roots and tubers (24 %); (b) Cereals (15 %); (c) Oil-bearing crops (7 %); (d) Pulses (6 %); (e) Horticultural crops (3 %) and (f) others (14%). Yam is the most researched crop, engaging 11.8 % researchers followed by Cotton (10.5%), maize (9.7%), rice (8.7%), groundnut (7.4%) and cassava (7%), cocoa (6.3%), cowpeas (5%) and beans (3%).

Table 7 summarises the current situation in the public research institute (ITRA) in developing new varieties.

Table 7. Summary of the past, current and ongoing breeding activities at ITRA

Crops	Breeding (Programme, focus, no. of breeders involved)	Current varieties	Implications	Preferred traits	New Varieties released	Constraints to high yield
Maize	-Breeding focused on high yielding, stable and disease resistant varieties. Current focus is on hybrid development -2 Breeder (Ph D, Msc)	Ikenne 9449 SR Obatanpa ACR97 TZL Comp 1 W TZEE W Pop STR QPM Sotubaka AB11 Amen	All are OPV Low yield Some are susceptible to diseases and drought	High yield Disease resistant Striga resistant Low input	None	Drought Disease Pest Post-harvest lost Lodging
Sorghum	-Improving sorghum adaptation to agro ecological zones -2 breeders (PhD, Msc)	Sorvato 1 and Sorvato 28		Early maturing, tall, grain color (red/white), suitable for local bear and paste	None	Midge, striga and soil poverty
Millet	Ongoing multilocation trials of 100 improved varieties from ICRISAT-Niger	Local accessions only	Low yield	Yield, disease resistance	None	-
Rice	Currently, breeding focused on high yielding and aroma varieties	IR841		-Yield, aroma and earliness	None	Rice blast, drought
Cowpea	-Breeding focused on high yield, striga resistance and foliar diseases -1 Breeder (Msc)	- VITOCO - VITA5 - Local accessions	- Slight production (Yield) increase as result of improved varieties release	-High yield -Insects and Disease resistance -Short cooking time -Large seed size	- NAFI - Wang-Kae - KirkHouse - Benga	- Lack of improved varieties - Diseases, striga
Groundnut	-Breeding focused on high yielding leaf spot and rosette resistance lines development -1 Breeder (PhD)	- Samnut24 (ICIAR19BT) - RMP12 - Local accessions	- Samnut24 appreciated for yield but susceptible to foliar diseases => Slight production (yield) increase	-High yield -Disease resistance -Large pod and kernel size	None	- Lack of improved varieties seeds - Diseases - Untidy agronomic practices
Soybean	-Breeding focused on test and selection of high yielding introduced varieties -1 Breeder (Msc)	- TGX1910-14F - TGX1448-2E	- TGX1910-14F is widely adopted - Soybean production increased as result of these variety release	- No shattering - High yield - Short maturity period	-TGX2004-13F -TGX1485-1D -TGX2007-11F	- Lack of improved varieties - Soil poverty

4.3 Recent and ongoing activities aimed at increasing the supply of improved seed

In the context of an effective revival of the seed sub-sector in Togo, the Seeds and Plants Directorate (DSP: “Direction des Semences agricoles et Plantes”) was created in 2009 and serves as the official quality control and certification service in Togo.

Twelve seed inspectors were trained and spread out all over the country where they ensure the control of seed production plots.

Under DSP, there exists a laboratory located in Sotouboua, in the central region of the country, which provides seed quality testing.

In 2010, with the support of the Food and Agriculture Organization of the United Nations (FAO) drafts of legal and regulatory texts as well as an initial version of the national catalog of plant species and varieties cultivated in Togo were developed. Also, activities aiming at organizing the seed producers at different levels including the National Network of Seed Producers of Cereals in Togo were established.

In December 2012, the government adopted the ECOWAS seed regulation rules, the C / REG.4 / 05/2008 Seed Regulation harmonizing the rules governing quality control, certification, and marketing of plant seeds and seedlings in the ECOWAS region. Four decrees of applications issued by the Council of Ministers on May 28, 2014, included:

- ✓ creating, attributions, composition, and methods of operation of the National Council of Seeds and Plants in Togo (CNSP),
- ✓ establishing the creation, attributions, composition and operating methods of the Seed Sector Support Funds in Togo,
- ✓ establishing a catalog Official Journal of Plant Species and Varieties in Togo; and
- ✓ establishing technical regulations for the production, quality control and certification of seeds and seedlings in Togo.

The government, through the West Africa Agricultural Productivity Programme (WAAPP), has played key role in developing seed system in Togo during the period 2013-2019. It has:

- supported the training of 4 PhDs in plant breeding on the country's priority food crops, namely maize, rice, sorghum, and peanuts, as well as several Masters in order to boost varietal release;
- supported on-station variety testing from 2013 to 2015;
- financially, supported the production of pre-basic and basic seeds of maize, rice, soybean, and cowpea;
- constantly, acquired basic seeds of aforementioned crops and distributed freely to certified seed multipliers;
- provided one seed processing and conditioning mobile unit to each of the three emerging seed companies in the country.

The ministry in charge of agriculture has recently allowed private sector to introduce and test approved technologies available in the neighboring countries in order to boost productivity such as import of hybrid seeds.

Initiatives have been taken to improve the business climate in order to support the private sector and enable it to play its role as an engine of agricultural growth. In this regard, it now takes only 24 h for any company including seed companies to be officially registered and allowed to operate in the country. This has been possible thanks to the creation of the Center of Formalities of Enterprises (CFE).

Also, the decree N ° 2014-122 / PR, of May 24, 2014, established the Seed Sector Support Fund (FAS). These funds dedicated solely to support seed system activities will enable the private sector to build its financing capacity.

4.4 Current options for smallholder to access improved seed

At the national level, *farmers with less than 1 ha* account for **92%** of the agricultural population. This indicates the predominance of smallholder farmers in Togo's agriculture.

Farmers have four options to access improved seeds (DSID, 2013) which are:

- *Their own production*: **29%** of farmers used seed derived from their own production with improved seeds. This attitude is probably due to the lack of financial resources for annual renewal of this type of seed as recommended and also, probably, by ignorance of the effects of such seeds on the varietal performance, which results in lower yields and therefore agricultural production especially for a cross-pollinated crop such as maize;
- *Local market*: 23% of farmers purchased their seeds in the local market;
- *Modern sources*: 43% obtained their improved seed supplies from extension service (16%), specialized stores (18%), NGOs / Projects (5%), or seed multipliers (4%); while
- *Other farmers*: 4% of farmers acquired improved seeds from other farmers.

However, it should be emphasized that the distribution of certified seeds of food crops is currently not organized as is the case for cotton, vegetable, and coffee and cocoa and that there is no specialized structure in the marketing and distribution of seeds. Distribution is ensured by the Central Supply and Management of Agricultural Inputs (CAGIA) and some private companies that combine the sale of food crop seeds with the distribution of vegetable seeds and pesticides.

Up to 2018, smallholder farmers benefited from the interventions of the government to increase their access to improved seeds, hence augmenting staple crops production. In this regard, the government through projects of the National Agricultural Investment and Food Security Program (PNIASA) used to buy certified seeds from the seed multipliers, seed cooperatives, and seed companies and sell it back to the smallholders at a subsidized price. For instance, the quantities of seeds purchased and distributed by the PNIASA increased from 500 t in 2012 to about 800 t in 2014 and represent only about 50% of available seeds. The varieties mainly concerned by this action are IKENNE 9449 SR varieties for maize and IR 841 for rice, thus limiting options to access other improved seed. These provisions made it possible to increase the total area sown with seeds of improved varieties from 5 to 11%.

However, emerging seed companies such as " Ets. Le Paysan" and SCOOPs "The Two Sunny Hills" ensure the distribution of their products through various strategies.

Currently, to really improve the production and distribution of quality seeds of staple crops, a new strategy, mainly based on the promotion of clusters (involved in a specific value chain) led by private seed companies, is being implemented. In this new strategy, smallholders will be provided with improved seed directly by the aggregator of the value chain with respect to the terms in the contract between them (Figure 3.).

Agri-Incentive and Financing Facility (MIFA) will play a key role in facilitating access to credit by the aggregator.

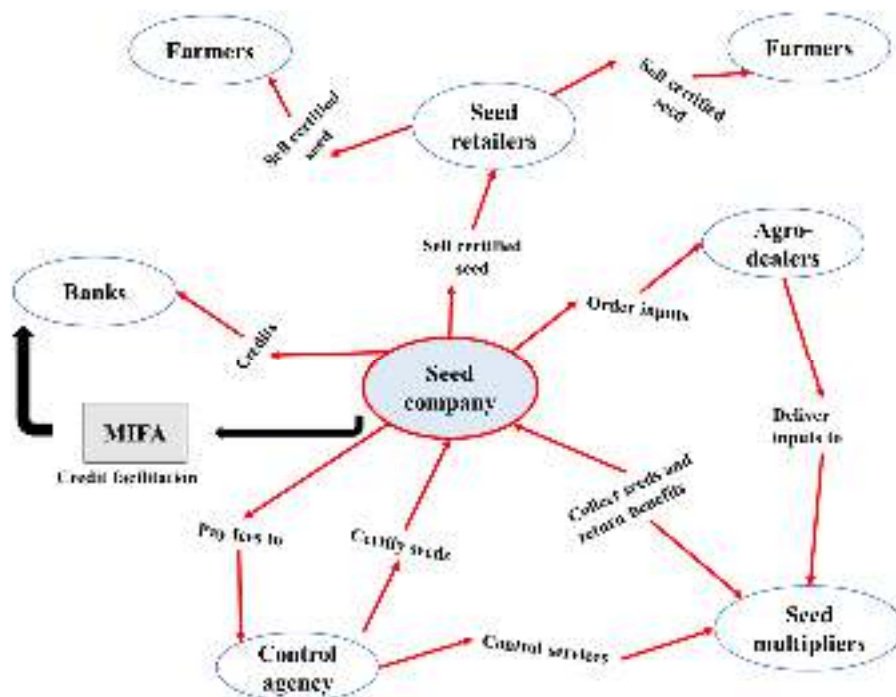


Figure 3. A cluster of a seed system

4.5 Number of private seed companies operating in the country and their estimated annual supply

Six index companies operate in Togo, but East-West Seed and Technisem are the only ones with testing locations. Technisem is the only one with extension services in the country. The representation of Technisem in Togo is called Togo seeds sarl or Togosem sarl. Both Togosem and East-West Seed representation in Togo import and sell vegetable seeds adapted to the tropical zones. But, currently, two hybrids (intermediate and late maturing) maize from Seedco, namely, SC 649 and SC 719 have been introduced by Togosem and their trials are ongoing.

Emerging seed companies are Ets LE PAYSAN and Abé Solo-Seeds Company. The latter mainly focuses on soybean. None of the companies has breeding or processing locations in Togo.

4.6 Other non-governmental and farmer-based organizations active in seed production and supply

Farmer-led organizations are important seed providers in the country, such as ESOP-Semences, the National Network of Certified Seed Producers- Togo, and Cooperative Societies such as COOP-CA Otissan, SCOOPS of the Two Sunny Hills, SCOOPS Good Seed, SCOOPS Super Seed, SCOOPS Dakalfan and SCOOPS Lando. Improved varieties of maize, rice, sorghum, soybeans, cowpeas, and groundnuts are the most prevalent in terms of production and marketing. Togo Semence is the main supplier of vegetable seeds; the company represents Technisem in Togo. Additionally,

- i. **Seed-producing cooperatives** consist of small individual seed producers- There are about 20 seed-producing cooperatives or related community-based associations producing seeds in the country, of which 10 are registered and officially recognized. The introduction of 2010 The Organization for the Harmonization of Business Law in Africa (OHADA) Act on Cooperatives stimulated the establishment of cooperatives helped increase the number
- ii. A **network of young producers and agricultural professionals** has been set up within the Coordination Committee of Farmers Organizations and Agricultural Producers

Private actors are perceived in four categories, including:

- Emerging seed companies or companies: these are ESOP-Seeds, cooperative societies or individual companies producing and marketing seed of improved field crop varieties. These companies rely on farmers-multipliers who provide them with the raw material (raw seeds);
- Vegetable seed supply companies: These are mostly companies importing and marketing plant protection products that also have on their shelf's vegetable seeds specimens such as tomato, green chili, lettuce, carrots, cabbage, etc.;
- Multiplier farmers: the activity of producing certified seeds of food species is practiced today by individual producers and organized into groups or associations. For most of these multipliers, seed activity is still secondary to other agricultural activities. Specialization in seed production is still shy;
- Individual Distributors: The distribution of certified seeds is provided by individual growers-multipliers, agricultural input sales establishments, and private individuals. It should be noted that in terms of distribution, especially food seeds, it is often difficult to distinguish between producer and distributor, the former playing the role of the second at the same time.

4.7 Facilities and equipment available for seed processing and packaging in the country

No information is available for processing, packaging and storage facilities Togo. According to Access to Seed Report for Togo, the major companies operating in the country viz. Bejo, East-West Seeds, Limagrain, Pop Variety Seeds, Sakata, and Technisem only have sales operations in Togo, with only East-West Seed and Technisem having testing locations. Even the regional companies operating in the country (Abe Solo-Seeds Company, Ets LE PASYAN, MONFITH, STIEA, and Togo Semnce/Technisem) don't have any breeding or processing centers with the country.

Recently, the government through WAAPP acquired three mobile units for seed processing, treatment, and packaging for three of the emerging seed companies (Ets LE PASYAN, COOP-CA-PS-OTISAN, and "Daily Bread of the youths of Kara").

4.8 Tonnages of seed certified and marketed in the past five years, by crop

Certified seeds, especially for staple crops, are produced by registered and trained farmers called seed multipliers. There exists a network of certified seed producers in Togo. At the prefectural level, they are grouped in associations of seed producers which come together to form the Union of seed producers at the regional level and finally, the national network of certified seed producers of Togo (RNPS-C-T) for the whole country.

Three categories of certified seeds producers are registered in Togo: the small seed producers representing 74%, who plant between 2 and 4 ha; medium seed producers with 4 to 10 ha who represent 21% and large seed producers representing only 5%, who exploit more than 10 ha.

The quantity of certified seeds produced by the national network of seed producers since 2009 is presented in Table 8.

Table 8. Tonnage of certified seeds from 2009 to 2018

Year	Quantity of certified seeds (T)						
	Maize	Rice	Sorghum	Soybean	Cowpe a	Groundnu t	Total
2009	353.764	176.371	3.614	0	0	0	533.75
2010	632.67	128.9	4.6	3.5	0	0	769.67
2011	713.793	369.486	5.4	44.82	0.3	0	1133.80
2012	898.68	289.353	1.1	71.1	0.15	0	1260.38
2013	1430.654	447.946	0.8	96.6	0		1976.00
2014	1674.169	750.938	10.7	155.85	1.65	1.5	2594.81
2015	1151.604	397.814	6.1	309.245	1.7	1.7	1868.16
2016	763.83	289.62	13.3	373.7	1	5.1	1446.55
2017	756.8	261.545	4	401.81	7	21.3	1452.46
2018	1061.908	613.759	1.7	716.45	0.5	7.95	2402.27

4.9 Number of agro-dealers currently in operation, by region

Until 2015, the sale and distribution of fertilizers throughout the territory were monopolized by the government through the Central Supply and Management of Agricultural Inputs (CAGIA). In 2016, the government withdrew from the fertilizer distribution allowing private sector to take over. Seven agro-dealers indicated in the table below were then given the chance to operate in the country.

Fifty companies are given the authorization to market pesticides in the country by the National pesticide management committee (CNGP-TOGO) and the Professional approvals, authorizations and licensing commission (CAPAL). All the fifty companies are based in Lomé (Maritime region) except SPROCA, MONFITH Sarl U, STIEA Sarl, and ARYSTA LIFE SCIENCE TOGO-SAU which have representations in the four remaining regions. They combine, most times, pesticides, fertilizers and vegetable seeds.

Table 9 gives the ten (10) agro-dealers that cover the whole of the country with the number of their shops per region.

Table 9. Number of registered agro-dealers supplying inputs throughout the country

Name of the company	Specificity	Number of chops				
		Maritime Region	Plateau Region	Central Region	Kara Region	Savanna Region
ELISEE COTRANE	Fertilizers	19	23	40	41	29
STD	Fertilizers	4	5	12	22	11
FREDOS VANOS	Fertilizers	11	8	2	8	2
QUALITAS	Fertilizers	10	6	8	10	11
BONI SARL	Fertilizers		1	3	3	3
BIOCHEM	Fertilizers	1	2	3	2	
SPROCA	Fertilizers + Pesticides	2	3	1		2
MONFITH Sarl U	Fertilizers + Pesticides	2	1	1	1	1
STIEA Sarl	Fertilizers + Pesticides	2	1	1	1	1

ARYSTA LIFE SCIENCE TOGO-SAU	Fertilizers + Pesticides	1	1	1	1	1
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4.10 Level of importation of certified seed from neighboring countries, by crop

In Togo, there have always been informal introductions of small quantities of certified seeds of food crop varieties from neighboring countries but which do not fall within the framework of seed trade between countries. However, significant amounts of certified seeds of crops such as maize and soybean have been registered in 2019 as indicated in Table 10.

Table 10. Quantity of certified seeds imported in 2019

Group	Crop	Imported quantity (kg)	Total
Cereals	Maize	27693.4	41693.4
	Rice	3000	
	Fonio	11000	
Legumes	Cowpea	130	84477.5
	Soybean	64050	
	Groundnut	9700	
	Sesame	10597.5	

4.11 Summary of prospects for improving seed supply

To improve seed supply in Togo, efforts must be put on:

- ✓ Create and ensure an increasing demand for the grain market;
- ✓ Development and use of high yielding varieties capable of doubling or multiplying by three the current yield;
- ✓ Strengthening the capacity of the extension services and focus on the use of improved seed;
- ✓ Entrepreneurship of the seed multipliers: production on large scales; capacity of distribution of the seed, etc.

5. National Seed Policy Framework

Togo is a part of the EOCWAS region and follows the seed policy framework for the region and has implemented ~99% of the seed policies of the region. Togo has gazetted the harmonized seed regulation on December 17, 2012 is now a part of the common seed market under construction in Western Africa

At the country level, various agricultural sector policies have been implemented since independence with the goal of modernizing and increasing the contribution to Gross Domestic Product (GDP), and poverty reduction, as well as improvements in the well-being of the entire population, particularly in rural areas. Agricultural policies in Togo may be examined in four main periods: the period *before the green revolution* (before 1977), the *green revolution period* (between 1977 and 1988); the *structural adjustment period* (SAP) (1988-1999) and *post-structural adjustment period* (Post SAP) (2000-2015). We will be focusing on the post-structural adjustment period policies to assess the current scenario regulating the agriculture in general and seeds breeding, production and variety release in particular.

Post SAP and agricultural policy

The period from 2000 to 2015 was characterized by the strategy of the upturn of agricultural production with focus on the following

- a. how to feed the Togolese population,

- b. improve producers' incomes,
- c. gain from the foreign exchange and
- d. create jobs

The policymakers are of the opinion that improving the agricultural productivity of small-holder farmers will play an important role in poverty alleviation and meet the Sustainable Development Goal No.1 by 2030 that *seeks to end poverty in all forms and dimension by increasing the access of basic resources and services* with targeting the most vulnerable communities affected by conflicts and climate-related disasters. The essence of this new strategy is called “*new vision of Togo 2030*”. To meet this goal, Togolese policymakers have launched some projects:

- a) Programme d’Appui au Développement Agricole au Togo (PADAT) financed by the International Fund for Agricultural Development (IFAD) to strengthen agricultural development;
- b) Projet d’Appui au Secteur Agricole which is financed by the World Bank.

Both the abovementioned projects (PADAT and PASA) are part of the national program of investment for food security projects (PNIASA) seeking to meet the *Comprehensive African Agriculture Development Program (CAADP)* target of increasing the agricultural annual growth rate by at least 6% per annum. These projects were focused on *improving maize, rice and cassava production* as well as strengthening small ruminants and poultry production. They also seek to *enhance producers’ capacity building and organizations at local, national and regional level*.

Togolese national farmers’ forum was launched in 2009 with the first edition in 2009 consisting of 4250 producers.

5.1 Documents which control the production and supply of seed

The seed sector in Togo is governed by Regulation C / REG.04 / 5/2008 harmonizing the rules governing the quality control, certification, and marketing of plant seeds and seedlings in the ECOWAS region. This regulation acts as seed law at the national level since December 2012.

The above-mentioned regulation is supported by the following decrees and orders that govern seed production and supply in Togo:

- Decree No. 2014-121 / PR of May 28, 2014, establishing the founding, attributions, composition, and methods of operation of the National Council of Seeds and Seedlings in Togo;
- Decree No. 2014-122 / PR of 28 May 2014 establishing the organization and operation of the Seed Sector Support Fund in Togo;
- Decree No. 2014-123 / PR of 28 May 2014 establishing an official catalog of species and plant varieties in Togo;
- Decree No. 2014-124 / PR of May 28, 2014, establishing technical regulations for the production, quality control and certification of seeds and seedlings in Togo;
- Order No. 081/14 / MAEP / Cab / SG of 12 September 2014 appointing members of the National Seed and Seed Council in Togo;
- Decree N ° 095/15 / MAEP / Cab / SG of 22 May 2015 granting admission to the control, issuing, suspension and withdrawal of the professional card of actors of the seed sector in Togo;
- Order No. 096/15 / MAEP / Cab / SG of 22 May 2015 on the allocation, composition, and functioning of the technical committee for the approval of species and varieties within the National Council for Seeds and Seedlings;
- Inter-ministerial Order No. 089/16 / MAEH / MEFPD of 12 April 2016 setting the amounts and methods for recovering certification fees;
- Order No. 088/16 / MAEH / Cab / SG of 12 April 2016 fixing the fees for the approval and registration of a variety in the official catalog of species and plant varieties in Togo.

The implementation of the decrees began with the operationalization of the National Seed and Seed Council (CNSP). Collection of the inspection fees and the analysis of the seed samples in the laboratory started in the 2016-2017 growing season.

5.2 Process for the official release of improved crop varieties

With regard to the registration of varieties in the national catalog of species and variety, the law says that a breeder who wishes to register a new variety must send a request to the Technical Committee for the Registration of Species and Varieties (CTHEV) created by order N ° 096/15 / MAEP / Cab / SG of 22 May 2015. After all fees have been paid, the requested seeds of the new variety are sent to the School of Agronomy (ESA) of the University of Lomé which is responsible for conducting the DUS and VCU tests. The fees to be paid are fixed by Order No. 088/16 / MAEH / Cab / SG of 12 April 2016 fixing the fees for the approval and registration of a variety in the official catalog of species and plant varieties in Togo, in its Articles 2, 3 and 4.

It should be noted that the CTHEV has never functioned since its establishment because there has not been a varietal release request since then. However, the country has since 2010, with the support of FAO, a National Catalog of plant species and varieties cultivated in Togo. All varieties in this catalog were registered based on the breeder data.

Currently, it is established that ESA should be involved by the breeder while conducting multilocation trials in order to shorten the number of years required for the DUS and VCU tests. A minimum of one year is required depending on the conclusiveness of the test.

5.3 Procedures for seed certification

Quality control and seed certification are provided by the Seeds and Plants Department (DSP), an official quality control service created since 2009. All registered fields are inspected three times from planting to harvest. After harvest, seed samples are taken from seed lots following the ISTA requirements and sent to the Laboratory in Sotouboua.

The Lab tests mainly for germination, humidity, specific purity and issues a report of results that are sent to the DSP where are issued the certificates.

5.4 Current status of the regulatory agencies in charge of seed certification

5.4.1 Active personnel

The Seeds and Plants Department (DSP) is composed of

- twelve (12) seed inspectors spread over the entire country (2 in the Maritime region, 4 in the Plateau region, 2 in the Central region, 2 in the Kara region and 2 in the Savannah region). These inspectors provide field inspection through visits to seed production plots. After field monitoring, seed samples are collected and sent for analyses in the laboratory, based in Sotouboua;
- the head of the laboratory,
- two (02) seed analysts assisting the head of the laboratory in the analyses.
- The director of the department.

5.4.2 Infrastructure

The national agency in charge of seed control and certification have:

- ✓ One laboratory equipped by FAO since 2011;
- ✓ One more modern laboratory in construction, financed by WAAPP.

5.5 Current status of basic (foundation) seed supply

The basic seeds production is currently under the exclusive responsibility of the Togolese Institute for Agricultural Research (ITRA). It is mainly carried out on the station of Sotouboua in the Central Region for crops like maize, rice, soybean, and cowpea; on the station of Abouda, in the Region of Kara, for groundnut and sorghum and on the station of Ogaro, in the Savanna Region, for essentially, sorghum. The station of basic seed production of Sotouboua has more than 400 ha but less than 9% of land is used currently.

There is no proper planning in basic seed production in the country because the demand for basic seeds is always known at the beginning of each planting season. However, the quantities of basic seeds for staple crops produced in recent years increased from 14 tonnes in 2009 to 42 tonnes in 2016.

Most of its seed processing, conditioning, and storage facilities are located at the Sotouboua basic seed station and are legacies of the Central Integrated Development Project-GTZ (German Project) since 1990. They include a drying area of 2600 m², storage warehouses with a total capacity of 700 T, a chain of completely obsolete seed treatment and packaging equipment.

5.6 Procedures for production and supply of basic (foundation) seed

The pre-basic seeds produced by each crop Programme are conveyed to Stotouboua or to other CRA for basic seed production.

5.6.1 Access by private seed companies to basic seed

Basic seeds produced by ITRA are equally available for certified seed multipliers as well as the private companies. However, most of the emerging companies often order basic seeds from the neighboring countries, not because of lack of seeds but because they do not trust ITRA for the quality of the basic seeds.

5.6.2 Policies for the supply of basic seed by private sector

The ECOWAS sub-regions Regulation C / REG.04 / 5/2008 harmonizing the rules governing quality control, certification and marketing of plant seeds and seedlings, in its Articles 20 and 22 and the national Order No. 095 / 15 / MAEP / Cab / SG of 22 May 2015 on the admission to the control, issue, suspension and withdrawal of the professional card of actors of the seed sector in Togo, in its Article 9 authorize any person to produce basic seed. But for the moment, the ministry believes that the private has not enough knowledge to engage in the activities of basic seed production.

6. Summary and Conclusions

6.1 Current status of access to improved seed among smallholder farmers

Currently, with the implementation of PNIASAN, smallholders will eventually have easy access to all agricultural inputs through the dynamics of the systematic contracting of all farmers around the aggregators in different value chains for all speculations. This dynamic of contracting and professionalization of the farmer's profession is facilitated by the MIFA.

However, before then, WAAPP, which will end this year 2019, will still support the production of basic and pre-basic seeds. The project also, in this year's account, supported seed multipliers by imports of several dozen tons of improved seeds from countries in the subregion such as Burkina Faso and Mali.

6.2 Current status of government support for improving seed systems

The government's support for improving seed system can be summed up in three points:

- *Public staff:* Researchers, extension agents, inspectors, technicians from the national quality control laboratory are all paid by the State,
- *Quality control services:* the government, through the WAAPP is building a reference laboratory that will be affiliated to ISTA standards.
Royalties for quality control services are subsidized by the government.
- *Support to seed producers:* training and exchange of experiences have been organized for seed multipliers. Three seed cleaning, treatment and conditioning units, each with a capacity of 2.5 tonnes per hour, were acquired and donated to three emerging seed companies.
- *Support to seed production:* varietal maintenance and production of pre-basic and basic seeds have always been funded by the government.

6.3 Trends and opportunities for seed systems improvements

The current certified seeds coverage in the country is 5% for maize and almost 24%, considering all the crops (Figure 4). This is an indication of an existing huge market for certified seeds provided farmers accept to use improved seed.

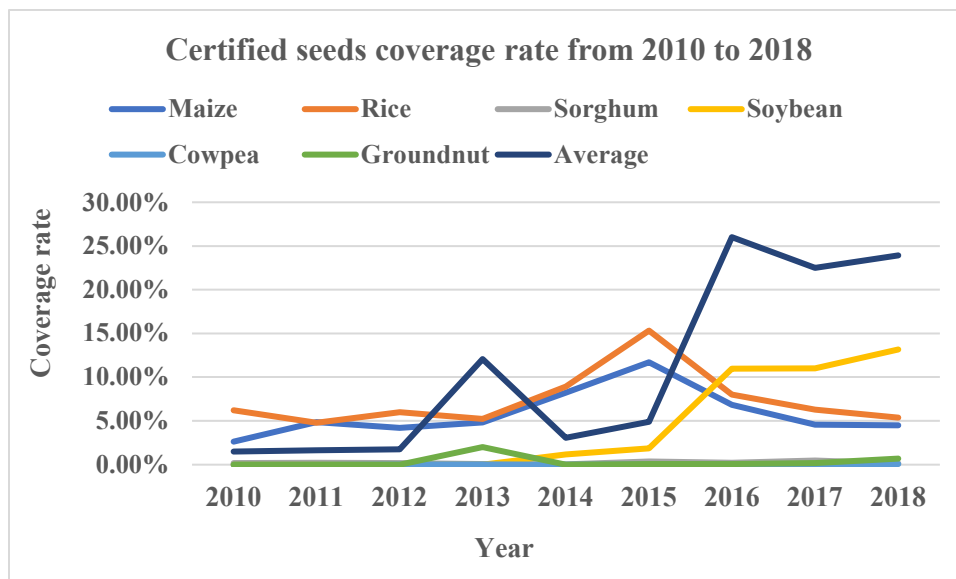


Figure 4. The trend of the coverage rate in certified seeds

There is also a huge market for local consumption of rice and soybeans for which demands cannot be covered by the current performance of the agriculture. These two sectors constitute, among others, the emerging sectors on which PNIASAN proposes to concentrate its actions. They are very well organized, with functioning value chains. For example, the production of certified soybean seeds increased from 3.5 tonnes in 2010 to 716.45 tonnes in 2018. Yet, more than 60 tonnes of certified seeds had to be imported to cover the demand this year.

The Ministry of Agriculture, through the establishment of the Directorate of Training, Dissemination of Techniques and Agricultural Professional Organizations (DFDTOPA), is currently proceeding to systematic profiling of all farmers to build a database and which goal is ultimately, to bring all producers together in different value chains. This profiling will allow proper and effective planning of seeds production from the pre-basic seeds to the certified seeds because the real quantities needed will be known. PNIASAN plans to set up 10 agropoles which will bring together several actors of value chains at a given place. These agropoles are potential and huge markets for the consumption of certified seeds.

A stock market for agricultural commodities is being created in Togo. It will enable professional producers to access sub-regional and world markets for agricultural food products. This will increase the demand for quality seeds.

Sesame, considered as a value-added sector for agribusiness, is increasingly promoted in Togo, particularly in the implementation of the Kara Agropole where a sesame processing unit was set up. Sesame seed production does not currently exist, so to boost this sector, 2589 tonnes of certified seed of the S42 variety have been acquired by the Conquistador company and given to Doufelgou Cooperative Social Solidarity Society (CSSD) as a credit.

Also, a maize flour manufacturing unit is being established in the Maritime region by the STIEA company. This high-capacity maize processing unit will provide a secured local market that will boost certified seed consumption. The implementation of ECOWAS regulations in Togo is also an opportunity for the seed market.

6.4 Recommendations

Given the understanding of the seed system in Togo, it will be advisable to consider actions in the following points:

1. Varietal development and promotion

The objective is to make available to all farmers a wide range of high-performance varieties, adapted to their needs.

Development of new varietal

Develop and make available high yielding varieties

This will include:

- ✓ Identification of the specific needs of farmers;
- ✓ Identification of gene sources;
- ✓ Establishment and conduction of trials (development of varieties, adaptability tests);
- ✓ Multi-locational and on-farm trials;
- ✓ Registration in the catalog;
- ✓ Production of the breeder and pre-basic seeds

Establishment of a presentation platform for ranges of varieties and promotion of seed activities

The objective is to make the new varieties known and promote their use by the farmer and will include:

- ✓ Establish a consultation framework that can periodically organize meetings between seed companies, grain producers and other consumers, researchers and extension agents to enable them to discover the range of varieties for promotion.
- ✓ organize days of promotion of new varieties and the profession of seed companies

2. Support for the emergence of seed companies

Set up and support the equipment and operations of three seed companies.

This support will include, among other things, training in agricultural entrepreneurship, the organization of study tours and the setting up of business plans, the consideration of environmental and social aspects, the negotiation of financing, coaching and follow-up companies over a period of 3 years.

3. Strengthening capacity for quality control and certification

Strengthening seed analysis laboratories

Have a laboratory suitable for carrying out all the seed quality tests;

Strengthening seed quality control

Ensure compliance with field production standards and contribute to the guarantee of seed quality; Guarantee the good quality of the seeds after the certification and on the different points of sale and stores

Establishment of the certification system

Control the identity of the varieties to be listed in the catalog and ensure their compliance with the standards of protection of intellectual property.

The activity will consist of rehabilitating the stations to house the DUS and VCU tests and equipping the Technical Committee for the Certification of Species and Varieties (CTHEV)

6.5 Likely impact the improvement of access to improved seed by smallholder farmers

With nearly 92% of the agricultural population, smallholders constitute the major mass of Togo's population through which the development of agriculture will have a significant impact on the development of the country.

The access of these farmers to improved seeds, especially staple food crops, will significantly increase the level of domestic production with marketable surpluses. These surpluses will contribute to improving their income and purchasing power. In addition, it will help to ensure the country's food security.

On the other hand, in the current situation, smallholders in order to improve their incomes and ensure their daily well-being engaged in the charcoal trade by destroying trees and forests. Improving their standard of living by increasing the productivity of their varieties through the use of improved seed will, in the long run, reduce their negative pressure on forests.

CONCLUSION

The seed system in Togo is characterized by:

- ✓ Favorable agro-ecological conditions to seed production;
- ✓ The willingness of the public authorities in the dynamization of the sector;
- ✓ Existence of a legal and regulatory framework (ECOWAS Seed Regulations);
- ✓ Well-structured seed producers' organizations in the country;
- ✓ Existence of official quality control and seed certification service;
- ✓ Existence of a potential seed market at the national and sub-regional level

The seed system is weakened by the *outdated performance of varieties proposed by Research institute* and the lack of entrepreneurship of the emerging seed companies.

References

- African Development Bank Group (ADBG)-Togo, 2019. Combined Report on the Mid-term Review of Country Strategy Paper 2016-2020 and the 2018 Country Portfolio Performance Review, 20pp, available on https://www.afdb.org/fileadmin/uploads/afdb/Documents/Project-and-Operations/Togo_Mid-Term_Review_Of_Country_Strategy_Paper_2016-2020_and_the_2018_Country_Portfolio_Performance_Review_Approved.pdf.
- ALI, Essossinam, 2017. A review of agricultural policies in independent Togo (1960-2015). International Journal of Agricultural Policy and Research Vol.5 (5), pp. 104-116, available online at <https://www.journalissues.org/IJAPR/https://doi.org/10.15739/IJAPR.17.012>
- Andrew, Ker, 1995. Farming Systems of the African Savannah-A Continent in Crisis, IDRC, 176pp, available on http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/20/FARMING_SYSTEMS_OF_THE_AFRICAN_SAVANNA.pdf;jsessionid=C2C3A1081AA515E2F750F1CE5CE2A2C4?sequence=1
- BONFOH Bédibètè, ALPHA Todje and GBAKENOU Koffi Inyese, 2016. Status of Agricultural Innovations, Innovation Platforms, and Innovations Investment. 2015 PARI project country report: Republic of Togo Forum for Agricultural Research in Africa (FARA), Accra Ghana, 122pp, available on https://research4agrinnovation.org/wp-content/uploads/2017/01/Togo_InnovationStudy.pdf.
- Direction des Statistiques Agricoles, de l'Informatique et de la Documentation (DSID), 2014. 4th National Census of Agriculture 2011-2014: Main characteristics of Togolese agriculture, 147pp.
- Direction des Statistiques Agricoles, de l'Informatique et de la Documentation (DSID), 2018. Series of data on the evolution of areas, production and yields of the main food crops in Togo (Unpublished).
- Domgho Léa Vicky Magne, Antoine Kpodo, and Gert-Jan Stads, 2017. Togo: In Agricultural R&D Indicators Factsheet by ASTI, available on <https://www.asti.cgiar.org/sites/default/files/pdf/Togo-Factsheet-2017.pdf>
- Food and Agriculture Organization of the United Nations (FAO), 2019. Country Brief-Togo-Crop Calendar. <http://www.fao.org/giews/countrybrief/country.jsp?code=TGO>
- Food and Agriculture Organization of the United Nations (FAO), 2009. Plant breeding programs in Togo available on <http://www.fao.org/in-action/plant-breeding/nospartenaires/africa/togo/fr/>
- Food and Agriculture Organization of the United Nations (FAO), 2006. Fertilizer use by crop: In FAO Fertilizer and plant nutrition bulletin n°.17, 108pp, available on <http://www.fao.org/tempref/docrep/fao/009/a0787e/A0787E00.pdf>
<https://www.coordinationsud.org/wp-content/uploads/Innovations-agro--cologiques-Afrique-VEng-VDebray-2015.pdf>

Kohnert, Dirk, 2019. No change in sight - Togo's Political and Socio-Economic Development (2017 – 2019), available on <https://www.econstor.eu/bitstream/10419/191944/1/Kohnert-2019.Togo.BTI-2017-19.AuthorsVersion.pdf>

Programme National d'Investissement Agricole, de Sécurité Alimentaire et Nutritionnelle (PNIASAN), 2018. Plan d'investissement 2017 – 2026, 45pp.

Valentine Debray, Adeline Derkimba and Katia Roesch, 2015. Agroecological Innovations in a Context of Climate Change in Africa, Coordination Sud, 97pp, available on <https://www.coordinationsud.org/wp-content/uploads/Innovations-agro--cologiques-Afrique-VEng-VDebray-2015.pdf>

World Bank, 2017. International Development Association Project Paper on a Proposed Additional Credit in an Amount Equivalent to Euro 18.7 Million (Us\$20 Million Equivalent) to the Republic of Togo for the Agriculture Sector Support Project, 41pp, available on <http://documents.worldbank.org/curated/en/598011492394445446/pdf/TOGO-PP-03282017.pdf>

Action plan for seed system development in Togo

The present action plan, with an estimated total cost of **US \$ 6,000,000**, aims to contribute to the development of a sustainable seed system in Togo. Specifically, it aims to:

- support the development of high-performance varieties;
- facilitate the establishment of robust seed companies in order to improve quality seeds supply to all farmers;
- improve the packaging and traceability of marketed seeds;
- improve the distribution channel to make seeds available to all farmers;
- strengthen the quality control and seed certification system;
- promote the use of improved seeds.

To achieve these objectives, activities have been identified and grouped into three main axes:

- ❖ Varietal development and promotion of new varieties (**US \$ 2,250,000**),
- ❖ Support for the establishment of seed companies (**US \$ 3,400,000**),
- ❖ strengthening the quality control and seed certification system (**US \$ 350,000**).

Axis 1: Varietal Development (US \$ 2,250,000)

The objective of this axis is to make available to all actors of the sector, performant varieties adapted to their needs. In other words, it aims at offering to farmers a wide range of performant varieties, adapted to the various agro-ecological zones taking into account the current context of climate change.

Component 1: Development of new varieties

Objectives	Develop and make available high yielding varieties
Description of the action	Experiments (on-station and on-farm variety testing will be conducted for already available varieties; Breeding activities for new varieties development will be carried out in order to identify high yielding varieties of rice, maize, sorghum, groundnuts, cowpea and soybeans or sesame, adapted to agro-ecological conditions and which meet the consumers' preferences. The production of these varieties will have costs that allow farmers to make their farms more profitable. Hybrids will be preferred especially for maize and rice.
Activities to be conducted	<ul style="list-style-type: none"> ✓ Identification of the specific needs of farmers; ✓ Identification of genes sources and introduction of performant varieties; ✓ Multi-locational trials and on-farm trials conduction; ✓ DUS and VCU testing of new varieties; ✓ Registration of emerging varieties in the national catalog; ✓ Production of breeder, pre-basic and basic seeds. ✓ Training of researchers (6 at master level and 2 at Ph.D. level)
Outputs 1.1	<ul style="list-style-type: none"> ✓ 3 varieties of maize with a minimum yield of 8 t / ha are listed in the catalog and promoted; ✓ 3 rice varieties with a minimum yield of 10 t / ha are listed in the catalogue and promoted; ✓ 2 varieties of sorghum with a minimum yield of 8 t / ha are listed and promoted; ✓ 2 soybean varieties with a minimum yield of 6 t / ha are listed in the catalog and promoted; ✓ 2 varieties of sesame minimum yield of 5 t / ha are registered in the catalogue and promoted; ✓ 2 groundnut varieties with a minimum yield of 5 t / ha are listed in the catalogue and promoted; ✓ 2 varieties of cowpeas with a minimum yield of 5 t / ha are listed in the catalogue and promoted ✓ 2 fonio varieties with a minimum yield of 5 t / ha are listed in the catalogue and promoted; ✓ vegetable crops are promoted (Jute mallow, tomatoes, peppers, okra)
Achievement indicators 1.1	<ul style="list-style-type: none"> ✓ Number of new varieties listed in the catalog and promoted by speculation; ✓ Performance of new varieties in farmer environment.
Estimated cost (5 years)	US \$ 1,250,000
Responsible	ITRA
Partners	DSP, PNIASAN projects, PTF, ESA, ICAT, DPV, OP, DFV, NGOs, CPC, CRAs, CTOP, RNPSC-T, CNSP
Technical and financial partner	Seed systems group (SSG)

Component 2: Promotion of the new varieties

Objectives	<ul style="list-style-type: none"> ✓ Promote the adoption of the new varieties, their seed multiplication and use for each crop; ✓ improve exchanges on the various topics related to the seed activity among actors of the sector.
Description of the action	It is about deploying effective measures and tools for the adoption of new varieties by farmers. These tools include the setting up of demonstration plots, the organization of days of promotion of new varieties and seed multipliers' profession, support the running of a framework of consultation which can organize periodically, meetings between the seed companies, the farmers and other end-users, researchers and extension agents to enable them discover the panel of varieties offered and promote their activities
Activities to be conducted	<ul style="list-style-type: none"> ✓ setting up demonstration plots; ✓ organization of exchange visits around demonstration plots; ✓ organization of agricultural virtual school sessions for farmers; ✓ organization of promotion days (Fair) for the promotion of new varieties and the profession of seed companies; ✓ support to the functioning of a consultation framework between actors; ✓ organization of a day of promotion of the seed profession every two years.
Outputs 1.2	varieties in the promotion are known to all farmers and consumers
Achievement indicators1.2	<ul style="list-style-type: none"> ✓ number of demonstration plots installed; ✓ number of fairs and salon organized; ✓ seed volume exchanged between seed multipliers and farmers.
Estimated cost (5 years)	US \$ 1,000,000
Responsible	ICAT et NGOs
Partners	ICAT, ITRA, DSP, NGOs, CPC, CRAs, CTOP, RNPSC-T, CNSP
Technical and financial partner	Seed systems group (SSG)

Axis 2: Support for the emergence of seed companies (US \$ 3,400,000)

The objective of this axis is to support the emergence of six (06) seed companies.

Component 1: Support for setting up and running businesses

Objectives	This component aims to set up and support the equipment and operation of six (6) seed companies that will be able to produce at least 3,000 tons of seeds per year from the third year.
Description of the action	It involves identifying and supporting six promoters and providing them with support for setting up seed companies. This support will include, among other things, training in agricultural entrepreneurship, the organization of study tours and the setting up of business plans (taking into account the environmental and social aspects), the negotiation of financing, coaching and follow-up of companies over a period of 2 years. It will also cover the acquisition of equipment, the organization of production and packaging, storage.
Activities to be conducted	<ul style="list-style-type: none"> ✓ Six (06) promoters with their business plans are selected; ✓ Promoters are equipped with entrepreneurial techniques; ✓ Promoters are imbued with similar experiences carried out in other countries; ✓ Business plans are finalized, ✓ The funding is mobilized; ✓ Companies are created, legally constituted, functional and produce seeds ✓ The seeds produced are packaged according to the standards
Outputs 2.1	<ul style="list-style-type: none"> ✓ Selection of promoters; ✓ Identification and selection of the technical assistant (cabinet) to coach the six companies; ✓ Training of promoters in agricultural entrepreneurship; ✓ Study tour of promoters and some DSP executives in Kenya and Tanzania and Zimbabwe; ✓ Finalization of business plans; ✓ Negotiation of funding; ✓ Legal constitution of companies; ✓ Implementation of management procedures ✓ Support for the definition of profiles and the recruitment of company personnel; ✓ Technical staff training ✓ Support for business equipment; ✓ Training of seed multipliers; ✓ Organization of seed multipliers around seed companies (aggregation); ✓ Certified seed production; ✓ Monitoring and evaluation of business activities.
Achievement indicators 2.1	Number of functional enterprises
Estimated cost (5 years)	US \$ 2,400,000
Responsible	DFTOPA/DSP
Partners	PNIASAN Projects, PTF, ESA, ICAT, DPV, OP, DFV, NGOs, CPC, CRAs, CTOP, RNPSC-T, CNSP, Cabinets, MIFA
Technical and financial partner	Seed systems group (SSG)

Component 2: Support to seeds distribution

Objectives	This component aims to support the establishment of at least 500 additional seed shops in order to bring seeds closer to the farmers who are the end-users
Description of the action	Identify and support the establishment of seed shops in rural areas by training and installing about 500 additional seed and fertilizer retailers
Activities to be conducted	<ul style="list-style-type: none"> ✓ at least 500 retailers are trained and equipped ✓ at least 500 retailers are installed and distribute quality seeds
Outputs 2.2	<ul style="list-style-type: none"> ✓ Identification and selection of retailers; ✓ Training of selected retailers ✓ Support for equipment and seed distribution equipment to retailers (mobile kiosks/tricycles and fixed kiosks/booths);
Achievement indicators 2.2	Number of promoted and functional distribution points
Estimated cost (5 years)	US \$ 1,000,000
Responsible	DFTOPA/DSP
Partners	PNIASAN Projects, PTF, ESA, ICAT, DPV, OP, DFV, ONG, CPC, CRAs, CTOP, RNPSC-T, CNSP, MIFA
Technical and financial partner	Seed systems group (SSG)

Axe 3. Strengthening quality control and certification competencies (US \$ 350,000)

The aim is to strengthen the national quality control and seed certification system in order to ensure seed quality for end-users.

Component 3.1. Strengthening the national seed testing laboratory

Objective	Have a laboratory capable of performing all the quality control tests of seeds according to ISTA standards
Description of the action	This involves building the capacity of the laboratory and analysts and having the national seed testing laboratory accredited by ISTA.
Activities to be conducted	<ul style="list-style-type: none"> ✓ Support the accreditation of the National Seed Testing Laboratory by ISTA; ✓ Training of two (02) seed technology executives, master level
Outputs 3.1	A laboratory of seed analyses to ISTA standards is functional
Achievement indicators 3.1	<ul style="list-style-type: none"> ✓ Accreditation of the laboratory by ISTA; ✓ Number of trained staffs (masters) in seed technologies
Estimated cost (5 years)	US\$ 100,000
Responsible	DSP
Partners	ISTA, ITRA
Technical and financial partner	Seed systems group (SSG)

Component 3.2. Strengthen field inspection of seed production plots and provide marketing control

Objectives	<ul style="list-style-type: none"> ✓ Ensure compliance with field production standards and help ensure seed quality ✓ Guarantee the good quality of the seeds after the certification and on the different points of sale and stores
Description of the action	This will include strengthening the seed management's capacity for quality control in the field and marketing.
Activities to be conducted	<ul style="list-style-type: none"> ✓ Train / recycle seed inspectors on production and inspection technologies for hybrid seed plots; ✓ Support the acquisition of certification labels with code ("stach card") ✓ Supports inspection work ✓ Develop the technical sheets of the varieties promoted; ✓ Update the manual of seed quality control procedures; ✓ Update the registration procedure manual and variety registration; ✓ Update the technical regulations for the examination of DHS and VAT tests ✓ Support the updating and editing of the national catalog of species and plant varieties.
Outputs 3.2	<ul style="list-style-type: none"> ✓ seed inspectors are trained in production and inspection technologies for hybrid seed plots; ✓ the factsheets of the varieties promoted are developed; ✓ the seed quality control procedure manual; the registration procedure manual and the registration of varieties as well as the technical regulations for examination of the DHS and VAT tests are updated. ✓ The national catalog of species and plant varieties is updated and published in sufficient numbers.
Achievement indicators 3.2	<ul style="list-style-type: none"> ✓ number of training sessions, training topics and the number of trained inspectors; ✓ number of procedures manuals and data sheets developed; ✓ number of fact sheets developed ✓ availability of the official catalog of plant species and varieties;
Estimated cost (5 years)	US \$ 250,000
Responsible	DSP
Partners	PNIASAN Projects, PTF, ESA, ICAT, DPV, OP, DFV, NGOs, CPC, CRAs, CTOP, RNPSC-T, CNSP, MIFA
Technical and financial partner	Seed systems group (SSG)