



TASAI

THE AFRICAN SEED ACCESS INDEX



Democratic Republic of the Congo Brief 2017 - The African Seed Access Index

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INTRODUCTION

A competitive seed sector is key to ensuring the timely availability of high-quality seeds of improved, appropriate varieties at affordable prices for smallholder farmers in the Democratic Republic of the Congo (DRC). 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.

This country brief summarizes the key findings of The African Seed Access Index (TASAI) study conducted in 2017 to appraise the structure and economic performance of the DRC's seed sector. The study evaluates the enabling environment necessary to build a vibrant formal seed sector, focusing on four grain and legume crops important to food security in the DRC — maize, rice, bean, and soya bean — which together account for roughly 87% of the total area producing cereals and pulses in the DRC (FAOSTAT, 2017). The study focuses on 12 of the DRC's 26 provinces where notable developments have taken place in the seed sector. For ease of description, the provinces are clustered into four regions: the eastern region (North Kivu and South Kivu provinces), the southern region (Haut-Katanga and Lualaba provinces), the western region (Kinshasa, Kongo Central, Kwilu and Kwango provinces) and the northern region (Mongala, Nord Ubangi, Sud Ubangi and Equateur provinces).

The study covers 20 indicators divided into five categories: Research and Development, Industry Competitiveness, Seed Policy and Regulations, Institutional Support, and Service to Smallholder Farmers. [Appendix 1](#) summarizes the indicators and compares the DRC to 12 other countries where similar TASAI studies have been conducted.

Overview

Like most other African countries, the seed industry in the DRC consists of two parallel systems: the informal sector and the formal sector. This policy brief focuses almost exclusively on the formal seed sector.

The informal sector broadly refers to the system in which farmers produce, obtain, maintain, and distribute seed resources, from one growing season to the next (FAO, 1998). Due to factors such as limited knowledge, a lack of a wide variety of seeds, limited resources to purchase seed, and poor access to agro-dealers, most smallholder farmers in the DRC still rely on the informal seed sector. Standards in the informal seed sector are not monitored or controlled by government policies and regulations; rather, they are guided by indigenous knowledge and standards and by local social structures. The locally grounded nature of transactions means that there is scant performance data available on the informal sector.

The formal sector focuses on breeding and evaluating improved varieties, and producing and selling certified seed. In the DRC, seed is certified by the National Seed Service (SENASEM), under the Department of Production and Plant Protection (DPPV) in the Ministry of Agriculture, Livestock and Fisheries. The structure of the formal seed sector in the DRC is different from that in other Eastern and Southern Africa countries. The main difference lies in seed production: while in other countries, seed is produced and marketed by seed companies, in the DRC, seed is produced mainly by a combination of individual seed producers, seed associations, and a few seed companies.

Table 1: Role of key players in the DRC's formal seed sector

ROLE	KEY PLAYERS
Research and breeding	INERA, CGIAR (IITA, Harvest Plus, CIMMYT), UNILU, seed companies
Variety release and regulation	SENASEM, CTAC
Seed production and processing	Seed producers (individual seed producers, seed associations, seed companies)
Education, training, and extension	Farmer organizations, NGOs, seed companies
Distribution and sales	Seed producers, agro-dealers, farmer organizations, UN agencies (FAO, WFP), NGOs (ICRC, NRC, Caritas)

Key acronyms: APDIAC – Association de Producteurs et de Distributeurs d'Intrants Agricoles du Congo; APSKA – Association de Producteurs Semenciers du Katanga; COMESA – Common Market for Eastern and Southern Africa; CTAC – Technical Commission for Admission to the Catalogue; DRC – Democratic Republic of Congo; DPPV – Department of Production and Plant Protection; FAO – Food and Agriculture Organization of the United Nations; IITA – International Institute for Tropical Agriculture; INERA – National Institute of Study and Agricultural Research; OPV – Open Pollinated Variety; PASA – Partners for Seed in Africa; SENASEM – National Seed Service; SQAV – Animal and Plant Quarantine Services; UNAGRICO – National Union of Agricultural Producers of Congo; UNAPSCO – Union Nationale de Producteurs de Semences du Congo; UNILU – University of Lubumbashi



As shown in Table 1, the DRC's formal seed sector comprises various entities from the government and the private sector, the latter including seed producers, commercial farmers and agro-dealers. Seed producers are represented by a national seed producer association and several provincial seed associations; however, most of these are not very active. Like other industries in the DRC, the performance of the formal seed sector varies by province and is impacted by infrastructural challenges and years of political instability.

RESEARCH AND DEVELOPMENT

Number of active breeders

At present, there are 14 active breeders for the four priority seed crops (maize, rice, bean, and soya bean) in the DRC, all of whom are employed by two public research institutions – the National Institute of Study and Agricultural Research (INERA) and the University of Lubumbashi (UNILU). Several foreign-owned seed companies employ breeders at their regional offices in other countries, while none of the locally-owned private seed companies employ a breeder. The number of breeders for each crop is as follows: seven for maize, three for rice, two for bean, and two for soya bean.

Despite the small number of breeders, seed producers rate their satisfaction with the adequacy of breeders as “good” for all crops: 77% for bean, 70% for maize, 70% for soya bean, and 60% for rice.¹ However, respondents also note that some of the breeders are not very active due to a lack of adequate breeding facilities and financial resources.

Varieties released in the last three years

Between 2014 and 2016, a total of 20 varieties were released across the four focus crops: six maize varieties, four rice varieties, and ten bean varieties. No soya bean varieties were released during this period. In comparison, a total of 63 varieties were released between 2000 and 2012², when the catalogue was last updated – 10 maize varieties, 18 rice varieties, 32 bean varieties, and 3 soya

bean varieties. 2008 saw the highest number of varieties released in a single year (43).

Figure 1 shows the 3-year moving average of variety releases since 2002.³ According to SENASEM, the main reason for the low number of variety releases is a lack of financial resources, as both public breeding programs and the government seed regulator are underfunded.

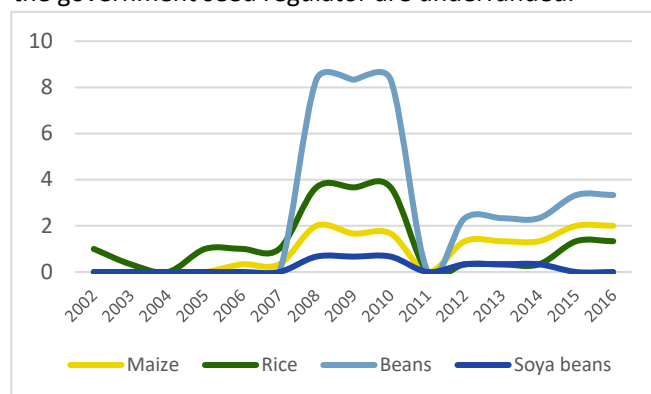


Figure 1 Number of varieties released in the DRC (three-year moving average)

Varieties sold to farmers in the last three years

Between 2014 and 2016, a total of 89 varieties were sold to farmers in the four regions: 41 maize, 20 rice, 16 bean, and 12 soya bean varieties. This is similar to corresponding figures for other countries, such as Malawi (91 varieties sold in 2016) and Zimbabwe (95 varieties sold in 2016). However, the DRC is significantly larger in terms of both area and population.

The national averages also mask significant regional disparities. For example, 56 varieties were sold to farmers in the eastern region, compared to only 5 varieties sold in the northern region. This is a significant problem, as farmers in the underserved areas cannot access improved (hybrid) varieties available in other parts of the country.

Availability of foundation seed

Most of the seed producers – 96% of soya bean producers, 93% bean producers, 86% of rice producers, and 78% of maize producers – source foundation seed locally. The main sources of foundation seed in the DRC are INERA and UNILU. Both institutions work closely with other

¹ All scores are based on industry self-reporting of satisfaction on the following scale: 0-19.99% (extremely poor), 20-39.99% (poor), 40-59.99% (fair), 60-79.99% (good), and 80-100% (excellent).

² Information on varieties released after 2012 was obtained from breeders, SENASEM and seed producers.

³ Due to the lack of information on the specific year of release for varieties released between 2014 and 2016, these varieties were assumed to have been released in 2015.



agricultural institutions and projects, such as the CGIAR institutions (IITA and Harvest Plus) and the Alliance for a Green Revolution in Africa (AGRA), under the Partners for Seed in Africa (PASA) project. Twenty percent of maize producers source their foundation seed from agricultural research institutions in neighboring countries, such as the Institute of Agronomic Sciences in Burundi (ISABU) in Burundi, the Kenya Agricultural and Livestock Research Organization (KALRO), the Rwanda Agricultural Board (RAB), and National Agricultural Research Organization (NARO) in Uganda. Several foreign companies based in Uganda and Kenya also provide foundation seed.

On average, seed producers rate their satisfaction with the availability of foundation seed as “good” for all crops: 65% for maize, 61% for rice, 63% for bean, and 62% for soya bean. Most of the local seed producers indicated that they can easily access foundation seed from the two main domestic sources, INERA and UNILU. However, the availability of foundation seed varies significantly by region. Seed producers in the west, east and south have easy access to foundation seed, while producers in the provinces in the north face difficulties accessing foundation seed. In addition to access, seed producers also complain about the high cost of foundation seed, which is about US \$4 per kg.

Average age of varieties sold

The average age of varieties sold was calculated for each crop by cross-referencing the varieties sold in 2017 against the Variety Catalogue, which lists the year the variety was introduced. Table 1 shows the figures for the four focus crops. The average ages of the maize, rice, bean and soya bean varieties on the market in the DRC are higher than the average ages of the same varieties in other countries in the region.

Table 1: Age of varieties sold (in years)

Crop	Age of oldest variety sold	Average age of varieties sold
Maize	28	17.6
Rice	26	16.5
Bean	28	22
Soya bean	27	18

The youngest maize varieties on the market in 2017 were Mudishu 1 (4 years), Mudishu 3 (4 years), and UNILU (8 years). The oldest varieties were Samaru for maize (28 years), IRAT 112 for rice (26 years), DC Kenya for bean (28 years) and Afya for soya bean (27 years). Most of the old

varieties have significantly depreciated and should be retired and replaced with more recently released varieties. Currently, the DRC has no guidelines to govern when old varieties should be retired.

Varieties with climate-smart features

To be classified as climate-smart, a crop variety must meet at least one of two criteria – early maturity and/or tolerance to extreme weather conditions, such as drought, flooding, or frost. Between 2014 and 2016, three-quarters (75%) of all maize varieties and half (50%) of all bean varieties released were classified as climate-smart. Only one of the four rice varieties released was climate-smart, and no soya bean varieties were released during this period. All the climate-smart maize varieties released are drought-tolerant, and four out of five of the climate-smart bean varieties are early-maturing. The climate-smart rice variety is early-maturing.

INDUSTRY COMPETITIVENESS

Number of active seed companies

During the 2016 growing season, a total of 73 seed producers were working with at least one of the four focus crops. Of these producers, 11 were seed companies, 25 were seed associations, and 37 were individual seed producers. As highlighted earlier, most seed in the DRC is produced either by seed associations or by individual seed producers. This structure has generally resulted in the production of poor-quality seed, as seed associations and individual seed producers do not have the capacity to produce and process quality seed. The concept of private seed companies is relatively new in the country: the first local private seed companies were launched in 2014 under the PASA project. As mentioned above, 11 seed companies currently produce at least one of the four focus crops, a low number compared to other countries, for example Malawi (23), Tanzania (30), Kenya (23), and Zimbabwe (16).

Of the 73 seed producers, 44 are located in the east, 13 are based in the west, 10 in the south and only 6 in the north. At present, all of the 11 seed companies are based in the east (7 companies) and south (4 companies).

Market share of top seed companies

The volume of certified seed produced and sold in the DRC is significantly lower than in other countries.



According to seed producers and other key informants, approximately 1,807 tons of maize seed, 430 tons of rice seed, 331 tons of bean seed, and 244 tons of soya bean seed was sold in 2016. While, as in other African countries, maize seed is the most commercially available, the amount of maize seed sold – 1,807 tons in 2016 – is far lower than the amounts reported in neighboring countries, e.g. Malawi (14,350 tons), Kenya (39,000 tons), Uganda (9,600 tons), or Zambia (33,000 tons). This disparity is all the more significant as the DRC is a much larger country than any of the countries listed above.

The volume of seed sold also varies by region. The southern region produces and sells the most seed (52% of total seed sales in the DRC), followed by the eastern region (31%), western region (14%) and northern region (3%). These proportions are consistent with the number of seed producers in each region.

Market share is calculated using seed sales as reported by seed companies. At the national level, the DRC seed market appears highly competitive, as none of the seed producers is a dominant player in the market. The market share of the top four seed producers in the DRC is 48% for maize, 44% for rice, 50% for beans and 57% for soya beans. However, in three (west, south and north) of the four regions, the industry is less competitive due to the relatively low number of seed producers in each region.

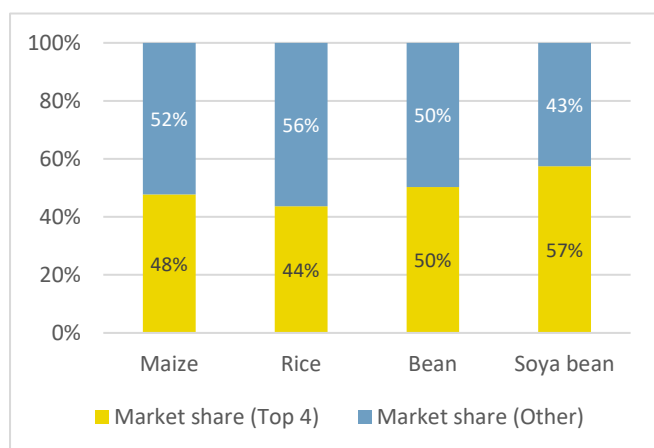


Figure 2 Total market share (%) of top four companies

The Herfindahl-Hirschman Index (HHI) was also used to quantify industry competitiveness. The index, a sum of squared market shares, ranges from near zero for perfect competition to 10,000 for a pure monopoly. The HHI was calculated for each crop, showing very low levels of market concentration: 913 for maize, 689 for rice, 876 for bean and 968 for soya bean. The market shares of the top four companies and the HHI results both confirm high levels of competition in the seed market for all crops. This is

different from other African countries surveyed by TASAI, where seed industries have consolidated over time.

The relief market

In the DRC, the relief market is a significant source of demand for seed. The main players in this market are United Nations agencies (e.g., FAO and WFP) and NGOs such as Caritas, the International Committee of the Red Cross, the Norwegian Refugee Council, and World Vision International. These organizations source seed by issuing bids to private suppliers.

According to the seed producers interviewed, in 2016 seed sales to the relief market accounted for 22% of total maize sales, 40% of total rice sales, 72% of total bean sales, and 41% of total soya bean sales.

Most of the relief agencies are based in the Kivu provinces (eastern region), as this is where humanitarian assistance is most needed (UNICEF, 2017)(UNICEF, 2017). About 93% of the seed (for the four focus crops) for the relief market is sourced from seed producers in this region. A key challenge in the relief market is that the seed supplied to relief agencies (and subsequently to smallholder farmers) tends to be of low quality, in part because these agencies pay relatively low prices for the seed: the price of relief seed is between US \$0.60 and US \$0.90 per kg, as compared to the market rate of about US \$1.50 per kg. As a result, few seed companies respond to the bids. Instead, those accepting the bids, including seed producers and other types of businesses, usually source grain from the grain market and supply it as seed to the NGOs.

Market share of government parastatal

There are no government parastatals involved in the production and sale of certified seed in the DRC.

Length of import/export process for seed

Formal imports: The time it takes to formally import seed is calculated as the number of days from the time an import permit is requested to the time when the seed is cleared at the border. In 2016, about 3,712 tons of seed was formally imported into the DRC: 2,106 tons of maize seed, 181 tons of rice seed, 241 tons of bean seed, and



1,184 tons of soya bean seed.⁴ Most of the formal imports are destined for the western region (51%) and the southern region (47%). Only a fraction (4%) of formal imports went to the eastern region, while no formal imports were recorded in the northern region.

The main importers were the national and provincial government institutions (INERA and the National Quarantine Services under the Ministry of Agriculture, Livestock and Fisheries), seed companies, and a few agro-dealers. International research institutions like CIAT usually import seed in collaboration with INERA. Most of the formal seed imports from Zambia came from Uganda through Kasumbalesa, from Kenya through Bunagana and Kasindi, from Rwanda through Ruzizi, and from South Africa through the ocean port of Boma.

The time required to formally import seed into the DRC ranges from 4 to 30 days, with an average of 16 days. The duration also varies from region to region. Importers noted that, on average, it takes more time to obtain an import permit (9 days) than it does to clear the seed at the border (5 days).

The cost of importing seed depends on the amount of seed being imported, and varies by region. The official cost of importing seed in the amount of 1-100 tons costs US \$61, while volumes of seed above 100 tons cost US \$118 to import. However, seed companies report that the cost per consignment can be as much as US \$2,100.

The average time to import seed into the DRC is similar to the length of the import process observed in other African countries, such as Malawi (14 days), Tanzania (12 days), and Zambia (11 days). Nevertheless, seed importers expressed frustration with the import process, rating it as “extremely poor” (20%). Seed importers in the east are even less satisfied (10%).

Informal Imports: According to multiple sources, many seed imports into the DRC are not officially documented. An estimated 150.6 tons of certified seed was informally imported into the DRC in 2016. Most of the seed imported informally was maize seed (139 tons), with minimal informal imports of bean seed (11 tons) and rice seed (less than one ton). However, these amounts are likely to be an underestimate, as some informal importers are

reluctant to divulge information. Several sources also indicated that some importers import grain, which is later sold as seed. They noted that this is common practice for sales on the relief market, where the prices are generally low. The main sources of informal seed are Zambia (through Kasumbalesa and Sakania), Rwanda (through Bukavu and Ruzizi), and Uganda (through Mahagi, Kasindi and Kabuhanga).

The time it takes to informally import certified seed into the DRC varies between one and ten days, with an average of six days. This is notably shorter than the average of 16 days listed above for the formal process. The cost incurred in importing informally ranges from US \$47 to US \$2,000, with an average of US \$832 per consignment.⁵ This cost covers loading and off-loading seed bags and bribes. Informal imports were reported in the eastern and southern regions. No informal imports were reported in the western and northern regions.

Importers’ satisfaction ratings with the informal import process range from 30% to 90%, with an average of 67%. These findings clearly show that seed importers are significantly more satisfied with the informal import process than they are with the formal import process. This disparity is due to the lack of clarity and the length of the formal process as well as its high administrative costs, which serve as a deterrent to following the formal procedures.

SEED POLICY AND REGULATIONS

Length of the variety release process

The length of the variety release process is defined as the period of time from the date an application for the release of a variety is submitted to the date when the variety is released by the relevant authority. In the DRC, crop variety release falls under the mandate of the Technology Commission for the Admission into the Catalogue (CTAC), which works under SENASEM.

The average length of the variety release process in the DRC is 26 months. Differences in the length of the release process across crops are minimal: 27 months for maize, 24 months for rice, and 26 months for both bean and soya bean. These figures are also in line with corresponding

⁴ Seed imports exceed seed sales because both seed producers and agro-dealers import seed, while sales are calculated based only on seed producers.

⁵ Note that, while the cost of formal imports is calculated based on weight (in tons), informal imports are generally handled by consignment as opposed to weight.



numbers from other African countries. For example, the release process in the DRC is shorter than in Kenya (33 months), Malawi (34 months), and Tanzania (31 months), but slightly longer than in Uganda (20 months) and Zambia (24 months).

The average cost of a variety release in the DRC is high, at about US \$4,692 per variety. This is more than 4 times the cost of the process in Zambia (US \$1,070), 9 times the cost in Tanzania (US \$504), and 14 times the cost in Zimbabwe (US \$350).

On average, breeders rate their satisfaction with the variety release process as “good” (62%), giving a rating of 61% for maize, 62% for rice, 67% for bean, and 57% for soya bean. The breeders noted that SENASEM is underfunded, which leads to delays in the variety release process. For example, due to a lack of resources, the National Variety Catalogue has not been updated since 2012; consequently, 69 varieties that were on the market in 2016 had not completed the SENASEM release process. These 69 varieties fall into two categories: (i) those that have been accepted for registration and release by SENASEM but have not been registered in the catalogue, and (ii) varieties for which breeders have applied for variety release, but SENASEM has not met to review the results of the variety performance tests required prior to registration and release. Of the 69 varieties that have yet to complete the SENASEM release process, 39 are maize varieties, 7 are rice varieties, 15 are bean varieties, and 8 are soya bean varieties.

Status of seed policy framework

There is no sector-specific seed law in DRC. A draft seed law was formulated in 2007 but has not been passed by the parliament. In the meantime, the Belgian Development Agency (BTC), in collaboration with the Ministry of Agriculture, has tried to reorganize the seed sector by setting up preliminary national and provincial seed councils in Kinshasa and the provinces, respectively. The seed councils, composed of all actors in the seed sector, are supposed to meet two to four times per year to discuss and define appropriate actions related to seed production, certification, and distribution at the national and provincial levels. However, this is not the case.

In collaboration with IITA and INERA, SENASEM has drafted, and is implementing, a set of technical and administrative procedures for the seed industry.

The DRC is a member of the Common Market for Eastern and Southern Africa (COMESA) and the Southern African Development Community (SADC), both of which have worked to harmonize regional seed regulations. After the DRC seed law has been passed, the next step would be to draft the seed regulations to conform to the COMESA seed regulations.

Adequacy of seed inspectors

SENASEM employs 105 seed inspectors across the four regions. Compared to other countries, at the national level, the DRC has one of the highest numbers of seed inspectors. Out of the 13 other African countries surveyed by TASAI, only South Africa has more seed inspectors - 180. However, it is important to note that the DRC is the second-largest country in Africa and has limited road networks. Taking this into account, the current number of inspectors is actually on the low side.

According to the seed producers surveyed, the seed inspectors in the DRC are inadequate. The producers rate the adequacy of seed inspectors at the border points as “poor” (33%) and at the farm and retail level as “fair” (59%). One significant difference between the DRC and other African countries with more advanced seed industries (e.g., South Africa, Zambia, and Zimbabwe) is that, in the latter, the private sector plays an important role in seed inspection through private seed inspection services. In these countries, seed companies are very satisfied with the adequacy of seed inspectors.

In addition, in countries like Kenya, Malawi, Tanzania, Uganda, and Mozambique, the seed regulator has trained and accredited private seed inspectors. In some cases (e.g. Malawi), these private inspectors assume some, though not all, of the seed inspection functions originally undertaken by the government. Given the limited resources and capacity of government inspectors in the DRC, the addition of private inspectors may be beneficial for the industry as a whole.

Efforts to stamp out fake seed

Seed producers in the DRC have reported that fake seed is a major problem affecting the seed industry. In 2016, a total of 185 cases of fake seed were reported. This is significantly higher than the number of cases reported in other African countries: Ethiopia (11 cases), Malawi (20 cases), Tanzania (18 cases), Zambia (22 cases), and Zimbabwe (52 cases). Moreover, as in other countries, the



number of reported cases is likely to be an underestimate of actual rates, as illegal activities are difficult to track.

Seed sector stakeholders listed several sources of fake seed in the country. First are the NGOs and other agents who allegedly purchase low-quality seed for the relief market. The relief market constitutes a major incentive for traders to buy grain (from within the DRC and from neighboring countries) and sell it as seed. Second, many seed producers do not have sufficient technical capacity to produce quality certified seed and resort to selling grain as seed.

Seed producers in the DRC rate the government's efforts to stamp out fake seed as "poor" (22%). Although the seed companies surveyed in other countries also report relatively low satisfaction ratings with efforts to counter fake seed (57% in Ethiopia, Tanzania, and Zimbabwe), the 22% rating reported in the DRC is by far the lowest in the region. According to seed producers, the government has yet to acknowledge the problem, which is the first step towards finding lasting solutions. The DRC has no known cases of enforcement officers arresting individuals caught with fake seed. Despite fewer reported cases of fake seed, seed companies in most of the other countries are also quite dissatisfied with their respective governments' efforts to address the problem.

Use of smart subsidies

The government of the DRC does not currently have a seed subsidy program.

INSTITUTIONAL SUPPORT

Availability of extension services

In 2016, a total of 1,198 agricultural extension workers were active in the DRC. Nine hundred ninety-four of these extension workers (83%) are employed by the National Extension Service (SNV), which is operated by the government. The remaining 204 are employed in the private sector, working for seed producers as well as NGOs and private agribusiness enterprises.

The total number of extension workers in the four regions in the DRC translates to one extension worker for every 5,898 farming households. This is a very low ratio compared to other African countries surveyed by TASAI, for example Malawi (1:1,388), Mozambique (1:1,045), Tanzania (1:831), and Zambia (1:560).

In addition, most of the extension workers in the DRC lack the funds and other resources such as vehicles to reach all the farming areas across the country. Moreover, in part due to poor infrastructure, the distribution of the extension officers across the country is uneven. Ninety-two percent of the extension workers (1,099 out of 1,198) are based in the east, while only 7% work in the west, and less than 1% works in the south. At present, there are no extension officers in the northern region.

Quality of national seed trade association

There are two levels of seed producer associations in the DRC – a national association called the National Union of Agricultural Producers of Congo (UNAGRICO) and provincial seed associations. The TASAI country study has found that only 10 out of 73 of seed producers in the DRC are aware of the existence of UNAGRICO. Of these, only six seed producers are members. However, most producers (52 out of 73) are aware of the existence of provincial seed associations; 34 reported that they are members of their respective provincial associations. The fact that the provincial organizations are better known makes sense, given the country's large size.

National Seed Trade Association: The members of UNAGRICO gave the organization an overall satisfaction rating of 32% ("poor"). This is the lowest rating given to a national seed trade association among the countries surveyed by TASAI to date. The National Seed Trade Association of Ghana (NASTAG) has the second lowest rating (46%), which is primarily due to the fact that NASTAG is less than two years old and has yet to set up a fully functioning secretariat. ZASTA from Zambia (74%), TASTA from Tanzania (71%), STAM from Malawi (73%), and STAK from Kenya (62%) are rated quite highly because they have established an effective working relationship with the government, giving seed companies a platform to engage on seed sector issues. SANSOR (South Africa) received the highest rating (81%) among the national seed trade associations in the TASAI country studies, because of its effectiveness in delivering key services to seed companies, such as seed certification, seed inspection, and phytosanitary services.

UNAGRICO is rated "poor" in all service areas: democracy and governance (35%), activity on important seed sector issues (37%), effectiveness in advocacy (32%), managerial ability (32%), providing value to members (30%), and ability to mobilize resources (23%).



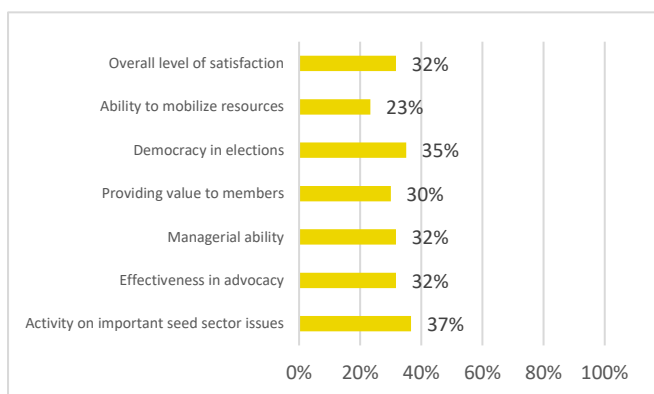


Figure 3 Members' satisfaction with UNAGRICO

Provincial Seed Associations: The provincial seed associations are located in the eastern and southern regions – the Union Nationale de Producteurs de Semences du Congo (UNAPSCO) in North Kivu, the Association de Producteurs et de Distributeurs d’Intrants Agricoles du Congo (APDIAC) in South Kivu, and the Association de Producteurs Semenciers du Katanga (APSKA) in Haut-Katanga. There is no provincial seed association in the western or northern regions. Over half (23 out of 44) of the seed producers in the eastern region are members of either UNAPSCO or APDIAC, and they rate their satisfaction with both provincial associations as “poor” (37%). Most of the seed producers (8 out of 10) in the southern region are members of APSKA, and they rate the organization’s performance as “extremely poor” (7%). Because of the low rate of membership, it is not possible to give an accurate assessment of the association based on their ratings.

SERVICE TO SMALLHOLDER FARMERS

Concentration of rural agro-dealer network

The agro-dealer is a relatively new concept in the DRC. The PASA project has begun to develop an agro-dealer network in the eastern region, and, at present, these agro-input merchants sell mostly vegetable seed and fertilizer. However, most of these merchants do not have sufficient business or marketing knowledge.

In 2016, there were 161 agro-dealers in the DRC, of which 42 were hub agro-dealers (serving as wholesalers to supply smaller agro-dealers) and 117 were small rural agro-dealers. This translates to a ratio of one agro-dealer for every 43,882 farming households in the DRC. This is clearly inadequate, leading to a situation in which most farmers have very limited or no access to agro-dealers. All other countries surveyed by TASAI have more agro-dealers and a higher ratio of agro-dealers per household:

examples include Kenya (1:1,221), Malawi (1:1,320), Tanzania (1:2,900), and Zambia (1:3,276).

Understandably, seed producers rate their satisfaction with the concentration of the agro-dealer network in the DRC as “poor” (30%). Seed companies in other countries are more satisfied with their respective agro-dealer networks – Malawi (64%), Tanzania (66%), and Zambia (57%).

Availability of seed in small packages

About a third (31%) of all seed sold in 2016 was sold in small packages weighing 2 kg or less. Breaking this down by crop, 28% of maize, 26% of rice, 31% of bean and 55% of soya bean seed was sold in packages of 2 kg or less (see Figure 4).

Seed in small packages was only sold in the eastern and southern regions, because most of the seed companies are based in these regions. The seed companies in the eastern region have been trained in marketing, packaging, and branding of their seed under the PASA project. Seed companies in the south are mainly foreign companies with considerable experience in seed packaging.

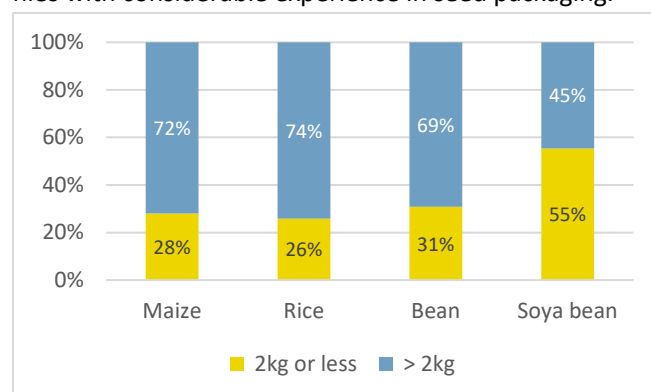


Figure 4 Percentage of seed sold in different package sizes

Seed-to-grain price ratio

Assuming stable prices at planting time, seed-to-grain price ratios can reflect the attractiveness of a variety or affordability of improved seed relative to farmer-recycled grain. The seed-to-grain price ratios for the four crops in the DRC are: 5.5:1 for maize hybrid, 5.0:1 for maize OPV, 1.8:1 for rice, 1.4:1 for bean, and 1.6:1 for soya bean. These ratios are similar to those in other African countries such as Malawi (4.2:1 for hybrid maize) and Uganda (6.2:1 for hybrid maize).

However, there is a significant difference in the price ratios between the southern region and the other regions. In the south, both maize price ratios (16.6:1 for hybrid



maize and 9.2:1 for OPV maize) are significantly higher than the national average. This is due to the fact that the price of maize grain is much lower in the southern region – US \$0.30 per kg, well below the national average of US \$0.60 per kg. The low grain price is likely due to the high supply of maize from commercial farmers, which in turn is fueled by the demand for maize flour from the mining companies located in the south, which distribute maize flour to their employees.

CONCLUSION

The seed industry in the DRC is in the introductory stage. The low adoption rates (less than 50%) of certified seed for key food crops and the very low volumes of seed sales suggest that there is significant space for growth. However, seed sector growth is constrained by several factors across the seed value chain. Moreover, the opportunities and challenges in the seed sector vary across the four regions, meaning that targeted strategies would be required to address problems specific to each region.

At the research level, the country needs more breeders at INERA and the University of Lubumbashi. More importantly, the breeders require more resources to carry out their work. This is important, as the average age of the varieties surveyed in the DRC is the oldest recorded in East and Southern Africa. Old varieties that no longer display the original variety characteristics need to be replaced with newer varieties.

At the industry level, the local seed companies need support to build their capacity in seed production, management, and marketing. This could be achieved through partnerships with more established seed companies from neighboring countries. All categories of seed producers, especially the individual seed producers and seed associations, need to be more effectively monitored and regulated to ensure the output of quality certified seed.

There is an urgent need for greater quality control in the relief seed market to avoid the price distortion of the local seed market. For their part, seed producers need to ensure the supply of quality seed, while the relief agencies should offer more competitive prices.

Most of the seed policy instruments in the DRC, including the seed law and regulations, have existed in draft form for nearly ten years. Policy makers should ensure that these instruments are updated to conform to the COMESA

harmonized seed regulations before they are passed by the relevant authorities. In addition, supporting instruments such as the National Variety Catalogue should be updated more regularly. The low capacity of SENASEM significantly affects various aspects of the seed sector, including seed quality control and inspection services at the production, post-production and distribution stages.

Lastly, the DRC's various seed support services are either weak or non-existent. There are very few agro-dealers and extension officers in the country. In most cases, these supporting agents are insufficiently trained and lack the necessary resources to assist farmers, or they do not even exist, as is the case in the northern region. The national and provincial seed associations are generally weak and, in many cases, seed producers are not even aware of their existence. The associations also need to strengthen their management and service delivery capabilities.

While the challenges constraining seed sector development in the DRC are formidable, the sector has significant potential for growth because of the country's overall agricultural potential. The fact that regional seed companies have entered the market in the DRC or are at least exploring it via exports indicates that the DRC offers an attractive seed market. New investments in agriculture and concerted reform efforts by the government and the private sector would create a unique window for catalytic change in the DRC's formal seed sector.

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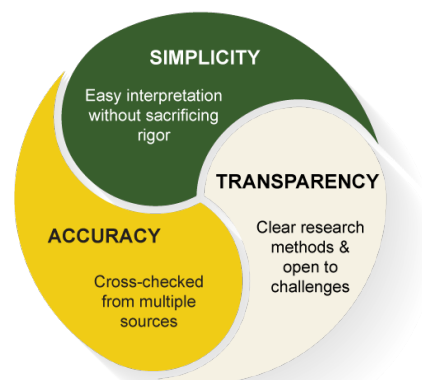
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The **African Seed Access Index (TASAI)** is a seed industry research initiative housed at **Market Matters Inc.** (MM Inc.). **TASAI's goal** is to encourage African governments and other seed industry players to create and maintain enabling environments 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 Africa countries.

To assess the status of the seed industry value chain, TASAI employs **20 indicators** grouped into five categories: **Research and Development, Industry Competitiveness, Policy and Regulations, Institutional Support, and Service to Smallholder Farmers.**



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