



Burkina Faso Country Report 2020

The African Seed Access Index

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TASAI
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LIST OF ACRONYMS:

ANES-BF	Association National des Entreprises Semencières au Burkina Faso/ National Seed Companies Association in Burkina Faso
CGIAR	Consultative Group on International Agricultural Research
CNS	Comité National de Semences
DGPV	Direction Générale de la Production Végétale/ General Directorate of Plant Production
DUS	Distinctness, Uniformity and Stability
ECOWAS	Economic Community of West African States
INERA	Institut de l'Environnement et de Recherches Agricoles/ Institute of Environnement and Agricultural research
ISTA	International Seed Testing Association
MAAH	Ministère de l'Agriculture et des Aménagements Hydro-agricoles/ Ministry of Agriculture and Hydro-agricultural Developments
MESRSI	Ministère de l'Enseignement Supérieur, de la Recherche Scientifique et de l'Innovation/ Ministry of Higher Education, Scientific Research and Innovation
MINEFID	Ministre de l'Economie, des Finances et du Développement/ Minister of Economy, Finance and Development
MICIA	Ministère du Commerce, de l'Industrie et de l'Artisanat/ Ministry of Commerce, Industry and Handicrafts
OECD	Organization for Economic Co-operation and Development
SCHV	Sous-Comité d'Homologation des Variétés agricoles
SNS	Service National des Semences/ Seed National Service
UNPS-B	Union National des Producteurs Semenciers du Burkina/ National Seed producers in Burkina
VCU	Value for Cultivation and Use

INTRODUCTION

The increased use of productivity-enhancing technologies, including mechanization, irrigation, fertilizer and improved seed, is critical to improving food and nutritional security across Africa. For field crops, a competitive seed sector is key to ensuring the timely availability of high-quality seed of improved, appropriate varieties at affordable prices for smallholder farmers. Improved seed can deliver state-of-the-art technology to farmers including higher yields, disease and pest resistance, climate change adaptation, reduced post-harvest losses, and improved nutrition. To deliver these benefits, The African Seed Access Index (TASAI) seeks to encourage public policymakers and development agencies to create and maintain enabling environments that will accelerate the development of competitive formal seed systems serving smallholder farmers in Africa.

This report summarizes the key findings of the study conducted by TASAI in 2020 to appraise the structure and economic performance of Burkina Faso's seed sector. TASAI studies focus on the four grain and legume crops important to a country's food and nutritional security (the "four focus crops"). In Burkina Faso, these crops are maize, rice, sorghum and cowpea, the cultivation of which covers about 66% of the country's arable land.¹

OVERVIEW OF BURKINA FASO'S FORMAL SEED INDUSTRY

Like most other African countries, Burkina Faso's seed industry consists of two systems: the informal and formal sectors. This brief focuses almost exclusively on the formal seed sector.

The informal sector refers to a system in which seed is produced, maintained, and distributed through informal networks. These activities "tend to be decentralized and might revolve around local entrepreneurship, seed banking, community-based seed production, or seed villages" (McGuire & Sperling, 2016). In many cases, farmers keep seed from the harvest and exchange it with neighbors, relatives, and through rural markets. Seed from this system is of variable varietal purity, physical and sanitary quality.² In Burkina Faso, about 85% of the smallholder farmers still rely on the informal seed sector for seed for most crops (Sanou, Savadogo and Sakurai, 2017).

The formal sector is a structured and regulated value chain for the production of improved seed varieties. This process involves many actors and institutions, from breeding varieties to the multiplication, processing, and distribution of certified seed. The different stages of improved seed production are regulated by governments, based on approved regulations and standards. The sale of seed from this system takes place through limited distribution channels such as registered seed growers/companies and agro-dealers. This system produces seed of the highest varietal purity, physical and sanitary quality. The formal sector focuses on breeding and evaluating improved varieties, as well as producing and selling certified seed. The utilization rate of certified seed in Burkina Faso is very low - about 15% for maize seed (Sanou, Savadogo and Sakurai, 2017). There is no reliable data for the other three crops.



1 FAOSTAT <http://www.fao.org/faostat/en/#data/QC>

2 See seed system definitions at <https://www.agrilinks.org/post/seed-system-definitions>



Table 1 lists the agencies in charge of various aspects of Burkina Faso's seed industry. Variety development, as well as maintenance of early generation seeds (EGS) (breeder and foundation seeds), fall within the remit of the *Institut de l'Environnement et de Recherches Agricoles* (INERA). Seed quality control, inspection and certification is conducted by the *Service National des Semences* (SNS), which is under the *Ministère de l'Agriculture et des Aménagements Hydro-agricoles* (MAAH). The *Comité National de Semences* (CNS) is in charge of variety release and registration. Seed production and marketing are conducted by seed companies, seed co-operatives and individual seed producers. The *Association Nationale des Entreprises Semencières au Burkina Faso* (ANES-BF) is the national seed association which brings together the seed companies under one umbrella. The ANES-BF serves as the platform for the private sector in the seed industry.

Table 1: Key players in Burkina Faso's formal seed sector

ROLE	KEY PLAYERS
Research and breeding	Institut de l'Environnement et de Recherches Agricoles (INERA), Consultative Group on International Agricultural Research (CGIAR) centres
Variety release and regulation	Comité National de Semences (CNS), Service National des Semences (SNS)
Seed production and processing	Individual seed producers, seed co-operatives, seed companies
Education, training, and extension	Association Nationale des Entreprises Semencières au Burkina Faso (ANES-BF), Union National des Producteurs Semenciers du Burkina (UNPS-B), Ministère de l'Agriculture et des Aménagements Hydro-agricoles (MAAH), Non-Governmental Organizations (NGOs), extension officers
Distribution and sales	ANES-BF, UNPS-B, MAAH, Seed cooperatives, seed companies, agro-dealers, NGOs



METHODS

TASAI studies cover 22 indicators divided into 5 categories: **Research and Development, Industry Competitiveness, Seed Policy and Regulations, Institutional Support,** and **Service to Smallholder Farmers**³ (Table 2). In most TASAI studies, the bulk of the performance data reported comes from the year preceding the year in which the study is conducted (“the study year”) because that is the year for which the most recent data are available. Accordingly, the data reported in this Country Report pertain primarily to 2019; however, whenever 2020 data were available, they are included in the report.

Table 2: TASAI Indicators

	Crop-specific	Impact on seed access
A RESEARCH AND DEVELOPMENT		
A1 Adequacy of active breeders	Yes	+
A2 Number of varieties released	Yes	+
A3 Number of varieties with ‘special’ attributes/ features	Yes	+
A4 Availability of basic seed	Yes	+
B INDUSTRY COMPETITIVENESS		
B1 Number of active seed companies/producers	Yes	+
B2 Quantity of seed produced and sold	Yes	+
B3 Number of varieties sold and dropped	Yes	+
B4 Average age of varieties sold	Yes	-
B5 Market concentration	Yes	-
B6 Market share of state-owned seed company	Yes	-
B7 Efficiency of seed import/export processes	Yes	+
C SEED POLICY AND REGULATIONS		
C1 Length and cost of variety release process	Yes	-
C2 Status and implementation of national seed policy framework	No	+/-
C3 Harmonization with regional regulations	No	+
C4 Adequacy of efforts to eradicate counterfeit seed	No	+
C5 Use of government subsidies	No	+/-
D INSTITUTIONAL SUPPORT		
D1 Performance of national seed association	No	+
D2 Adequacy of seed inspection services	No	+
E SERVICE TO SMALLHOLDER FARMERS		
E1 Availability of agricultural extension services for smallholder farmers	No	+
E2 Concentration of agro-dealer network	No	+
E3 Availability of seed in small packages	Yes	+
E4 Seed-to-grain price ratio at planting time	Yes	-

³ The list of indicators and recent TASAI data are available at https://tasai.org/wp-content/uploads/TASAI-Appendix_CURRENT.pdf



To show progress, the Country Report draws comparisons to the findings of the 2018 TASAI Burkina Faso study (with performance data primarily from 2017). In addition, since TASAI has conducted similar studies in 20 other African countries, this report also draws relevant cross-country comparisons.

Using TASAI survey tools, data collection focused on three key seed industry players: seed growers, plant breeders, and representatives of government entities active in the country's seed sector. Of these, seed growers were the primary source of information. For several indicators, TASAI supplemented quantitative data with self-reported average levels of industry satisfaction on a 0-100 scale, with the following brackets: 0-19.99% **extremely poor**, 20-39.99% **poor**, 40-59.99% **fair**, 60-79.99% **good**, and 80-100% **excellent**.

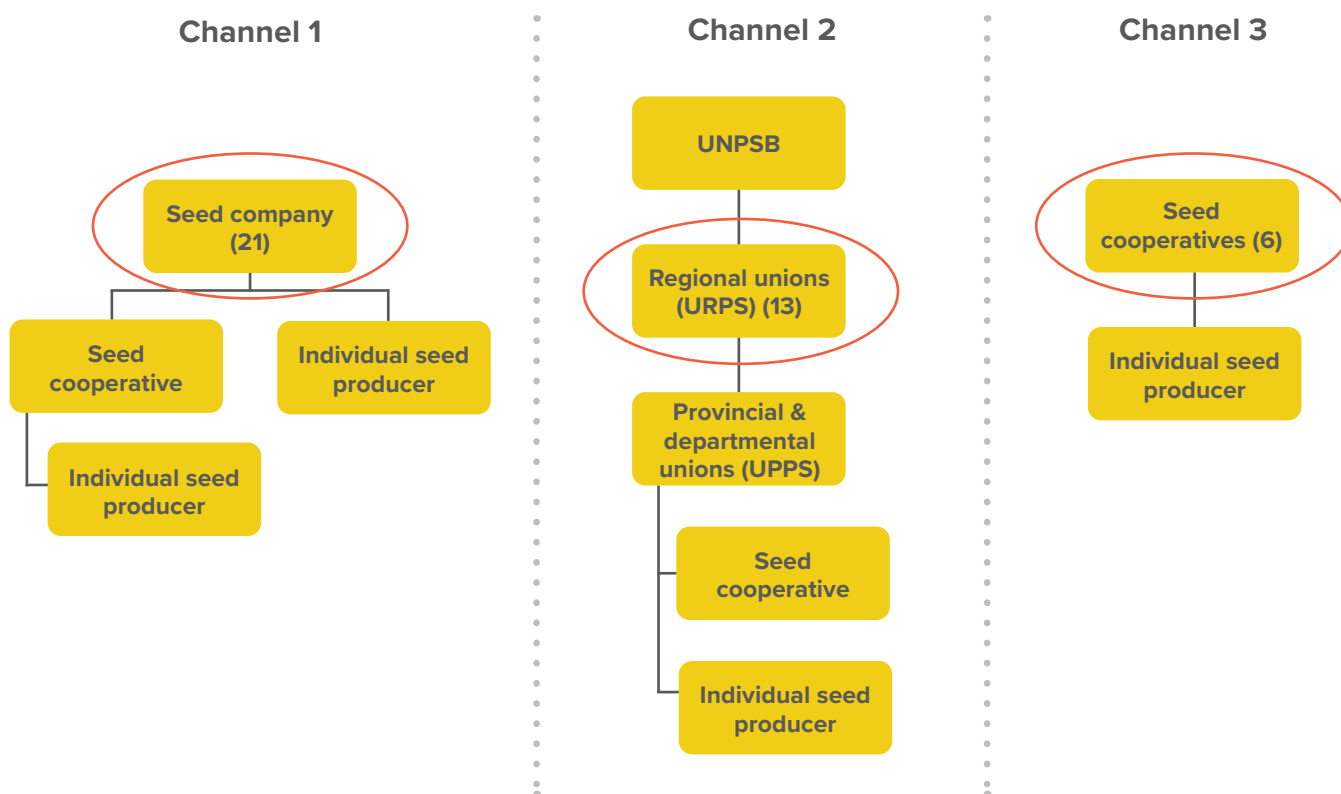
In Burkina Faso, certified seed is sold through three channels (Figure 1):

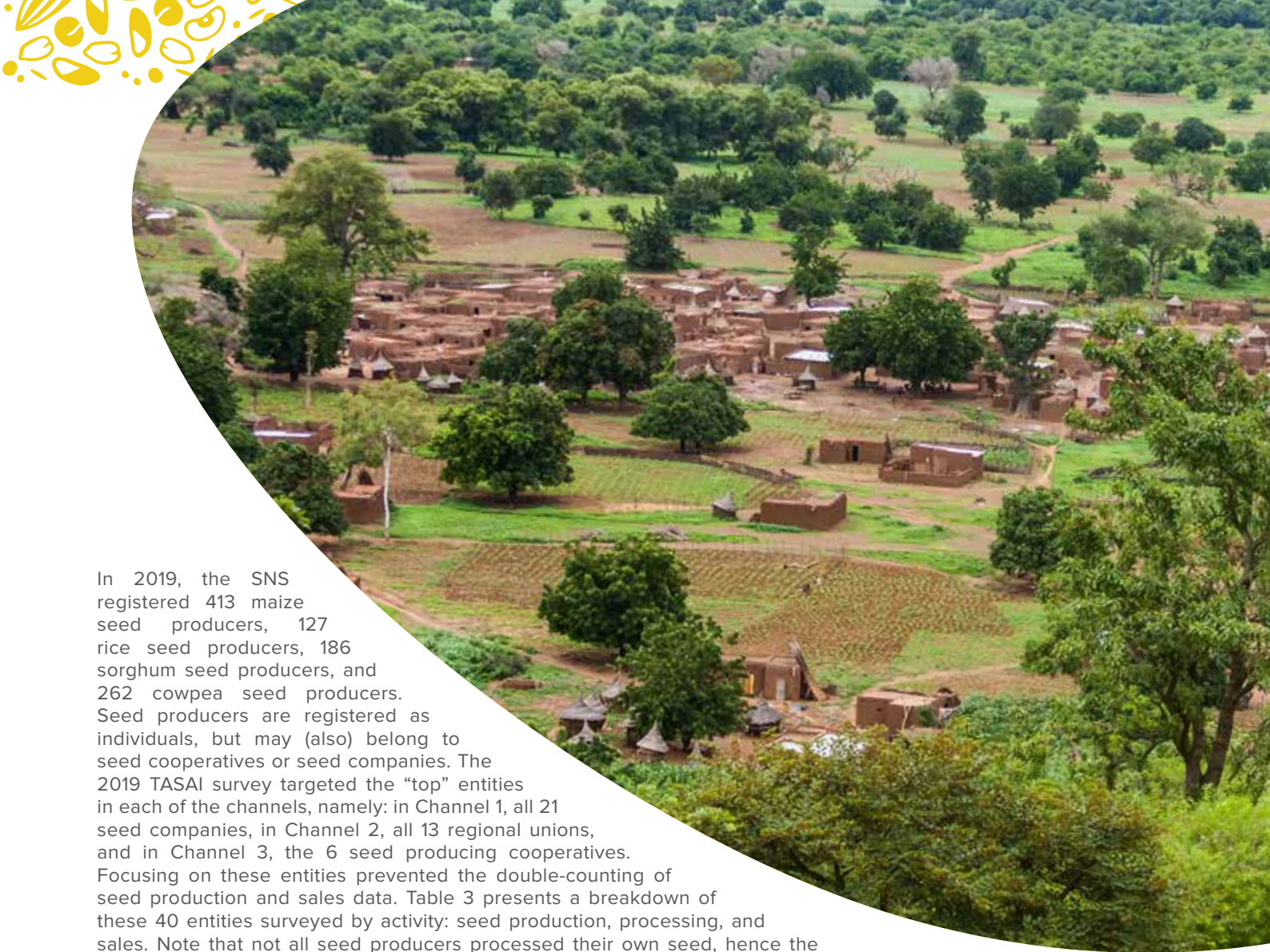
- Channel 1: seed companies. The companies source seed from seed co-operatives and individual seed producers,

some of whom serve as out-growers for the seed companies. In 2019, Burkina Faso had 21 active seed companies..

- Channel 2: the *Union National des Producteurs Semenciers du Burkina* (UNPS-B) and its affiliates. The UNPS-B is the national association of seed producers, whose membership includes provincial and regional unions. At the base of this channel is the individual seed producer, who is a member of a village group or cooperative. The latter join together to form provincial unions of seed producers, which in turn form regional unions. The country has 13 regional unions, corresponding with the country's 13 regions. The UNPS-B is formed from the representatives of the regional unions. The UNPS-B does not purchase seed; instead it collects seed from the seed cooperatives through the provincial and regional unions and distributes it to the main buyers (government, farmers, and NGOs).
- Channel 3: seed cooperatives. This channel consists of a few seed cooperatives that source seed from individual seed producers but do not sell through the UNPS-B or seed companies. Instead, the cooperatives sell the seed themselves.

Figure 1. Seed distribution channels in Burkina Faso









In 2019, the SNS registered 413 maize seed producers, 127 rice seed producers, 186 sorghum seed producers, and 262 cowpea seed producers. Seed producers are registered as individuals, but may (also) belong to seed cooperatives or seed companies. The 2019 TASAI survey targeted the “top” entities in each of the channels, namely: in Channel 1, all 21 seed companies, in Channel 2, all 13 regional unions, and in Channel 3, the 6 seed producing cooperatives. Focusing on these entities prevented the double-counting of seed production and sales data. Table 3 presents a breakdown of these 40 entities surveyed by activity: seed production, processing, and sales. Note that not all seed producers processed their own seed, hence the discrepancy between the number of producers that produced and processed seed.

In addition to the seed producers listed above, the present study also surveyed the seven public agricultural research institutions and universities in the country and the relevant directorates in the MAAH.

Table 3. Breakdown of respondents by activity and crop (2019)

Crop	Number of seed producers examined for the present study (out of 40 respondents) who:		
	Produced seed	Processed seed	Sold seed
 Maize	36	35	36
 Rice	35	33	35
 Sorghum	32	30	32
 Cowpea	33	31	32

RESEARCH AND DEVELOPMENT

NUMBER OF ACTIVE BREEDERS

A well-functioning seed system needs vibrant public and private breeding programs to develop improved varieties that respond to farmer and consumer needs. The number of active breeders is indicative of the level of investment in research and development.⁴ In addition to tracking the number of breeders working on the four focus crops, this study also measures the level of satisfaction reported by producers (seed companies, cooperatives and individual producers) with the public breeding programs. The latter often reflects the ability of active breeders in public institutions to produce new varieties.

In Burkina Faso, crop improvement and variety development are undertaken by INERA and universities. INERA works on all four focus crops – maize, rice, sorghum, and cowpea. The universities focus on underutilized crops, such as okra, taro and fonio. However, at the time of the study, the universities were not very active in variety development.

In 2019, Burkina Faso had 14 active breeders for the four crops, all employed by INERA (none of the private seed companies employed breeders in 2019). There were 6 cowpea breeders, 4 sorghum breeders, 3 rice breeders, and 2 maize breeders, listed in Table 4. One breeder works on both rice and sorghum. Of these, 11 breeders had doctoral degrees, while the remaining 3 had masters' degrees. Only 4 of the 14 active breeders were female – 2 each in the sorghum and cowpea breeding programs. When compared to the previous TASAI study in 2017 (Waithaka et al., 2019a), the number of active breeders in Burkina Faso has increased from 9 to 14, as 2 breeders joined the sorghum breeding program and 4 breeders joined the cowpea breeding program.

Seed producers⁵ were very satisfied with the adequacy of breeders. Data for 2017 is presented in Table 4 along with data from 2019. Between 2017 and 2019, satisfaction ratings given by seed producers remained “excellent” for sorghum and cowpea, while satisfaction ratings for rice improved from “good” in 2017 to “excellent” in 2019. In the same period, satisfaction with maize breeders declined slightly.

4 TASAI studies define an “active breeder” as a breeder who is currently engaged in breeding/maintaining a variety or a breeder who had either developed and released at least one variety or was developing a variety of the crop of interest at the time of the TASAI study.

5 For purposes of this study, “seed producer” refers to seed companies, cooperatives and individual producers. A distinction is made for each category when applicable.

Table 4: Number and adequacy of active breeders in Burkina Faso

Crop	Number of active breeders in 2019		Total number of active breeders		Satisfaction Rating (out of 100%)	
	Public	Private	2017	2019	2017	2019
Maize	2	0	2	2	80	70
Rice	3	0	3	3	60	80
Sorghum	4	0	2	4	80	80
Cowpea	6	0	2	6	80	80
Total	14⁶	0	9	14		

6 One breeder works on both rice and sorghum.





VARIETIES RELEASED IN THE LAST THREE YEARS

The number of varieties released measures crop-specific outputs from the variety development and release system. The greater the number of varieties released in a country—counted across the prior three years—the higher the chances of enhancing smallholders’ access to improved seed. In addition to higher yields, new varieties often carry desired traits such as climate smartness, disease/pest resistance, and nutrition en-hancements.

In Burkina Faso, a total of 18 varieties were released between 2017 and 2019 for the four crops: 4 for rice, 7 for sorghum and 7 for cowpea. No maize varieties were released during this period. Table 5 shows the number of varieties released since 2014, when the variety release process was formalized. The variety release process in Burkina Faso can be divided into two phases – before and after 2014.

Table 5: Number of varieties released during 2014-2019

Year	Maize		Rice		Sorghum		Cowpea	
	Annual Counts	3-year Moving Average	Annual Counts	3-year Moving Average	Annual Counts	3-year Moving Average	Annual Counts	3-year Moving Average
Up to 2014	30	-	43	-	27	-	19	-
2015	0	-	0	-	0	-	0	-
2016	0	10	0	14	0	9	0	6
2017	0	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0	0
2019	0	0	4	1	7	2	7	2

Overview of variety release process before 2014: Burkina Faso had no formal variety release process prior to 2014. A variety was released once it had been developed by a breeder and its characteristics were listed in a breeders’ report. The breeder would then make the variety available for commercialization. The *Comité National de Semences* (CNS) started to formalize the process in 2014, with support from the Food and Agriculture Organization of the United Nations. The formalization of the variety release process was carried out in accordance with the seed law, which was passed in 2010. In order to register the varieties that had been released prior to 2014, a team of experts compiled a list of all varieties that had been developed and commercialized by breeders. This was an exceptional measure that allowed for the registration of these varieties without following the variety release process as prescribed in the seed law. This process resulted in the first national catalogue of plant species.

Overview of the variety release process after 2014: Since 2014, any new variety is expected to follow the variety release process outlined in law 10-2006 AN (L’Assemblée Nationale, 2006). The CNS organized a two-day workshop on the 28th and 29th of December 2017 to explain the process and requirements for variety release and registration to breeders. This process includes the conduct of both Distinctness Uniformity and Stability (DUS) and Value for Cultivation and Use (VCU) tests. Once the variety is released, it is registered in the national catalogue. The catalogue is officially updated every five years, though varieties are approved every year. Since 2014, only 18 varieties have been released across the four crops. All of these releases took place in 2019. The main reason for the delays in the variety release process is a lack of financial resources. The varietal release committee lacks the resources to assess applications for variety release, which require, among other things, field visits. As a result, several varieties are currently waiting to be evaluated before they can be released.





VARIETIES WITH SPECIAL FEATURES

Varieties may have special characteristics, for instance climate-smart, use-related (e.g. fast-cooking or nutri-tion-enhanced), or industry-demanded features. Examples of climate-smart features are drought tolerance, early maturity, or extra-early maturity. The CNS has not publicly released the latest version of the National Variety Catalogue, since it is yet to be signed by the President of the CNS. As such, there is no publicly available source of information on the features of the 18 varieties released in 2019.

NUMBER OF VARIETIES SOLD IN 2019

An increase in the number of varieties sold in a country often reflects an increased choice of varieties available to farmers. In 2019, 11 varieties of rice, maize and sorghum seed and 9 varieties of cowpea seed were sold. Table 6 shows lists the most popular varieties of each crop, as determined by the number of producers selling a particular variety. For instance, the most popular variety of maize seed, Barka, was sold by 83% of maize seed growers.

Table 6: Name and age of popular varieties sold

Crop	Number of varieties sold in 2019	Name of popular variety sold	% of growers selling the variety	Age of variety (years) in 2019	Average Age of Popular Varieties
Maize	11	Barka	83%	12	17
		Wari	72%	12	
		SR21	47%	18	
		FBC6	47%	20	
		Masongo	42%	21	
Rice	11	FKR19	71%	35	16
		FKR62N	74%	13	
		TS2	43%	5	
		FKR45N	34%	13	
Sorghum	11	Orylux6	29%	<1	24
		Kapèlga	84%	18	
		Sarioso14	34%	27	
Cowpea	9	Sarioso11	31%	27	12
		Flagnon	19%	unknown	
		Komcallé	91%	7	
		Tiligré	69%	7	
		Nafi	38%	7	
		KVx61-1	22%	31	
		Yiisyandé	22%	6	

VARIETIES DROPPED OR NO LONGER MAINTAINED

A vibrant seed sector is expected to retire old varieties and discontinue varieties that fail to meet farmer needs as newer and better varieties become available. This indicator tracks any variety dropped (i.e., no longer sold) by at least one seed company in the last three years.⁷ The TASAI study tracks the dropped varieties, and for each dropped variety, we also capture the reason(s) why it was dropped.

Between 2010 and 2019, seed producers dropped 13 varieties of rice, 9 varieties of cowpea and maize each, and 4 sorghum varieties. Although INERA still maintains the dropped varieties, it only produces basic and breeder seed on demand for seed producers.

Seed producers' reasons for dropping varieties vary by crop and region. The reasons include poor yield performance, late maturity, high susceptibility to pests and disease (for cowpea varieties), no longer maintained by breeders and low farmer demand. The insufficient supply of basic seed was one of the major reasons reported during the 2017 TASAI country study. This is no longer the case in 2019, since the availability of basic seed has improved for all crops, as shown in the section on availability of basic seed.

⁷ It is important to note that this does not mean the variety is no longer on the market, as other companies may still sell it.







AVERAGE AGE OF VARIETIES SOLD

In vibrant seed systems, farmers regularly replace old varieties with new ones. In many African countries, old varieties persist, despite the fact that newer varieties—bred for traits that respond to demands made by farmers, consumers, and industry—typically outperform the old. TASAI tracks the average age of varieties by crop. A lower average age of varieties signals higher rates of variety turnover and innovation.

Table 7 shows the average age of varieties sold in 2019. The average age is calculated from the year of release to 2019, and is similar for all four focus crops. The cowpea and rice varieties are slightly younger (12 and 13 years, respectively) while maize and sorghum varieties are older (18 and 17 years, respectively). The age of the varieties sold for all the crops ranges from 5 to 35 years old. The new varieties released in 2019 are not yet commercialized. Once the 2019 varieties are commercialized, the average ages will likely drop significantly. It is worth noting that despite the old age of some of the popular varieties, they are still preferred to farmers.

Table 7. Average age of varieties sold (all vs. popular varieties)

Crop	Number of varieties sold in 2019	Average of all varieties sold	Average Age of Popular Varieties
 Maize	11	18	17
 Rice	11	13	16
 Sorghum	11	17	24
 Cowpea	9	12	12

SOURCES AND AVAILABILITY OF FOUNDATION (BASIC) SEED

Seed growers use basic seed to produce certified seed for sale to farmers. In many African countries, limited access to basic seed from public research institutions often limits the ability of seed companies to scale up production. Article 6 of the Seed Law No. 010/2006 only permits the national research institutes to produce basic seed. As a result, INERA is the only supplier of basic seed in Burkina Faso. There is no fixed process for seed producers to obtain basic seed from INERA. Basic seed can be obtained by any seed producer who has the means to pay for it. INERA does encourage seed producers to place their orders two to three months in advance, but only a few companies generally do this.

Sources of basic seed: INERA is the only institution in Burkina Faso that produces basic seed for the four focus crops. In 2019, INERA produced 191.2 MT of maize, 87.3 MT of rice, 61.7 MT of cowpea and 25.1 MT of sorghum (Table 8). The other research institutions in the country, the universities, do not have active breeding programs, and no seed company conducts research on crop improvement. However, one seed company obtained basic rice seed for the ORULYX6 variety from Africa Rice, an international research institution based in Cote d'Ivoire.



Table 8: Volume of basic seed produced

Crop	Volume of basic seed (MT) produced by INERA in 2019
Maize	191.2
Rice	87.3
Sorghum	25.1
Cowpea	61.7

Source: INERA (2019)

Seed producers' assessment of the availability of basic seed:

Seed producers were very satisfied with the quality, quantity, and timeliness of the supply of basic seed for maize, rice, and cowpea. For these three crops, seed producers rate their satisfaction with the quality of basic seed as “excellent” (above 80%). Between 88% percent (for cowpea) and 94 percent (for maize) of seed producers surveyed received the quantity of basic seed that they requested. Moreover, 88% of seed companies reported that they received the requested basic seed in time (Table 9). The ratings for sorghum basic seed were lower across all three parameters. This is because some of the basic seed for sorghum was not certified by the SNS in 2019 as it did not conform to the regulatory standards.

The seed producers' overall satisfaction with the availability of basic seed has improved since 2017 for all crops. The improvement is greater for maize (from 63% to 81%) and cowpea basic seed (from 64% to 75%) than for rice basic seed (from 67% to 70%), as indicated in Figure 2. There is hardly any change in seed companies' satisfaction with the availability of sorghum basic seed. The improvements for the other three crops are attributed to three AGRA-funded projects that have supported the production and supply of breeder and basic seed for the four crops since 2018. The projects for each of these crops are implemented by a consortium of multiple organizations from both the public and private sector. Two of the projects include three crops (maize, cowpea, sorghum). These are “Scaling up Maize and Cowpea Value Chains for Improved Incomes and Food Security for Smallholder Farmers in Cascades and Hauts Bassins Regions of Burkina Faso” and “Improving Incomes and Food Security of Smallholder Farmers in the Boucle du Mouhoun and Centre-Ouest regions of Burkina Faso”. These projects work towards the establishment of functional market systems for maize, sorghum and cowpea. The third project focuses on rice and is titled “Selling Quality Rice for a Better Income – Consortium Bagré”. Its aim is to support the development of a competitive and inclusive rice value chain. The project aims to increase the income of 50,000 small-scale producers in the center-east region of Burkina Faso.

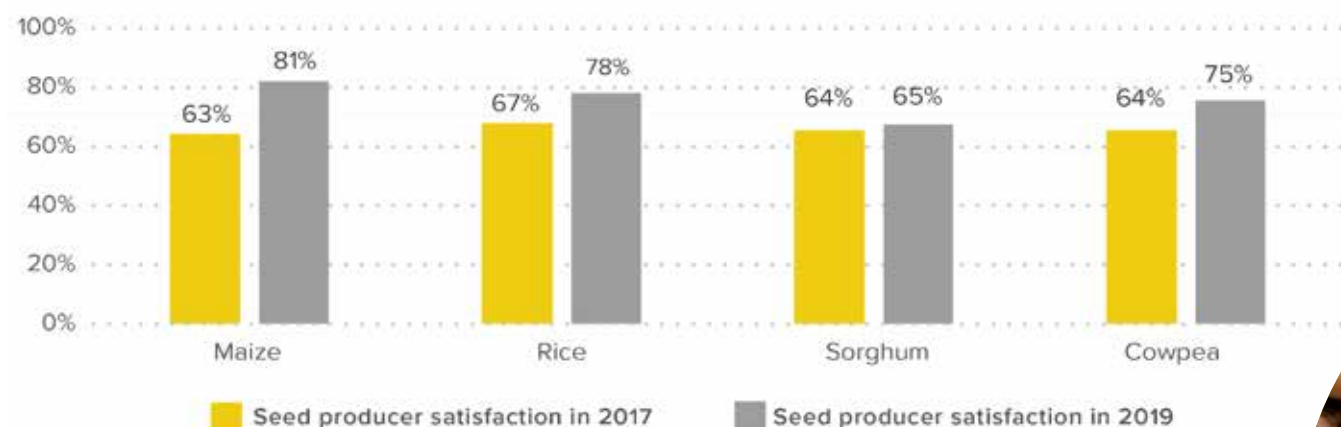
Table 9: Rating of quality, quantity, and timeliness of basic seed (2019)

Aspect of availability	Maize (n=36)	Rice (n=36)	Sorghum (n=32)	Cowpea (n=33)
Quality of basic seed (out of 100%)*	84	90	77	80
Received the quantity requested (% yes)	94	89	66	88
Timeliness of delivery (% yes)	92	91	78	88

*Opinion rating.

extremely poor poor fair good excellent

Figure 2: Comparison of overall ratings of availability of basic seed



INDUSTRY COMPETITIVENESS

NUMBER OF ACTIVE SEED PRODUCERS

Competition breeds excellence: the presence of more active seed producers increases competition and creates incentives for producers to innovate and improve service delivery. A vibrant seed sector depends on a robust private sector in which seed producers invest in developing, producing, processing, and marketing improved varieties to farmers. As outlined under Section 1.1 (Methods), TASAI interviewed 40 seed producers which included 21 seed companies, 13 seed producers representing each of the 13 regional unions, and 6 seed co-operatives.

Table 10 shows the breakdown of the seed companies by crop in 2017 and 2019. The number of seed companies that produced and marketed seed for all four crops increased from 17 in 2017 to 21 in 2019. All 21 seed companies produced and marketed maize seed, in addition to which some of these companies also produced and marketed rice seed (18 companies), sorghum seed (16 companies) and cowpea seed (17 companies).

Table 10: Active seed companies

Crop	No. of seed companies in 2017	No. of seed companies in 2019
Maize	17	21
Rice	16	18
Sorghum	14	16
Cowpea	16	17
Overall	17	21

GENDER IN MANAGEMENT OF SEED BUSINESSES

TASAI also tracks the number of women in management and ownership positions in seed businesses. The government of Burkina Faso passed a National Gender Policy (PNG) in 2009 to demonstrate its political will to address the socio-economic and cultural challenges faced by women across the different sectors of the economy (Ministère de la Promotion de la Femme, 2009).

Table 11 presents the number and percentage of women who manage or own seed companies. Of the 40 seed producers that were surveyed, one company was both owned and managed by a woman, while all other companies were owned and managed by men. The TASAI survey also asked about the gender composition of companies' management. In Burkina Faso, most seed companies are owned by individuals, with one or two additional staff members. Overall, the TASAI survey recorded 113 management positions among the 40 seed entities, of which ten positions (9%) were held by women. Based on these statistics, the seed industry in Burkina Faso is still very much male-dominated. However, the presence of women in management positions, while still limited, gives hope for an increased role of women in the sector.

Table 11: Gender in management of seed companies (2019)

Gender in seed company management	Number	% of total number of active companies
Companies with female top manager (n=40)	1	2.5
Companies with female owner (n=40)	1	2.5
Women in management positions (out of 113 positions in the 40 entities)	10	9
Companies where management consists of at least 50% women (n=40)	1	2.5









PRODUCTION AND SALE OF CERTIFIED SEED

To measure the overall size of a country's seed sector, TASAI tracks the volumes of seed produced and sold for the four focus crops. The data is presented as aggregate quantities (in MT) of certified seed sold in the data collection year, as reported by active seed producers.

Seed production: According to the data collected for this study, the total volume of certified seed produced in 2019 was 8,598 MT of maize seed, 6,617 MT of rice seed, 1,658 MT of sorghum seed, and 766 MT of cowpea seed. These volumes, listed in Table 12, are significantly higher than those indicated by the *Direction Générale de la Production Végétale* (DGPV) government offices. Differences between TASAI data and government data range from 29% for maize seed to 100% for cowpea seed. A possible reason for this discrepancy is that seed producers are not providing accurate data to the government and/or TASAI, but only estimates.

The volume of seed produced in 2019 is higher than the volume of seed produced in 2017. Maize and sorghum production nearly doubled from the 2017 levels. There was a significant increase in rice production, and a modest increase in cowpea production. It is important to note that the TASAI sampling methodology in 2017 differed from that employed for the 2019 study. In 2019, sampling focused on companies, regional unions, and seed cooperatives, with a total sample size of 40 entities. In 2017, the sample size was 63 and includes all the seed companies, 13 seed cooperatives and 33 individual seed producers, some of whom were representatives of the regional seed unions. Whereas in 2017, all individual producers were counted, whereas in 2019, they were only counted if they were representatives of the regional unions.

Table 12: Seed production and sales

Crop	Seed production (MT) (TASAI data 2017)	Seed production (MT) (TASAI data 2019)	Seed production (MT) (government data 2019)	Seed sales (MT) (TASAI data 2019)
 Maize	4,723	8,598	6,865	5,991
 Rice	4,334	6,617	4,044	4,251
 Sorghum	606	1,658	1,257	1,460
 Cowpea	684	766	382	647

MARKET CONCENTRATION

Competition among seed producers tends to benefit farmers via lower prices, wider choices, increased innovation, and better customer service. To assess the level of industry market concentration, TASAI uses seed sales data for each crop, as reported by seed producers, to calculate the market share of the four largest firms, also known as four-firm concentration ratio (CR4), and the Herfindahl-Hirschman Index (HHI).⁸

In 2019, the market share of the top four producers accounted for 47% of the maize seed market, 52% of the rice seed market, 63% of the sorghum seed market, and 45% of the cowpea seed market (Table 13). These market share figures show that none of the top four producers dominated the market in 2019.

Applying the HHI yielded scores below 1,200 for all four crops: 849 for maize, 1,130 for rice, 1,192 for sorghum, and 743 for cowpea. In the case of HHI, the lower the score, the more competitive a market. Both the HHI and CR4 scores indicate that the markets for all four focus crops are competitive, with no single producer dominating the market. Instead, there are many small(er) seed growers, each accounting for a small(er) market share. In 2017, the cowpea seed market was highly competitive, with an HHI score of 945, while markets for sorghum (1,124) and maize (1,555) were both competitive.⁹ However, the HHI score for the rice market in Burkina Faso (4,267) indicates that this market was concentrated in 2017. When compared to 2017, the seed markets for maize, rice and cowpea show a marked increase in competitiveness, while the competitiveness of the sorghum market has remained stable.

⁸ See below Table 13

⁹ Note that part of the reason for the discrepancy in rice is in part the result of the different sampling frames used in 2017 and 2019.



Table 13: Market concentration (HHI and CR4)

Crop	HHI (2017)	HHI (2019)	Market share of top four producers (%) in 2019
Maize	1,555	849	47
Rice	4,267	1,130	52
Sorghum	1,124	1,192	63
Cowpea	945	743	45

8 The HHI is a measure of market concentration and is calculated by squaring the market share of each firm competing in a market, and then adding up the results. It ranges from close to zero for perfect competition to 10,000 for monopoly. The scale for HHI scores, ranges from extremely low to extremely high levels of market concentration: less than 1,000 is **extremely low**, 1,000-1,999 is **low**, 2,000-2,999 is **moderate**, 3,000-3,999 is **high**, and greater than 4,000 is **extremely high**, i.e., monopoly or near monopoly.

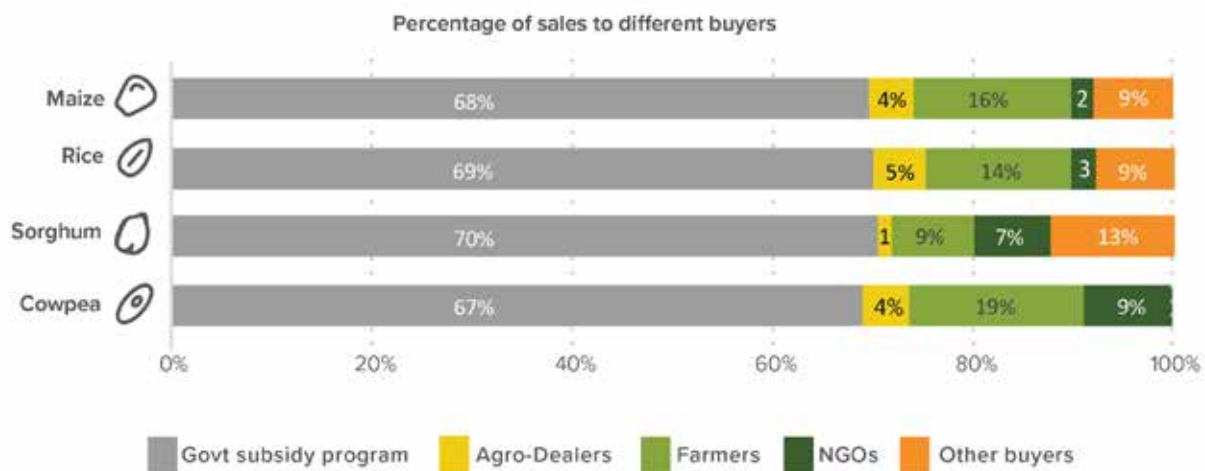
MARKET SHARE OF GOVERNMENT PARASTATALS

In some countries, public entities are still active players in the marketing and sale of certified seed. Public seed companies can play a critical role in meeting farmer demand for varieties that private seed companies deem less profitable. In addition to seed production, public companies may support other national objectives, such as university training and research. However, state-owned companies may benefit from preferential treatment, less stringent enforcement of regulations, access to competitor information, and indirect production subsidies. Collectively, these privileges can result in unfair competition against purely private seed companies. There are no government parastatals involved in the production and marketing of certified seed in Burkina Faso.

SEED SALES TO DIFFERENT CATEGORIES OF BUYERS

The TASAI study tracked five different categories of seed buyers in 2019: the government subsidy program, agro-dealers, farmers who bought seed directly from seed companies/seed producers, NGOs, and other buyers. The government subsidy program was the main buyer of seed for all crops, accounting for 68% of maize seed purchases, 69% of rice seed purchases, 70% of sorghum seed purchases and 67% of cowpea seed purchases (Figure 3). Seed sales directly to farmers were the second most important sales outlet for seed producers. Sales to other categories of buyers such as other private businesses were relatively low, accounting for between 9% and 13%, depending on the crop.

Figure 3: Seed sales by category of buyers (2019)





SEED IMPORT AND EXPORT PROCESS

Efficient seed import and export processes extend the seed market beyond national borders. While seed companies benefit from an expanded market, farmers can access a wider range of varieties from across the region.

Table 14 provides an overview of key data on the import and export of seed in Burkina Faso. The length of the import process in days is the sum of the number of days needed to obtain import documentation (import permit, phyto-sanitary certificates, and an International Orange Certificate¹⁰, if applicable) and the number of days needed to clear seed at the border. It excludes transportation time. In 2019, only one seed company imported seed into Burkina Faso, a consignment of 10 MT of maize seed from France. The company reported that it had taken 67 days to process

¹⁰ The International Orange Certificate is issued by a laboratory accredited by the International Seed Testing Association (ISTA) when both sampling from the seed lot and testing of the sample are carried out by the same laboratory.

the necessary documents and clear the seed at the port of entry, in this case the Thomas Sankara International Airport, Ouagadougou. In 2017, two seed companies imported seed into the Burkina Faso. The companies imported a combined total of 7 MT of rice seed from Côte d'Ivoire and Mali. Seed companies had a low opinion of the import process in both years, rating it as "poor" (35%) in 2017 and "fair" (50%) in 2019. The seed company that imported seed in 2019 said that the reason for its low satisfaction rating was that processing the import documents took a long time.

In 2019, four seed companies exported seed for three of the focus crops: 105 MT of maize seed, 3 MT of rice seed and 0.3 MT of cowpea seed. The destination countries were Ghana (15 MT), Côte d'Ivoire (73 MT), Mali (20 MT), and Chad (0.3 MT). The amount of seed exported in 2019 is significantly lower than that exported in 2017, when a total of 657 MT was exported (456 MT of maize seed, 200 MT of rice seed, and 1 MT of sorghum seed). Seed companies are more satisfied with the export process than the import process. The average satisfaction rating with the export process dropped slightly from 60% in 2017 to 57% in 2019.

Table 14: Seed import and export processes

Indicator		2017	2019
Import	Volume of imports (in tons)	7	10
	Number of seed companies importing seed	2	1
	Total number of days to import	22	67
	Satisfaction with import process (out of 100%)	35	50
	Interpretation	Poor	Fair
Export	Volume of exports (in tons)	657	108.3
	Number of seed companies exporting seed	4	4
	Total number of days for export	14	9
	Satisfaction with export process (out of 100%)	60	57
	Interpretation	Good	Fair



SEED POLICY AND REGULATIONS

LENGTH OF VARIETY RELEASE PROCESS

Plant variety release is the process by which new varieties undergo various tests for yield, Value for Cultivation and Use (VCU), and Distinctness, Uniformity, and Stability (DUS). Varieties that perform satisfactorily in these tests are approved for release by the CNS. A vibrant seed sector has a functional variety release system that is well understood by its stakeholders. Lengthy and/or costly variety release processes can limit the number of released varieties, adversely affecting farmer choice. Lengthy variety release processes also mean longer lags between the emergence of new threats to crops—such as pests, disease, and extreme weather—and availability to farmers of varieties that mitigate the threats. The length of the variety release process is calculated from the date the variety is submitted to the variety release committee to the date when it is approved for release. The calculation does not include the time the breeder spends developing the variety.

In Burkina Faso, the CNS is the government unit responsible for registering new varieties in the national and ECOWAS catalogues. The *Sous-Comité d'Homologation des Variétés agricoles* (SCHV) is a sub-committee of the CNS that receives and assesses applications for variety release. An applicant for variety release submits a dossier consisting of an application and a seed sample to this sub-committee. The application provides information on the origin of the variety, the breeder/institution that developed the variety, and results of the VCU and DUS tests. The complete dossier is transferred to the SCHV for assessment. The President of the SCHV shares the application with external reviewers, who are national or international experts. A decision on the application is made subject to the results of this external review. This stage of the process is often delayed, however, due to the CNS's lack of resources, which makes it difficult to engage external reviewers' services to review the DUS and VCU results. The applicant is informed of the decision by the President of the CNS. The process, from submission to approval, may take up to one year.

If the variety is approved, it is automatically registered and can be commercialized. The Catalogue is updated every five years, at which time all the varieties released in the past 5 years are collated. If an applicant wishes to fast-track this process, the applicant may provide the funds to update the Catalogue.

The CNS does not have the technical staff to conduct DUS and VCU testing. As a result, the applicant is expected to conduct these tests with a research institution and then submit the test results. Since most of the applicants are breeders from INERA, they conduct their own DUS and VCU trials. When a private seed company wishes to register a new variety in the National Catalogue, it signs a collaboration agreement with INERA to conduct the two tests. During the TASAI study, one seed company was in the process of registering maize and sorghum varieties and was working closely with INERA to conduct the tests. Testing started in 2018 and the company was expecting approval from the SCHV by the end of 2020. INERA is also currently in discussions with the Pan-African Organization on Intellectual Property (OPAPI) to set up an independent body that will conduct DUS and VCU tests in the country.

The CNS does not have procedures for the conduct the DUS and VCU tests. Since these tests are conducted independently by the research institutions, the costs and length of the testing process vary. However, INERA estimates the duration to be 48 months – 36 months for the VCU test and 12 months for the DUS test. In addition, the CNS may seek independent verification of the results from expert reviewers that have been submitted by the applicant. However, this is infrequent, as the CNS is expected to cover the costs of hiring the reviewers and the committee does not have sufficient resources to do so.





STATUS AND IMPLEMENTATION OF THE NATIONAL SEED POLICY FRAMEWORK

Well-functioning formal seed sectors have effective coordinating institutions that work well together, following rules and procedures stipulated in clearly defined and regularly updated legal instruments. The seed policy framework in Burkina Faso consists of two main instruments: Law No. 010-2006/AN (L'Assemblée Nationale, 2006), and the Regulation C/Reg.4/05/2008, which harmonizes the guidelines for quality control, certification, and the marketing of seed and seedlings in the ECOWAS region (ECOWAS, 2008). The latter, commonly referred to as the ECOWAS seed regulations, was ratified in 2008.

Law No. 010-2006/AN includes sections on plant protection, seed production, seed marketing, seed quality control, and the import and export of seed. In addition, the law establishes the CNS as the government agency responsible for the promotion of the seed sector in Burkina Faso. The government has passed 12 decrees and regulations aimed at implementing various aspects of this law. These include Decree N° 2008-680 (La République du Burkina Faso, 2008a) concerning the attributions, composition, and functioning of the CNS; Decree N°. 2008-705 (La République du Burkina Faso, 2008b) on the organization and operation of the Seed Sector Support Fund; and Ministerial Order N° 2011-017 (La République du Burkina Faso, 2011) determining the titles and functions of agricultural or forestry agents in charge of quality control for the certification of plant seed.

The country's seed policy instruments have not been updated over the last few years. However, the seed law and several regulations are currently under review. The CNS held a meeting in September 2020 to examine proposals for revisions to the documents. The CNS expects to complete the revision of the seed law in 2021 to ensure that the law is harmonized with the ECOWAS seed regulations.

The country does not have a stand-alone law for plant breeders' rights. Article 3 of the seed law gives plant breeders rights over the varieties that they have developed. However, no decree provides the details as to how these rights will be protected and enforced. Such a decree would outline the scope of the rights, the procedures for granting license for the use of varieties and proscribe penalties in default.



QUALITY AND ENFORCEMENT OF SEED REGULATIONS

Seed regulations give structure to the formal seed sector. The TASAI study assesses stakeholder perspectives on various aspects of seed regulations, including whether they are supportive to the growth of the seed sector, the role stakeholders play in their design and implementation, stakeholders' awareness of the laws and regulations, the presence of an enforcement agency, the costs of regulations, and the effectiveness of punitive measures.

The MAAH is the government ministry in charge of all matters related to agriculture. Agricultural inputs fall under the *Direction Générale de la Production Végétale* (DGPV). Under the DGPV, seed issues are handled by the *Service National des Semences* (SNS), which is the leading agency to implement the seed law and regulations. The SNS is fully operational.

The *Comité National de Semences* (CNS) was established by Article 32 of Law No. 010-2006/AN as a committee that brings together the seed industry's main actors. The CNS' roles are to oversee the enforcement of seed regulations and advise on seed policy reform. The CNS has established a sub-committee (SCHV) that is responsible for variety registration and release. While the CNS and DGPV have been established, they are not fully functional. Despite having defined procedures for operation, the subcommittee does not meet regularly and does not frequently update the National Variety Catalogue.

The sub-committee for variety registration is mandated to coordinate the variety release process and update the National Variety Catalogue. The first copy of the Catalogue was released in 2014. The Catalogue is supposed to be updated every five years, and was first updated in 2019 following a meeting convened by CNS to collate the varieties that were released and registered between 2014 and 2019. While the 2014 catalogue is publicly available, the recently updated version is not.

The Seed Sector Development Fund (SSDF) was created by Decree N°. 2008-705 in 2008 and is intended to fund key activities in the seed sector such as the variety release process, the operations of the SNS the national seed committee, and the various sub-committees. At the time of data collection, the fund was not operational because the decree did not prescribe a clear mechanism for budget allocation from the national treasury.

The TASAI study assessed four key areas of implementation required under the ECOWAS regulations: i) the setting up of a national seed committee, ii) the issuing of a decree for seed import and export, iii) the updating of the National Variety Catalogue, and iv) the creation of a seed support fund. Burkina Faso adopted the ECOWAS Seed regulations in 2008 and, in subsequent years, passed several decrees to implement different aspects of the regulations. The country established the National Variety Catalogue (in line with Article

9(3)), established the National Seed Committee (in line with Article 10(2)), and set up the national Seed Sector Support Fund, although the fund is not yet operational. In addition, in line with Article 76, seed imports to and exports from Burkina Faso are always accompanied by a phytosanitary certificate.

However, despite these measures, several clauses in the ECOWAS seed regulations are not fully implemented in Burkina Faso. Article 33 on field inspections requires a field to be inspected four times in each planting cycle. This is not strictly followed. Article 37 requires seed producers to hire seed technicians or work closely with seed technicians to enhance production of quality seed, especially for hybrid varieties. Most seed producers do not follow this requirement. Articles 52, 54, 59, and 62 require that all seed must be packaged and labeled before it is sold to farmers. However, only 28 out of the 40 surveyed seed producers package their seed.

The government is pursuing International Seed Testing Agency (ISTA) accreditation for the national seed laboratory. This accreditation will ensure that seed is tested and analyzed using international standards. The process is in the final stages of approval for certification, but has been delayed as the ISTA seed experts have not been able to travel to Burkina Faso due to the COVID-19 outbreak. Overall, seed producers rate their level of satisfaction with the implementation of the seed regulations as "good" (69%), although it is important to point out that there are significant disparities between the opinion of seed companies (62%) and seed cooperatives and individual producers (75%).





EFFORTS TO ERADICATE COUNTERFEIT SEED

Counterfeit seed (also known as fake seed) threatens the seed sector in two important ways. First, it reduces farmers' confidence in certified seed due to cases in which farmers unknowingly plant inferior quality grain labeled as certified seed. Second, it threatens the success of efforts to increase the adoption of improved varieties because farmers are not sure of which seed is genuine. TASAI tracks the number of cases of counterfeit seeds reported by seed companies and the government in the data collection year, and asks seed companies to report their level of satisfaction with government efforts to eliminate counterfeit seed.

The government of Burkina Faso does not have a specific system for tracking cases of counterfeit seed. In general, the cases of counterfeit seeds are reported by seed inspectors during the inspection and post-control activities. While SNS seed inspectors did not report any cases in 2019, seed producers reported 18 cases of counterfeit seed.

The SNS has a procedure manual for quality control and seed certification. This manual addresses all the aspects of quality control, including the inspection, packaging, repackaging, labeling, and sealing of seed. The manual also provides guidelines for identifying and tracking cases of counterfeit seed. Seed inspectors are the main users of the manual. They work with agricultural extension agents during the seed's distribution under the government seed subsidy program. As indicated in Table 15, seed producers are satisfied with the government's efforts to address the challenge of counterfeit seed, rating these efforts as "good" (71%). The rating in 2019 is similar to the rating in 2017 (67%).

Table 15: Cases of counterfeit seeds and rating of government efforts to address issue

Indicator	2017	2019
Number of cases of counterfeit seed (seed producers)	14	18
Seed industry satisfaction with government efforts to address fake seed (out of 100%)	67	71
Interpretation of satisfaction	Good	Good

USE OF GOVERNMENT SUBSIDIES

Seed subsidies are intended as a short or medium-term measure to encourage farmers to adopt improved crop varieties. The design and execution of subsidy programs, in terms of the scale, targeting, distribution arrangements, and payment systems, may contribute to the development of the seed market in positive ways, but may also be disruptive to market forces.

The government of Burkina Faso has been implementing the agricultural input and equipment subsidy program 'Opération 100 000 charrues' or 'Operation of 100,000 ploughs' since 2008. The program currently does not have an end-date. The subsidy is administered as a price subsidy. Farmers pay 20% of the final market price irrespective of the crop, while the government subsidizes 80% of the cost. The overall goal of the program is to contribute to food security and economic growth through the modernization of family farms. It targets low-income farming households that cultivate between 1 and 5 hectares, and focuses on maize, rice, sorghum, cowpea, millet, sesame, groundnut, and soya bean.

Each year, the government signs a supply agreement with the country's two seed associations – the UNPS-B and ANES-BF. Seed producers, seed cooperatives or seed companies that do not belong to any of the two organizations cannot participate in the subsidy program as seed suppliers. The government and the two associations discuss and agree on seed prices, which are reflected in the agreements signed with seed producers. In addition, the two associations agree on the volume of seed that each will supply.

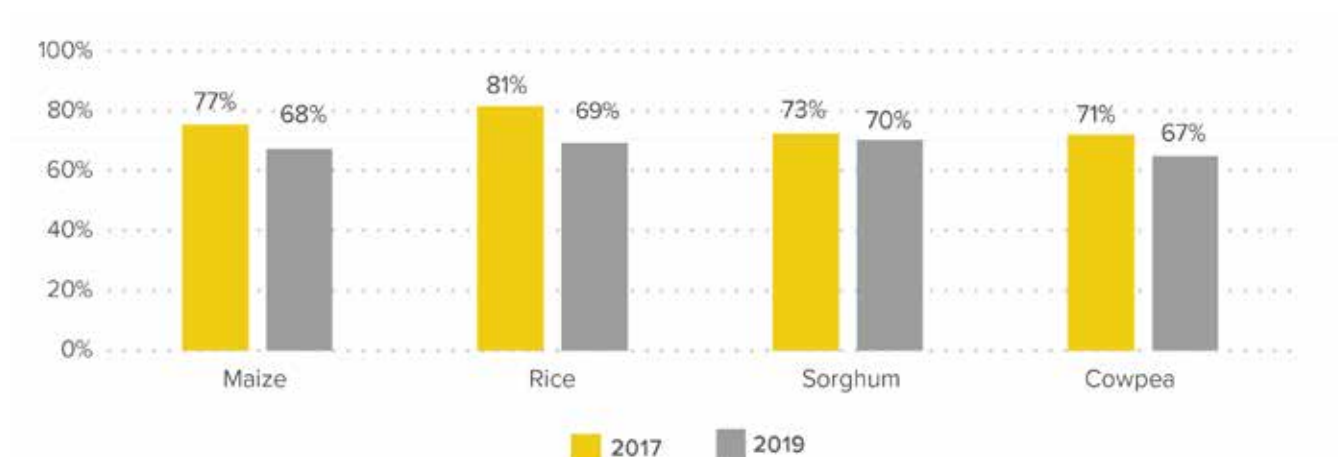
Seed distribution is supervised by different committees from the national to the village level. The village committee is composed of representatives from MAAH (an extension agent), local administration, agriculture organizations, and women's and youth groups. The committee identifies the potential demand at the village level. Seed is supplied through the two associations and delivered to the regional offices of the MAAH, after which these offices distribute the seed to different locations in the region. Farmers collect the seed from the different locations. The regional offices are also in charge of monitoring the seed's distribution and utilization in the respective regions.

At the national level, the program is monitored and evaluated by the office of technical inspection of services in the MAAH. It is through the evaluations that the process of beneficiary selection and seed distribution applied in 2019 was replaced by a pilot electronic process in 2020.

The subsidy program is very important for seed producers, as it constitutes the main buyer of seed in Burkina Faso. On aggregate, the seed subsidy programme purchased over two-thirds of all seed sold for the four focus crops in 2019 (maize – 68%, rice – 69%, sorghum – 70%, and cowpea – 67%). In 2017, the subsidy program was also the main buyer of seed, accounting for at least 70% of seed sales for the four crops (Figure 4).



Figure 4: Seed sales to government subsidy program



In 2018, the government introduced an e-voucher system through which agricultural inputs will be distributed to farmers (AGRA, 2020). The system is currently undergoing pilot testing. The e-voucher can be used to purchase seed, fertilizers, and farming and fishing equipment. The purpose of the e-voucher system is to ensure transparency and reduce transaction costs in the distribution of the subsidized inputs. Once fully implemented, the e-voucher system will improve the sourcing and accessing of seed, and eliminate the payment delays currently experienced by seed producers.

The e-voucher system is made up of three elements: a database of producers; a directory of suppliers of inputs and agro-sylvo-pastoral and fisheries equipment; and an electronic platform consisting of a server, a website, and mobile access by grant recipients and suppliers of inputs and equipment.

In 2019, the UNPS-B monitored the e-voucher program. The UNPS-B noted several challenges in the implementation of the program, including insufficient training of seed producers, a lack of seed storage facilities, and weak coordination between the government and the seed producers and agro-input suppliers.

The TASAI study asked seed producers to rate their satisfaction with the implementation of the seed subsidy program with respect to the openness and transparency, and the predictability of the seed procurement process, responses to which are listed in Table 16. Seed producers rated their satisfaction with the openness and transparency of the seed procurement process as “good” (68%). In addition, seed producers have a favorable opinion on the predictability of the procurement process, rating it as “good” (60%). These two ratings are high, because the procurement process is managed well by the government and the two seed producer associations – UNPS-B and ANES-BF. The seed producers also gave high ratings for the transparency of the procurement process in 2017 – rating their satisfaction as “good” (68%). However, they were dissatisfied with the predictability of the process, rating it “poor” at 38%.

Seed producers reported that the main challenge with the subsidy program pertains to payment delays. The seed producers rated their satisfaction with the efficiency of payments as “poor” in both 2017 (35%) and 2019 (38%). However, the government office in charge of the payments attributes the problem to the two seed associations. According to the government, the seed associations do not submit the documents needed to process the payments on time, as a result of which payment is delayed.

Table 16: Seed growers’ rating of government subsidy program

Opinion indicator (satisfaction rating %)	2017	2019
Openness and transparency of the seed procurement process	68	68
Predictability of the seed procurement process	38	60
Efficiency of payments	35	38

extremely poor poor fair good excellent

In addition to the delayed payments, seed producers also noted the lack of a tracking system for the seed. In the absence of traceability, farmers do not know the source of the seed they receive. This is problematic in case the seed does not perform in the field as expected.



INSTITUTIONAL SUPPORT

QUALITY OF THE NATIONAL SEED TRADE ASSOCIATION

Well-functioning national seed trade associations play a key role in representing the interests of the industry and engaging with the government. The membership of the national seed associations includes seed companies/seed growers, seed cooperatives, seed associations, individual seed producers and at times agro-dealers. There are two national seed associations in Burkina Faso - the *Association Nationale des Entreprises Semencières au Burkina Faso* (ANES-BF) and the *Union Nationale des Producteurs Semenciers du Burkina* (UNPS-B).

ANES-BF

The ANES-BF is an association of seed enterprises created in 2013 and officially recognized in 2014. The association's main goal is to promote the development of a formal seed sector in the country. The association's members are seed companies. Of the 21 active seed companies in Burkina Faso, 10 are members of the ANES-BF. The association serves as a platform for seed companies to supply seed under the government subsidy program, with which it has a contract. The association also supplies seed to NGOs. The day-to-day activities of the association are managed by a 4-person secretariat that was established in 2018. Half of the staff members are female. The ANES-BF currently does not have a board of directors. At the national level, the association is recognized by the MAAH and is a member of the CNS. It is also an active member of the African Seed Trade Association (AFSTA). Over the years, association members have received support from NGOs such as the Alliance for the Green Revolution in Africa (AGRA). This support has contributed to their growth and development.

The survey asked members to rate the ANES-BF on six service areas (Figure 5). Its members rated the association's overall performance as "good" (63%). The association's performance was rated "good" on all service areas except 'ability to mobilize resources' and 'managerial ability', which were both rated "fair" – 51% and 58%, respectively. The lower rating for these two areas may be because the association's secretariat is newly established.

The ratings in 2019 are similar to the ratings in 2017, except for two service areas: 'providing value to members' and 'managerial ability'. For these two, the 2019 ratings were lower than the 2017 ratings. In both years, the performance area 'ability to mobilize resources' received the lowest rating, providing a clear indication that this is an area that the association needs to improve on.

A significant number of active seed companies (11 out of 21) surveyed by TASAI were not members of the ANES-BF. In general, these non-members were dissatisfied with the ANES-BF's strategic and organizational weaknesses. At a strategic level, the association's main focus is on supplying seed to the government. This is a narrow and unpredictable focus, since it is based on the subsidy program. According to the members, the association should explore other market opportunities. At an organizational level, the association lacks the financial and human resources needed to undertake other activities related to seed sector development.



UNPS-B

The UNPS-B was formed by seed producers in November 2004. The union is registered under the law N°014/99/AN of 15th April 1999 regulating cooperative societies and groups in Burkina Faso (L'Assemblée Nationale, 1999). The association's members produce seed and planting material for multiple crops, including rice, maize, sorghum, millet, cowpea, sesame, soya bean, vegetable seed, potato, cassava, and sweet potato. The UNPS-B has been the main supplier of certified seed to the government since the start of the seed subsidy program in 2008. Annually, the association supplies between 6,000 and 10,000 MT of seed to the government. The number of seed producers who are members of UNPS-B had increased from 175 in 2000 to about 4,000 in 2011, which was the year when the association registered its highest membership. In 2019, the UNPS-B had 2,819 members.

The UNPS-B is organized into three levels – provincial, regional, and national levels. The day-to-day activities of the association are managed by a 10-person secretariat, 4 of whom are women. The secretariat reports to an executive board of 9 members, of whom 2 are women.

The survey asked UNPS-B members to rate the association on six service areas, which are represented in Figure 5. The members' overall rating of the UNPS-B was "good" (74%), with each of the six service areas receiving a "good" rating –

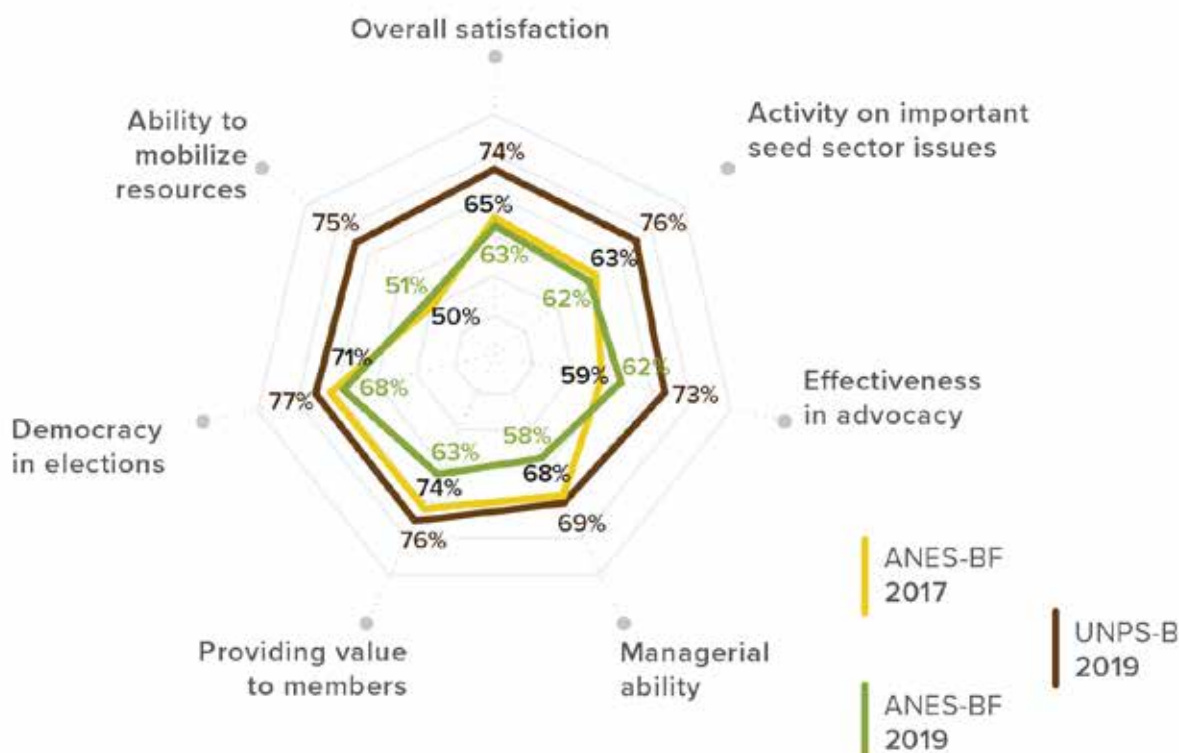
between 69% and 77%. The main reason for the higher ratings given to the UNPS-B, as compared with the ANES-BF, is the fact that the association has been in existence for at least 10 years longer. During this time, the association has set up management and governance structures. More importantly, as a consistent supplier of seed to the government, the association is a major market outlet for seed producers.

However, despite its good performance, in two areas – 'managerial ability' and 'democracy in elections' 19% and 15% of the seed companies gave a rating of 50% and below, respectively. This shows that several members are displeased with the association's performance in these two areas. Members complain about the lack of transparency and accountability in the management of the association's affairs. In addition, some members were highly critical of the lack of democracy in the governance arrangements.

Level of satisfaction with ANES-BF and UNPS-B

Some seed producers complained that their applications for membership to the ANES-BF and UNPS-B had been rejected. This rejection led them to form a third seed trade association in 2018, called the *Cadre de Concertation des Producteurs et Entreprises Semencières du Burkina Faso* (CCPESB), or consultation framework for seed producers and companies in Burkina Faso. However, this association is not operational.

Figure 5: Members' assessment of ANES-BF and UNPS-B by members.





ADEQUACY OF SEED INSPECTORS

Seed inspection services ensure that certified commercial seed meets regulatory quality standards. Ade-quate inspection services require sufficient numbers of well-resourced inspectors. TASAI tracks the number of inspectors, and information pertinent to their effectiveness, such as the availability of resources and the use of (new) digital tools.

Seed inspection in Burkina Faso is the mandate of the SNS, which falls under the MAAH. The country has no private seed inspectors. In 2020, SNS employed 94 seed inspectors, of whom 22 were women. This total includes 77 agricultural extension agents, who had been accredited as seed inspectors in 2019. The number of inspectors in 2020 has more than doubled from the 45 SNS inspectors in 2017 (Table 17). The SNS noted that some of its inspectors are due to retire in the coming years.

Seed producers rated their satisfaction with the seed inspection services as “good” (78%). Despite the high satisfaction rating from the seed producers, the SNS noted that it is constrained by a lack of financial and human resources, which affects the effectiveness of seed inspection services at the retail level. SNS officials also reported that the government intended to increase the number of inspectors further to ensure that they can adequately provide services to the registered seed producers.

Table 17: Number and rating of seed inspectors

Indicator	2017	2020
Number of GSID seed inspectors	45	94
Seed industry satisfaction with SNS inspectors (out of 100%)	78	78
Interpretation of satisfaction	Good	Good

The SNS has developed a mobile application that seed inspectors use, which allows them to sample the plots to be inspected and enter results from the field inspection in real time on a tablet. The application generates a code for each seed producer and the information pertaining to the seed producer can also be accessed through this code.



SERVICE TO SMALLHOLDER FARMERS



ADEQUACY OF EXTENSION SERVICES

Well-functioning agricultural extension services are critical to the successful adoption and proper use of improved seed by smallholder farmers. TASAI tracks the average number of agricultural households served by one extension officer. The lower this ratio, the better access farmers have to expert information and advice on how to access and use improved seed and other relevant agricultural technologies. This indicator tracks number of extension officers by sector (public and private) and gender; it is not crop-specific.

Table 18 shows the number of public and private extension officers in Burkina Faso, and the ratio of extension officers to agricultural households in the country. For comparison, the data collected in 2017 is also given. In 2019, the MAAH employed 3,993 agricultural extension workers across the 45 provinces in Burkina Faso. Of these, 802 (20%) were female. The number of government extension agents in 2019 has more than doubled from the 1,688 agents employed in 2017. In addition to the public extension workers, 17 seed producers reported employing a total of 46 private-sector extension agents, of whom 10 were female.

The total number of public and private extension agents is 4,038, which translates to a ratio of one extension agent for every 424 farming households. This is a significant improvement from the corresponding ratio of 1:944 recorded in 2017. This ratio is also lower than in many African countries, but is higher than the 1:124 measured in Rwanda (Waithaka et al., 2019b) or 1:127 recorded in Zimbabwe (Mabaya et al., 2019b). Despite the increase in the number of extension officers, seed producers' level of satisfaction with the network of agricultural extension services has remained the same since 2017 (73% in 2017 vs. 72% in 2019). The relatively low satisfaction rating given by seed producers is based on the effectiveness of extension services, which remain constrained by a lack of financial and human resources.

Table 18: Number and rating of agricultural extension officers

Indicator	2017	2019
Number of extension workers employed by government	1,688	3,993
Number of extension workers employed by seed companies	134	46
Total number of agricultural extension workers	1,822	4,038
Ratio of extension agents to farming households	1:944	1:424
Seed producers' satisfaction with extension services (out of 100%)	73	72

extremely poor poor fair good excellent



CONCENTRATION OF THE AGRO-DEALER NETWORK

Agro-dealers play a key role in Africa’s seed distribution systems, connecting seed growers to individual farmers, especially in hard-to-reach rural areas. They are often the main point of sale for certified seed. A higher concentration of agro-dealers means that smallholder farmers have greater access to improved seed. TASAI tracks the number of agro-dealers and, where possible, disaggregates registered from non-registered agro-dealers. This indicator is not crop specific.

Burkina Faso has two agro-dealer associations: the Association of Agricultural Input Wholesalers and Retailers (AGRODIA), established in 2004, and the Cooperative of Agricultural Equipment and Input Dealers (COCIMA), established in 2005. These two associations became prominent in 2013, after the government decided to rely on the private sector to distribute subsidized agricultural inputs to farmers.

AGRODIA has more than a thousand members who are all input distributors and are spread across the 45 provinces in Burkina Faso. The main objective of the association is

to promote the interests of agricultural input wholesalers and retailers. A census of all agricultural input distributors in the country, conducted by the International Fertilizer Development Corporation (IFDC) under the *Programme d’Appui à la Modernisation des Exploitations Familiales Agricoles* identified 1,460 input distributors in the country’s 13 regions (IFDC Burkina Faso, 2018). The largest number of input distributors is found in the Center-West region (15%), the Boucle du Mouhoun region (13%) and the Hauts-Bassins region (13%). Nearly all (98%) of the agro-dealer shops were run by men.

COCIMA’s objective is to make quality agricultural inputs available to producers in the cereal, fruit and vegetable sectors, but also to provide after-sales service to producers (Holtzman et al., 2013). COCIMA also plans to conduct awareness-raising and advocacy actions on the quality of agricultural inputs in Burkina Faso.

According to AGRODIA, there are 1,460 agro-dealers in Burkina Faso, only 48 of which are officially registered and accredited by the MAAH. There are no records to show any changes in this number since 2017. The overall number of agro-dealers, the ratio of agro-distributors to farm households was estimated at 1:1,173 in 2019 and 1:1,178 in 2017 (Table 19).

Table 19: Concentration and rating of agro-dealers

Indicator	2017	2019
Number of registered agro-dealers	1,460	1,460
Number of agro-dealers accredited by MAAH	unknown	48
Number of agricultural households	1,719,900	1,712,000
Ratio of agro-dealers to agriculture households	1:1,178	1:1,173
Seed industry satisfaction with agro-dealer network (out of 100%)	71	50



AVAILABILITY OF SEED IN SMALL PACKAGES

Because most farmers in Sub-Saharan Africa operate on a small scale, making seed available in small, more affordable packages is a good way to increase adoption rates of certified seed. TASAI tracks the percentage of seed sold in different package sizes, i.e., 2kg and below, 2-10kg; 10-25kg, and above 25kg.

Figure 6 shows the percentage of seed sold in the four different package sizes in Burkina Faso in 2019. Most of the surveyed seed producers (28 out of 40) packaged their seed before it was sold. Seed that is not packaged is sold in bags, according to the weight requested by the buyer. Over half (52%) of maize seed was sold in packages of 2kg or less. In contrast, 76% of rice, 70% of sorghum, and 74% of cowpea seed was sold in packages of 25 kg or more.



Figure 6: Percentage of seed sold in different package sizes (2019)

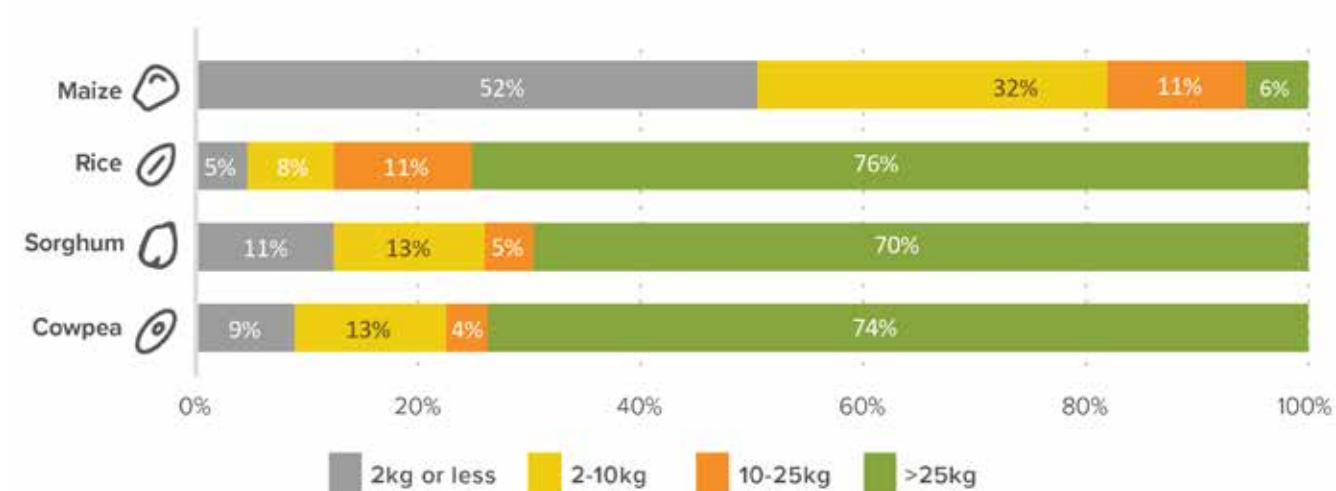
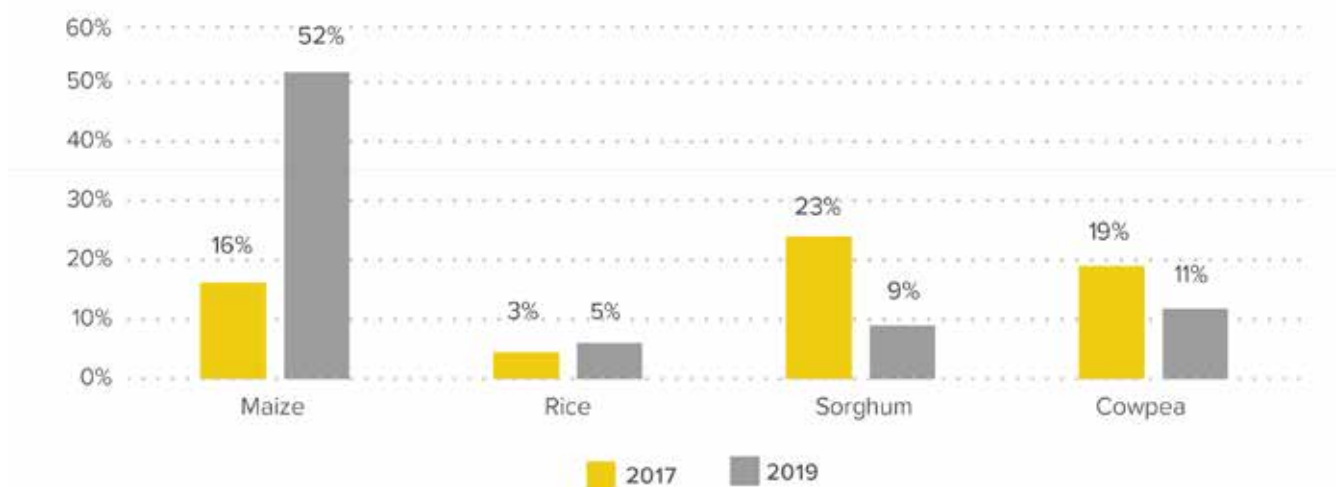


Figure 7 compares the percentage of seed sold in small packages in 2017 and in 2019. The graphs highlights two main findings. First, seed companies and producers are selling more maize seed in small packages in 2019 than in 2017. The increase may be due to the differences in the sampling methods in the two years. In 2017, the survey randomly sampled seed producers, while in 2019, the sampling was focused on regional unions, seed companies and seed cooperatives. These three entities tend to bulk seed from outgrowers (since they produce

small quantities that cannot justify packaging costs) before packaging it for sale to farmers and other buyers. These entities also have the financial capacity to invest in small packages, which are more costly. The second finding is that the seed producers sold more maize seed in small packages than for the other crops. This is likely because maize seed, especially hybrid maize seed, is more expensive than the seed for the other crops. Seed sellers are likely to invest in small packages for maize seed as it is financially viable to do so.

Figure 7: Comparison of percentage of seed sold in small packages





SEED-TO-GRAIN PRICE RATIO






The seed-to-grain price ratio at the time of planting is a good measure of affordability of improved seed. This ratio is important, as many smallholder farmers end up making a choice between purchasing seed from the formal sector or planting grain. The greater the price difference between the two, the less likely that resource-poor farmers will purchase certified seed. This indicator tracks ratio of the retail price of seed (at agro-dealer level) vis-à-vis the market price of grain at the time of planting, indicated in Table 20.

The prices reported in this study were obtained from the averages of indicative cereal prices in different regions of the country (AfriqueVerte, 2020¹¹). Seed prices were calculated from the average prices provided by the interviewed enterprises. The highest seed-to-grain ratio was recorded for hybrid maize (8.8:1). The ratio is slightly lower in 2019 than in 2017 (9.9:1). The difference is due to a decrease in the price of hybrid seed from 1,500 FCFA (US\$ 2.80) in 2017 to 1,365 FCFA (US\$ 2.50) in 2019. The seed-to-grain price ratio for rice in 2019 was 3.3:1, notably higher than the ratio recorded in 2017 (1.3:1). The reason for this difference is that the price of milled rice grain was used as the denominator in 2017 (395 FCFA/kg or US\$ 0.70/kg), while the price of paddy (unmilled) rice was used as the denominator in 2019 (165 FCFA/kg or US\$ 0.30/kg)¹². The seed-to-grain price ratios for OPV maize, sorghum and cowpea have not changed significantly over the two years.

¹¹ <http://www.afriqueverte.org/index.cfm?srub=59>

¹² We have used unmilled rice as the denominator as it is a closer substitute to rice seed.

Table 20: Seed-to-grain price ratios

Indicator	Seed price in 2019 (FCFA/kg)	Grain price in 2019 (FCFA/kg)	Seed-to-grain price ratio (2019)	Seed-to-grain price ratio (2017)
 Maize (OPV)	485	155	3.1:1	3.3:1
 Maize (Hybrid)	1,365	155	8.8:1	9.9:1
 Rice	550	165	3.3:1	1.3:1
 Sorghum	756	160	4.7:1	4.2:1
 Cowpea	1,060	390	2.7:1	2.8:1



CONCLUSION

Burkina Faso's formal seed sector is in the early growth stage of development. (Ariga et al., 2019). The early growth stage is characterized by well-established breeding programs and evolving seed policy environments. Seed companies produce and sell a limited range of staple crops. While governments and NGOs are still significant players in the sector, there is a growing agro-dealers' network that supports the distribution of seed to smallholder farmers. The 2020 TASAI Burkina Faso study highlights many positive aspects of the seed industry, most of which are the result of recent improvements and programs initiated by the government. However, several challenges that constrain the growth of the formal seed sector remain.

Under the **research and development** category, the number of active breeders has increased from 9 in 2017 to 14 in 2019, which has boosted the sorghum and cowpea breeding programs. The CNS formalized the variety release process from 2014, resulting in the publication of the National Variety Catalogue. However, the variety release committee lacks the resources to assess the applications for variety release and conduct field visits. This delay has resulted in a backlog of varieties waiting to be officially released.

The responsibility for the provision of basic seed for the four focus crops lies with INERA, which is the only research institution in Burkina Faso with active breeding programs. Between 2017 and 2019, seed producers' overall opinion of the availability of basic seed has improved for all four focus crops. The improvement is greater for maize, cowpea, and rice basic seed. The improvements are attributed to an AGRA-funded project that has supported the production and supply of breeder and basic seed. To ensure that the provision of basic seed is sustained in the absence of donor funding, it is desirable that other research institutions, such as universities and private seed companies, should initiate their own breeding programs.

Under **industry competitiveness**, the volume of seed produced in Burkina Faso in 2019 nearly trebled for sorghum and doubled for maize when compared to 2017. Rice production increased by nearly 50%, while cowpea production increased slightly.

The market for the four focus crops is competitive, with no single producer dominating the market. The competitiveness of the rice, maize and cowpea markets improved markedly from 2017 to 2019.

The increased production of certified seed is a positive development for the formal seed sector. On the downside, the prevalence of many small seed producers in the country, who each account for a small market share, stretches quality assurance services due to the sheer numbers of producers who have to be tracked.

The **seed policy** environment in Burkina Faso is conducive to private sector growth, since most of the instruments are in place and the sector is well coordinated. The seed law and several regulations are currently under review to align with the harmonized ECOWAS seed regulations.

Most committees for variety certification and registration are in place, but are not functioning optimally due to financial constraints. In addition, several clauses in the ECOWAS seed regulations are not fully implemented. For example, regulations on the conduct of field inspections and packaging and labeling all seed before sale to farmers are not strictly followed. In addition, the seed sector fund is not operational.

Eighteen cases of counterfeit seed were reported in 2019. Seed producers rate the government's efforts to address the challenge of counterfeit seed as "good" in both the 2017 and 2019 TASAI studies. The SNS has a procedural manual for quality control and seed certification, which provides seed inspectors with guidelines for identifying and tracking cases of counterfeit seed.



The government seed subsidy program is the largest buyer of seed, accounting for more than two-thirds of all seed sales for the four focus crops in 2019 and a similar proportion in 2017. The subsidy program works in close consultation with the UNPS-B and ANES-BF in setting prices and volumes of seed to be delivered. In addition, the program is monitored closely on the ground and at the regional and MAAH levels. Although seed producers gave “good” ratings for the transparency of the procurement process in 2019 and 2017, they were dissatisfied with the predictability of the process, rating it “fair”. Due to delays in payments, seed producers ranked this aspect of the subsidy program “poor” in both 2019 and 2017. While the subsidy program is catalyzing the production of certified seed and its uptake by farmers, there is a need to evaluate how to speed up the payment processes and the program’s predictability.

Under **institutional support**, TASAI studies track industry opinion on seed trade associations and the adequacy of seed inspection services. ANES-BF members rated the association’s overall performance as “good” in all service areas. However, its ability to mobilize resources and its managerial ability were both rated “fair”. The lower rating for these two areas may be due to the fact that the association’s

secretariat is newly established. UNPS-B members rated the association as “good” both overall and in all service areas. These higher ratings are likely a result of the fact that the UNPS-B has been in existence longer than the ANES-BF. The association also had established management and governance structures. In addition, the association was a consistent supplier of seed to the government, thereby constituting a major market outlet for seed producers.

Since 2017, the SNS has employed new seed inspectors and accredited agricultural extension agents as seed inspectors in 2019. The seed inspectors work with agricultural extension agents during seed distribution under the government seed subsidy program as a way of enhancing sale of quality seed. Due to this effort, the number of inspectors in 2019 is more than double the number in 2017. Seed producers rated their satisfaction with the seed inspection services in 2019 and 2017 as “good”.

Service to smallholder farmers has been good in Burkina Faso. Between 2017 and 2019, the number of government extension officers has increased by 137%, resulting in a corresponding decrease in the average number of households served by one extension officer. Despite the significant increase in the number of extension agents, satisfaction ratings have not increased, suggesting that there is still room for improvement in the delivery of extension services.

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APPENDIX 1.

For a comparison of TASAI Indicators across different countries, please visit: <http://tasai.org/wp-content/uploads/TASAI-Appendix-CURRENT.pdf>

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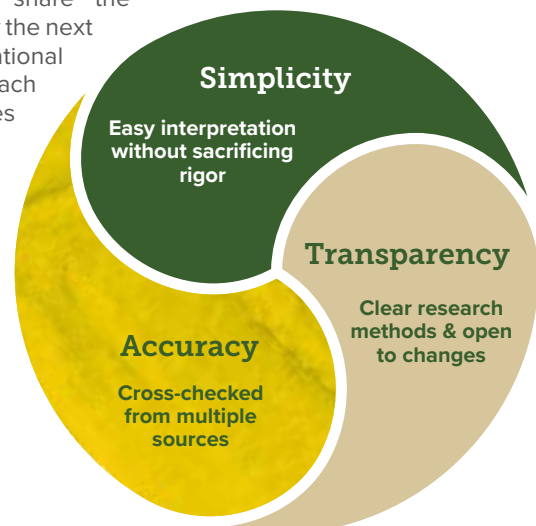


PILLARS OF COMPETITIVE SEED SECTORS

The African Seed Access Index (TASAI) is a seed industry research initiative that is coordinated by the nonprofit organization TASAI Inc. TASAI's goal is to encourage African governments and other seed industry players to create and maintain enabling environments that will accelerate the development of a vibrant private sector-led seed system serving smallholder farmers. It is this enabling environment that TASAI seeks to measure, track, and compare across African countries. The intended outcome of the index is improved access to locally adapted, affordable, and high-quality seed of improved varieties by smallholder farmers in Sub-Saharan Africa.

To assess the status of the seed industry value chain, TASAI tracks indicators in the following five categories: Research and Development, Industry Competitiveness, Policy and Regulations, Institutional Support and Service to Smallholder Farmers. By the end of 2021, TASAI studies will have been completed in 20 African countries: Burkina Faso, Burundi, the Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Liberia, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe. In each country, TASAI works closely with local seed industry actors, government and international development agencies to share the TASAI findings and to identify the next steps for creating a vibrant national seed sector. TASAI's approach is guided by the principles of Simplicity, Transparency, and Accuracy.

TASAI PRINCIPLES



For a comparison of TASAI Indicators
across different countries, please visit:
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