Cornell University

Sathguru Since 1985 Catalysing Success

SEED SYSTEMS GROUP

Seed for the Transformation of Food Systems in Left-behind Countries of Africa: The Role of Seed Systems in Averting Pandemic-Induced Food Crises

2020-2025 Business Plan Summary

The ROCKEFELLER FOUNDATION

AGRA Growing Africa's Agriculture

Seed for the Transformation of Food Systems in Left-behind Countries of Africa: The Role of Seed Systems in Averting Pandemic-Induced Food Crises

2020-2025 Business Plan Summary

Authors
William Ronnie Coffman
Vernon Gracen
K. Vijayaraghavan
Stefan Einarson
RR Hanchinal
C. Venu Gopal
Vijay Paranjape
Vithal Karoshi
Anand Singh
Rituparna Majumder
Poornima Gade
Richa Kapur
Aishwariya Varadan
Mathew Davis
Joseph DeVries

National Seed Systems Consultant
Edgar Somacumbi- Angola
Glele Mellon- Benin
Sanctus Niragira – Burundi
Hortense Mafouasson - Cameroon
Sougnabe Pabame - Chad
Albert P. Bembe - Congo Republic
Assavo Nguetta - Cote d' Ivoire
Christophe Asanzi - DR Congo
Tesfmichael Abraha - Eritrea
Ibrahim Diallo - Guinea
Paul M. Rabenasolo - Madagascar
Issoufou Salami – Niger
Ousmane Sy - Senegal
Festus Massaquoi - Sierra Leone
Gilbert Tchala - Togo

Editor - Matt Hayes
Design & Layout - Ecomedia

 Seed Systems Group
Riverside Studios
Riverside Lane, Nairobi, Kenya Tel: +254 734 699995, +254 700 258888
Email: info@seedsystemsgroup.org

Background and Introduction

Subsistence-level farming in Africa is unsustainable. As rural populations grow and spread, agricultural lands and other resources are steadily depleted and rendered incapable of providing a stable, decent existence. Poverty, hunger, and malnutrition become the dominant themes in rural communities, and people lose faith in farming as a livelihood.

Climate change, with its attendant droughts, floods, and other extreme weather events, is now exacerbating this trend across much of the continent. The result is high rates of rural-urban migration, leading to an overflow of non-productive people living in Africa's cities. Many, especially the youth, make desperate attempts to migrate to Europe and other developed regions. Others turn to radical religious and social factions which threaten the stability of whole regions of the continent and other parts of the world.

Africa's population has nearly tripled from 478 million in 1980 to a current estimate of 1.4 billion and is expected to increase to 2.4 billion by 2050 (United Nations, 2016). Approximately 65% of Africa's population are farmers whose nutrition and income depend on the food they can harvest from small land holdings. Yet, despite the ubiquitous nature of agriculture, sub-Saharan Africa has the highest rate of chronic malnutrition in the world and is home to 218 million undernourished people (OECD/FAO, 2018). Food imports, currently estimated at $35 billion annually, are projected to rise to $110 billion by 2025 (African Development Bank, 2018).

For decades, this has been the dominant trend across much of rural Africa. For lack of better options, smallholder farmers have continued to depend on the same, subsistence-level farming practices as generations of farmers before them. Grain crop yields in many countries remain stuck at around 1 MT/ha (1/3 the average level of productivity among all developing countries), preventing land from being cultivated with more nutritious vegetables and other protective foods. Rural economies, with some exceptions, have stagnated. Much of the fallout from failing agricultural systems is absorbed by women, who care for children and also supply a large portion of the labor on Africa's farms (Palacios-Lopez et. al., 2015).

The concussive global shock of the COVID-19 pandemic is, in many respects, is continuing to reverberate around the world. The tremors are now being felt far beyond the terrible illness caused by the disease and its impact on already stressed health systems.

In sub-Saharan Africa, much of the concern is coalescing around how this crisis will affect access to food in a region with longstanding vulnerabilities to food-related challenges.

A STRAIGHTFORWARD SOLUTION

It does not have to be this way. There is a solution to low crop yields and the trap of subsistence agriculture. In recent years, farmers in several African countries have reversed decades of static or declining crop yields and over-reliance on starchy staple crops by planting seed of high-yielding, nutritious, climate-resilient crop varieties. In these countries, yields of a wider range of food crops are rising and economic indicators are improving. Improved seed has been key to unlocking rural economic growth and opportunity, especially for women and the youth.

Africa's smallholder farmers must now be front and center of efforts to prevent the COVID-19 pandemic from causing an outbreak of food crises. The good news is that we can draw on a wealth of experience from regions like East Africa, where per capita cereal production has risen 50% since 2000. Not surprisingly, East Africa is also where the adoption of improved seed has flourished.

New seed has played a major role in offering some African farm families a better life. The past decade has seen a quiet explosion in the breeding of new varieties of Africa's staple food crops and vegetables. Major public breeding initiatives operating with support from the Bill and Melinda Gates Foundation, The Rockefeller Foundation, and several bi-lateral development agencies, have been implemented by CGIAR centers to create higher-yielding crop varieties adapted to African agro-ecologies and cope with climate change.

National crop breeding teams in Ghana, Kenya, Mali, and Uganda, and several other countries were also funded to develop and release hundreds more new varieties.

This new generation of high-yielding, climate-resilient crop varieties now represent a major asset in the struggle to help Africa feed its growing population with a more nutritious range of crops and adapt effectively to climate change.

Parallel investments in a new, private sector-driven model for seed production and sale to smallholder farmers has likewise proven effective across several African countries.

The public-private model for seed delivery is based on the introduction and licensing of new crop varieties to local, private seed companies together with technical and financial support to produce, package, and market seed of the new varieties via village-based agro-dealers. The growth of local seed markets attracts spill-in investments from regional and international seed companies, helping to further extend the supply frontier of improved seed.

Uptake by farmers of improved seed in countries which have received this assistance has driven increased crop yields for important food crops (Fig 1). Equally important, the new model for seed systems has proven sustainable, with new seed companies being formed, fertilizer use increasing, and grain markets growing to absorb the increased local production.

The twin assets of hundreds of higher-yielding, climate-resilient crop varieties plus a reliable model for seed delivery essentially re-writes the narrative for attaining food security in Africa and achieving Sustainable Development Goal #2 to "End hunger, achieve food security and improved nutrition and promote sustainable agriculture" by 2030. Once viewed as one of the world's most daunting humanitarian challenges, ending malnutrition and food shortages in Africa through sustainable increases in agricultural productivity can now be viewed as an achievable goal in our lifetime.

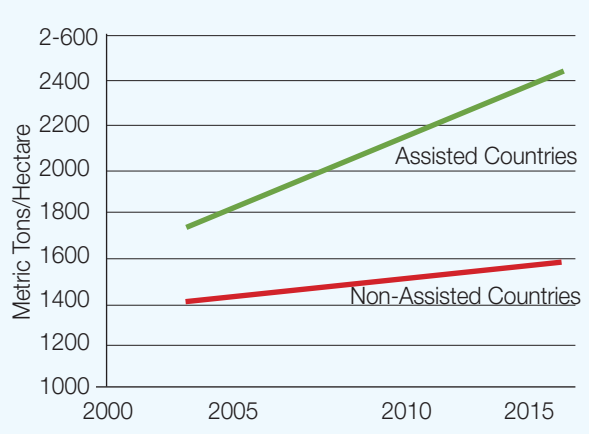


Figure 1: Cereal (maize and rice) yield trends in African countries receiving seed systems assistance vs. no assistance, 2000-2017.

There are many moving parts that must be addressed, including the impact of COVID-related shutdowns on the infrastructure and markets that connect farmers to consumers. But we must also stay focused on the fundamentals that supply that food in the first place.

MANY COUNTRIES AND MILLIONS OF FARM FAMILIES LEFT BEHIND

Every African country where seed of the new crop varieties has reached farmers at a significant scale has seen progress. Increased farm yields have delivered improved nutrition to people in rural areas who need it most. Unfortunately, the number of countries where access to improved seed among smallholder farmers has been achieved is still limited. As a result, the benefits of the new varieties have remained out of the reach of many millions of Africa's farming families. The Alliance for a Green Revolution in Africa (AGRA), operating with support from a coalition of donor agencies, has implemented its seed program in 13 countries. But there are 15 additional countries, home to an estimated 38 million farmers, which have effectively been left behind in seed access (Fig 2).

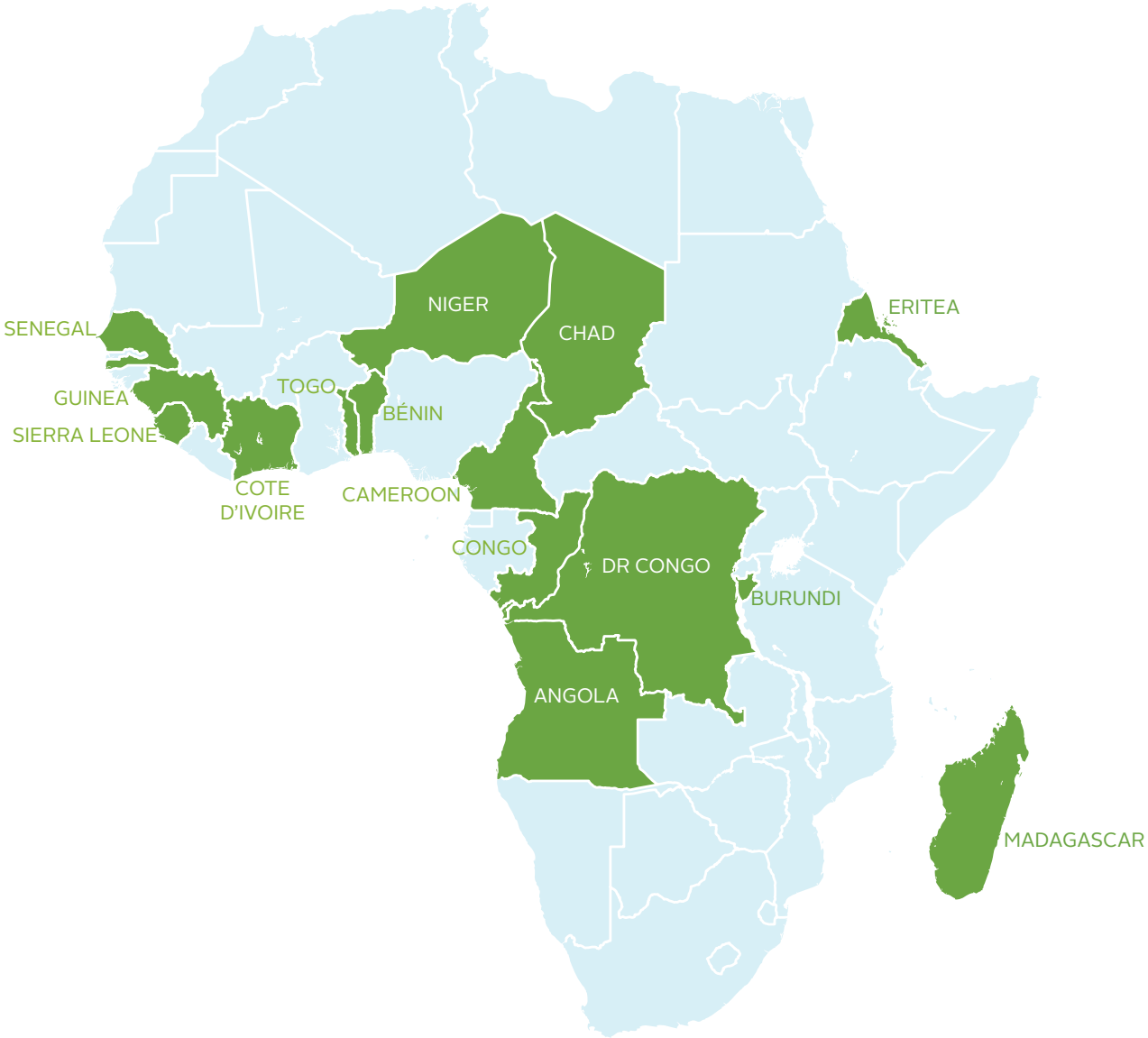


Figure 2: 15 African countries with large agricultural potential where farmers lack access to improved seed.

RESPONDING TO THE CHALLENGE: A NEW SEED SYSTEMS INITIATIVE IN AFRICA

Extending the benefits of nutritious, higher-yielding, climate-resilient crops to farmers in African countries left behind in this seed revolution is the mission of Seed Systems Group (SSG), a non-profit, technical and financial assistance organization registered in the USA (501 c3) and headquartered in Nairobi, Kenya.

Seed Systems Group has identified 15 African countries with a total population of over 320 million people and an estimated 38 million farmers who have seen little or nothing of the new crop varieties or experienced any improvements to their seed delivery systems.

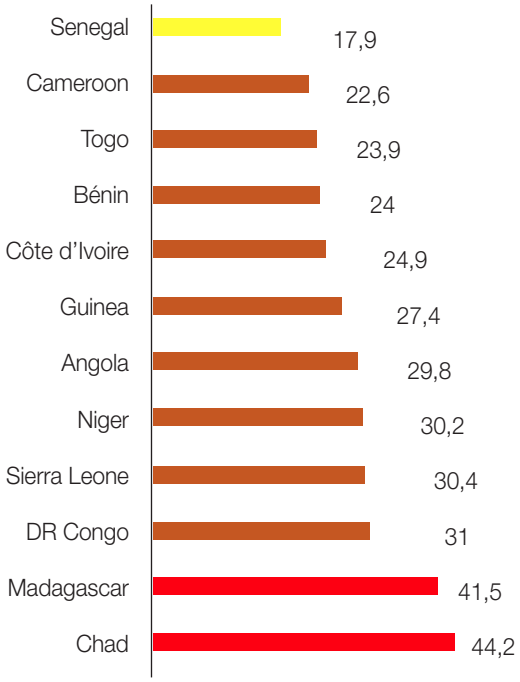


Figure 3: Global Hunger Index (2019).

These countries have few or no private seed companies operating within their borders, and imported seed remains prohibitively expensive to smallholder farmers, who continue to plant seed of land races or obsolete varieties developed 30 or more years ago.

Average child malnutrition rates in these countries stands at 38%, with several reaching over 50% (Figure 4). Moreover, population growth rates in these countries average 2.8%, meaning populations are doubling every 25 years.

Since June of 2019, SSG technical staff, working with crop breeding and seed specialists from Cornell University have travelled to these countries, meeting with agricultural officials, researchers, private seed entrepreneurs, and farmers to develop individualized country strategies for seed systems development.

In virtually every country visited, the buy-in from government to SSG's proposals has been met with resounding approval. **Ministers and high-level government officials of the 15 target countries have expressed their desire to collaborate with SSG in writing.**

Everywhere the teams have travelled, the message from government officials has been: "The time is right" for a concerted push for seed systems development. They, too, realize that they have been left behind. **The food challenges caused by the COVID-19 pandemic bring added urgency to this work—and an opportunity to implement a proven path to improving the resilience of local food systems that can pay off long after the pandemic recedes.**

SSG has established a five-year strategy to develop improved seed supply systems in 15 target countries. Implementation of the full strategy will require approximately $95.4 million. The proposed activities are described briefly, below.

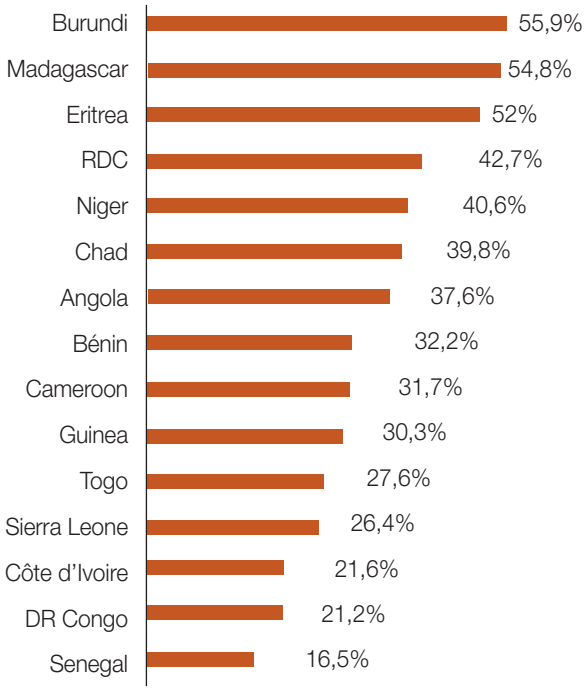


Figure 4: Level of stunting in children under age 5 (2019).

FIVE STRATEGIC INTERVENTIONS

In order to transform seed systems and achieve productivity gains on a par with other emerging economies in Africa, the team has identified five key investment themes for support over a period of five years. The key investment themes are:

1) Testing and release of new crop varieties
2) Seed enterprise development
3) Private sector-led extension
4) Agro dealer development
5) Seed policy and advocacy

1 Testing and Release of New Crop Varieties

The adoption of high-yielding crop varieties among smallholder farmers begins with teams of crop scientists testing, selecting and releasing improved varieties of the countries' principal food crops and more nutritious vegetable crops. **New traits such as earlier maturity, increased nutrient composition, higher yield, disease resistance, and drought tolerance are one of the best ways international assistance can help local farmers to improve their incomes, diets and adapt to climate change**. Direct farmer input is key to selecting the best-adapted and most acceptable varieties. The trove of new, Africa- adapted varieties developed by international and national breeding teams can now be introduced in left-behind countries to "leapfrog" the otherwise time-consuming step of breeding new varieties from scratch. Once released by the national agricultural research system, these varieties are licensed to private, independent seed companies for commercialization.

To achieve SSG's mission of one-third of farmers adopting improved varieties and quality seeds being made available in each of SSG focus countries in next 10 years, testing 120 – 150 varieties in each country, release in each country of 2 - 5 hybrids of maize (yield potential - 8 tons/ha), 2 – 5 improved varieties of rice (3 tons/ha) and 2 – 4 varieties each of soybean, sorghum, cowpea, groundnut and horticultural crops such as tomatoes, pepper, and nutritious indigenous vegetables will be required (Figure 5).

The investment required to implement these activities is estimated at US$21.41 million over a period of 5 years across the 15 target countries

2 Seed Enterprise Development

Driving supply of new seed at farmer level requires a critical number of private, independent seed companies capable of producing, processing, and marketing better seed to farmers through an open, competitive market system. Highly capable seed entrepreneurs, including many women and young "agri-preneurs" exist throughout Africa, but often lack the specialized knowledge or capital needed to establish companies capable of producing, packaging, and distributing quality seed. **Women seed entrepreneurs have figured strongly in the emergence of seed business in Africa, a trend that was highlighted by the awarding of the Africa Food Prize for 2017 to Maimouna Coulibaly, CEO of Faso Kaba Seed Company of Mali.**

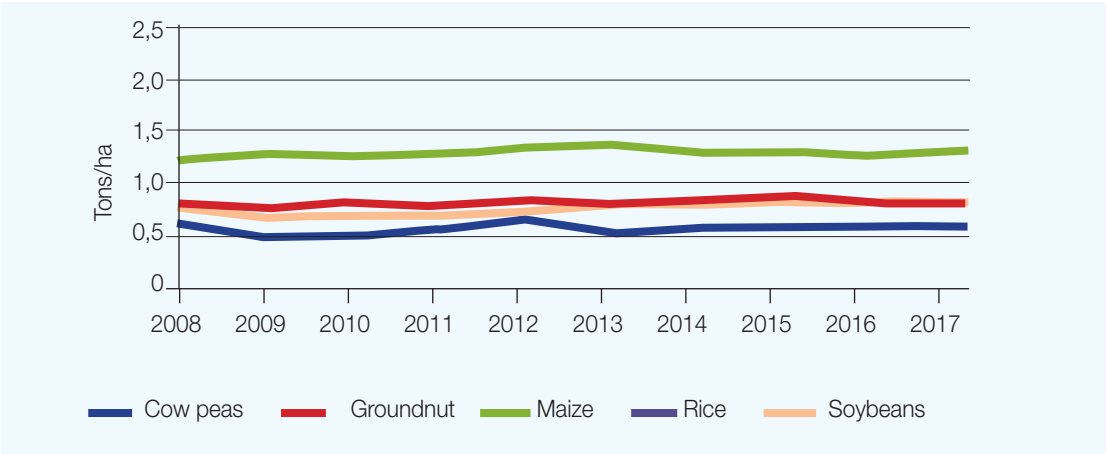


Figure 5: Yield trends for major crops in the target countries.

SSG will provide one-time-only "start-up grants" to promising emerging seed companies to help them increase production, broaden their marketing via agro-dealers, develop new products through links to public breeders and undergo intensive training in the key areas of production, processing, marketing, business management and quality control and link growing seed companies to impact investors, start-up venture funding agencies, corporate investment partners and philanthropic organizations aiming to bring change in the target countries. The goal will be to bring the enterprises to the stage where they can qualify for commercial credit from local banks and other financial institutions.

Over the first five years SSG will help establish 65 enterprises in the target countries that are self-sustaining, progressing and growing. The average active engagement span for SSG with each of these enterprises is expected to be three years (Figure 6).

Our analysis targets investments of US$23.24 million on this component across the 15 countries.

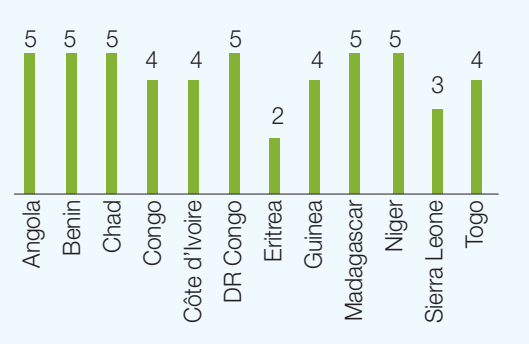


Figure 6: Number of seed enterprises to be supported.

3 Private Sector-led Extension

Engaging the drive and energy of private sector to inform farmers of the value of improved seed and other modern practices has proven more effective than traditional, public sector extension. Simultaneous to the establishment of seed supply, SSG will conduct thousands of on-farm demos of new varieties. Self-employed "Village- Based Advisors" (VBAs) will be recruited, trained to teach farmers how to cultivate the new seed using fertilizer, row spacing, weeding, and other modern practices, and rapidly distribute hundreds of thousands of small (50 gram) packs of new seed plus 200 gram packs of fertilizer to fellow farmers. Recruitment of VBAs also offers a new form of rural and youth employment, as these are often young farmers who are more open to trying new technologies, and many go on to establish agro-dealerships.

The adoption and spread of mobile phones among farmers have dramatically increased the impact that can be achieved through private sector-led extension and VBAs, more specifically. VBAs will be facilitated to communicate messages regarding seed availability, farmer field day meetings, opportunities for accessing fertilizer and other inputs, and even grain, legume, and vegetable marketing opportunities. VBAs can also be facilitated to access relevant ICT applications, weather predictions, and instructive videos to accelerate the adoption of new technologies and management practices.

Leveraging relevant, continually evolving ICT platforms and facilitation of self-employed VBA's will enable SSG to efficiently achieve results at an estimated cost of US$17.91 million in the 15 target countries over a period of 5 years.

4 Agro Dealer Development

The final link in the seed value chain is village-level supply of seed through private, local shop owners. Young, village-based entrepreneurs – especially women entrepreneurs – are often crucial to introducing new seed through these small businesses and will be prioritized for this assistance. SSG will train these emerging business people in practical business management skills. It will also provide start-up, matching grants and technical assistance to local entrepreneurs to open seed and input supply shops. **The establishment of private, locally-owned and operated input shops creates another source of rural employment and ensures the regular, dependable supply of seed, fertilizer, and other technologies at a local level**.

The proposed interventions will be directed towards development of a sustainable network of agro-dealers with businesses located at strategic rural areas with strong links to a wide range of seed and other input suppliers in order to reach smallholder farmers with technical knowhow and quality inputs at affordable prices.

The agro-dealer development model will be supported by five key elements (Figure 7):

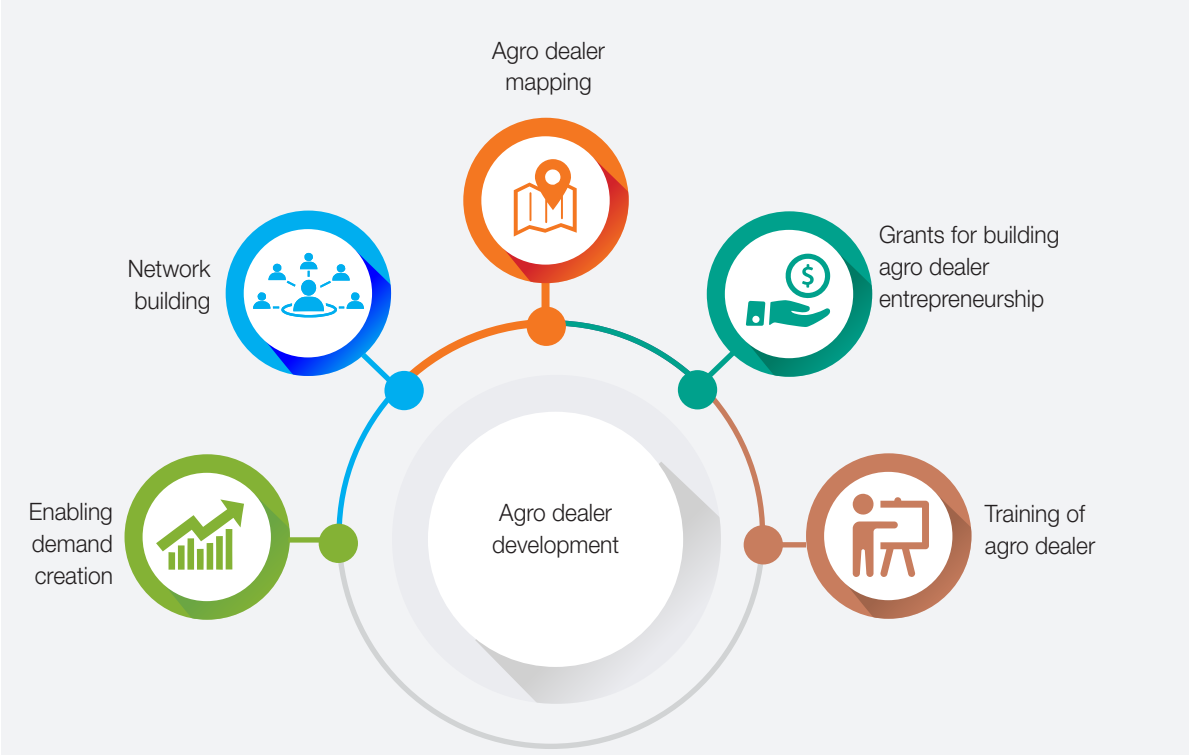


Figure 7: Agro-dealer development model.

Grants will be provided to open new outlets, refurbish or relocate shops, procure inventory supplies and build cost-effective storage units. SSG aims to ensure existence of at least one agro-dealer for every 5,000 farmers in each of the focus countries. SSG envisages supporting 9,083 agro-dealers across the target countries as depicted in (Fig. 8).

The cost of these activities over a period of five years is estimated at US$14.23 million.

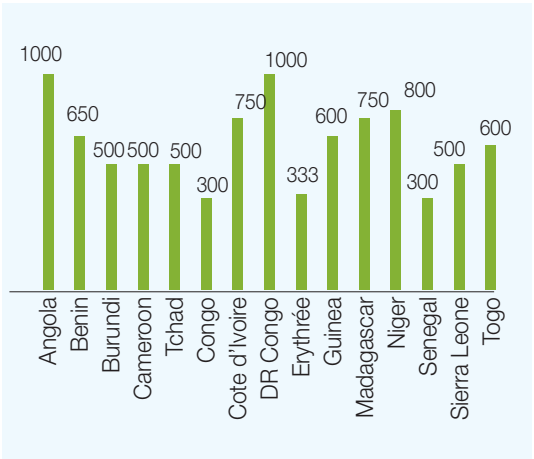


Figure 8: Number of agro-dealers to be supported.

5 Seed Policy and Advocacy

Seed systems development also requires direct, consistent engagement with high-level government officials to modernize seed policies and procedures and make them private sector-friendly. Engaged seed policy leaders can, and often do, become champions for seed supply at a national level.

SSG's proposal is well-timed to take advantage of several recent developments in seed harmonization, which streamline the regulatory process for variety release and registration and national seed certification regimes. Harmonized seed conventions include the Economic Community of West Africa States (ECOWAS), the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA), and the Southern African Development Community (SADC). The target countries are all part of single or multiple regional groups (Figure 9).

SSG will work closely with governments to develop a regulatory framework that increases seed supply and improves seed quality. SSG envisages a modest investment of US$2.78 million for seed policy improvement over a period of 5 years across 15 target countries in Africa.

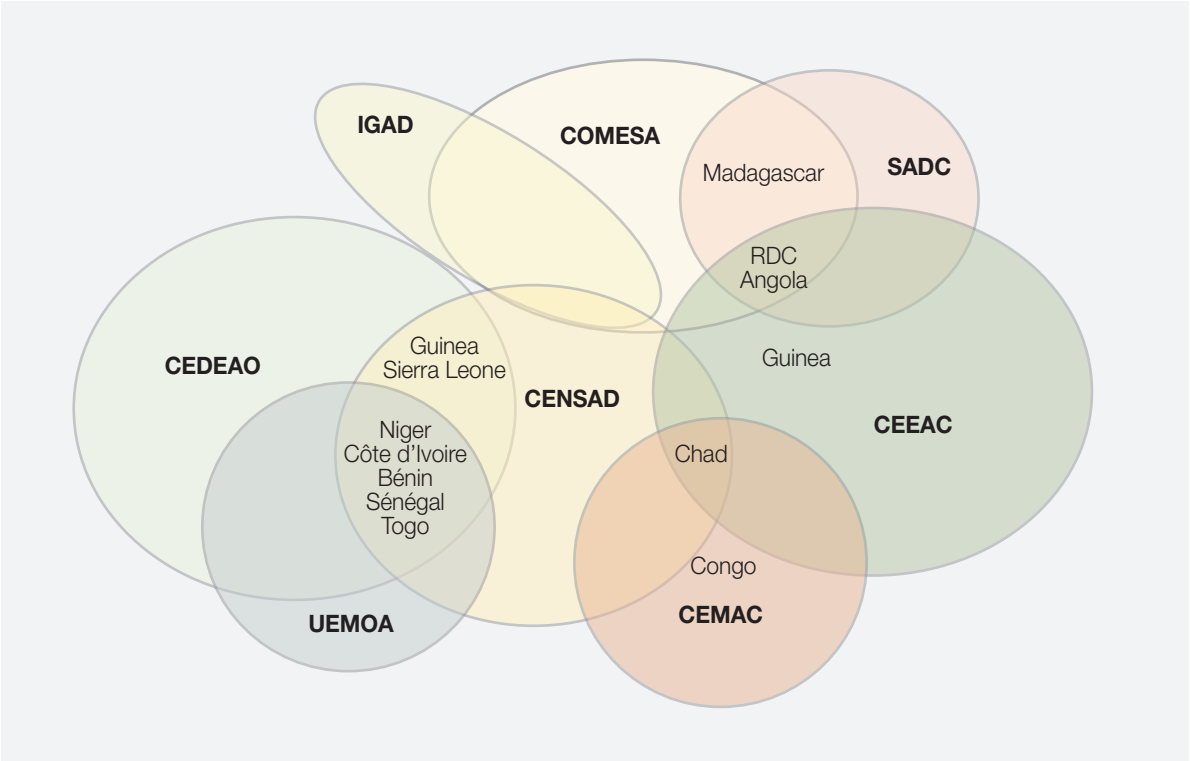


Figure 9: Regional groups for target countries.

PROGRAM INVESTMENT, EXECUTION AND IMPACT

SSG has created a lean, accountable structure that provides for dynamism and stability while ensuring a people-centered culture, operating in a rapid learning and fast decision cycle. Technology enablement across the organization will drive efficiency and an informed decision-making process. SSG operates from two regional offices in East and West Africa making targeted investments in local groups and individuals and monitor progress electronically and via frequent site visits. SSG also has partnered with the Seed Enterprise Management Institute of the University of Nairobi to offer their training program, which provides targeted instruction in seed production, marketing and basic business management practices. This training already was available as a virtual course, which can be especially valuable given the travel restrictions that have shutdown so much development work in the region.

Our analysis and planning has revealed that transforming seed supply in the 15 target countries will require $US 95.4 million over five years. 80% of the investment will be invested directly to target countries to strengthen their seed systems.

SSG believes that a bold, groundbreaking intervention is needed to improve nutrition and incomes among rural populations and help them recover from the many negative impacts of the COVID-19 pandemic. We are now soliciting investment from donors for both the full 15 country plan and for specific country based initiatives Fig 11. Investment plan by country. With this in mind, the final section of this report we have identified a number of high-impact investment and "quick wins" available in each country.

The investment will:

- Increase the number of likely beneficiary farmers to 50% of all farmers, or 19 million farmers;
- Produce approximately 8.8 million MT of additional food worth approximately $US 2 billion;
- Establish 65 private seed enterprises and 9,083 agro-dealers;
- Strengthen the capacity of 15 national agriculture institutes;
- Create stable, productive employment for 75,000 individuals in rural areas; and,
- Train 157 MS and 28 Ph.D. breeders.

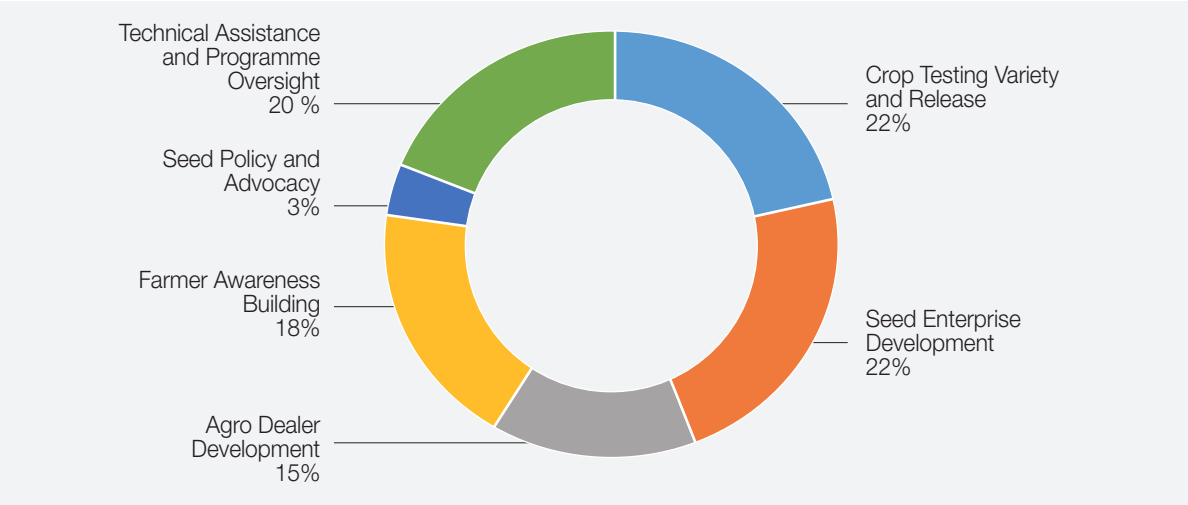


Figure 10: SSG five-year budget breakdown.

It is projected that these interventions will broadly increase the availability of more nutritious food and catalyze improvements in the food systems of these countries, including the growth of grain, legume, and vegetable markets, opportunities for regional trade, and a revitalization of national research systems. We also must not allow this crisis to derail efforts made for decades in fighting the intertwined problems of hunger, in fighting the intertwined problems of hunger, malnutrition and poverty. Instead, it is now more important than ever to focus on proven solutions that offer short- and long-term payoffs. The need for joint concerted efforts by SSG, philanthropic players, and partners in the agricultural development space committed to developing more productive, sustainable and resilient food systems in sub-Saharan Africa cannot be overemphasized. By engaging governments and employing a public-private model of delivering improved seed into rural farming areas of these left-behind countries we can inject new hope and opportunity into the lives of some of the most marginalized people in the world.

ADAPTING INTERVENTIONS TO COVID-19

It can be done. The new rules of living under a pandemic are teaching us new ways of accomplishing tasks – perhaps not perfectly, but certainly "good enough in a crisis. Local technical staff and farmers can be guided through the basics via messages to their mobile phones, email, and video link. Lectures on how to produce seed and even manage seed enterprises can be delivered electronically. Funds can be transferred to institutions electronically and to individuals through digital technologies. Parent seed can be shipped via courier service. Village-based advisors can also assist in transmitting messages to farmers related to safe agricultural practices under COVID-19."

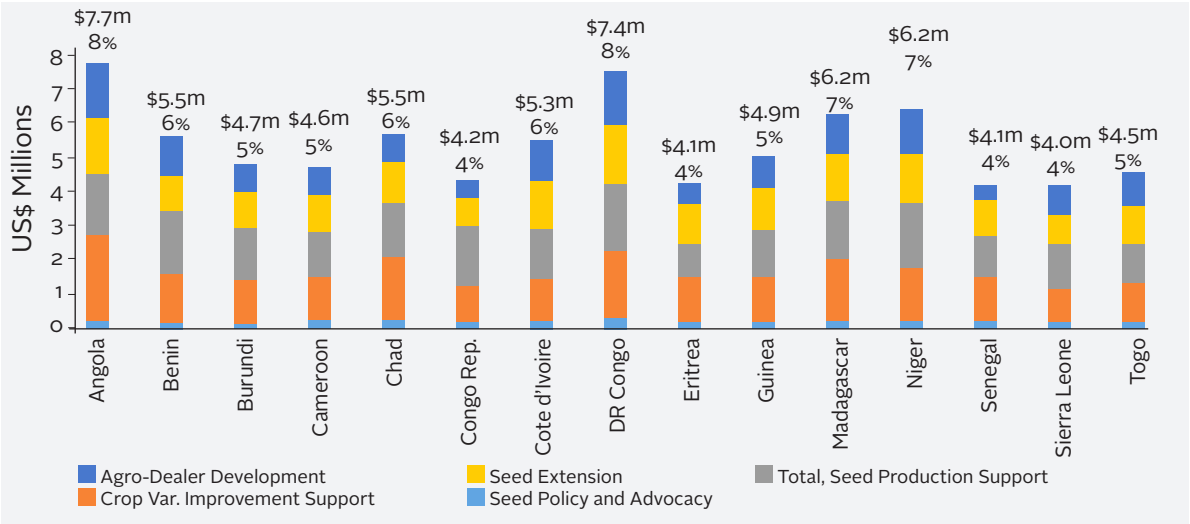


Figure 11: Investment Plan by Country

ANGOLA

33M Population

37.6% Malnourished Children Under 5

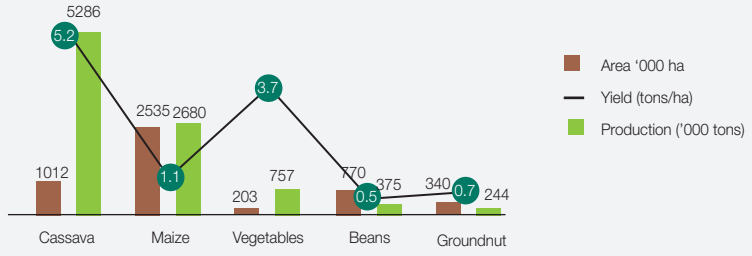
55% Women in Agricultural Employment

22.2% Suffer from Food Insecurity

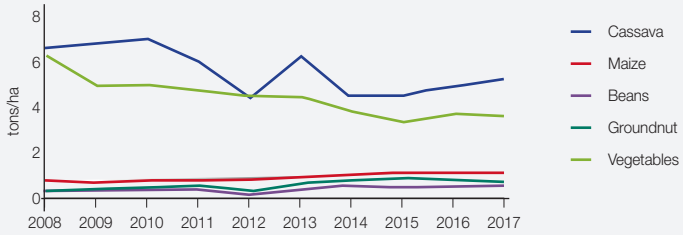
10.2% Agricultural Share to GDP

83.17 Climate Risk Index

By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap

Quick Wins

Two private Angolan seed companies with big potential.

Government support for accelerated growth of the national seed sector in Angola.

Our Vision

Strategic investment in the Angolan seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

1000+ NEW AGRO-DEALERS CREATED

5 NEW PRIVATE SEED COMPANIES ESTABLISHED

204% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 7.70 Million

BENIN

12M Population

32.2% Malnourished Children Under 5

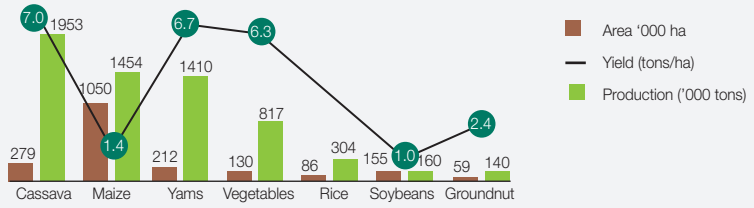
33% Women in Agricultural Employment

40.1% Suffer from Food Insecurity

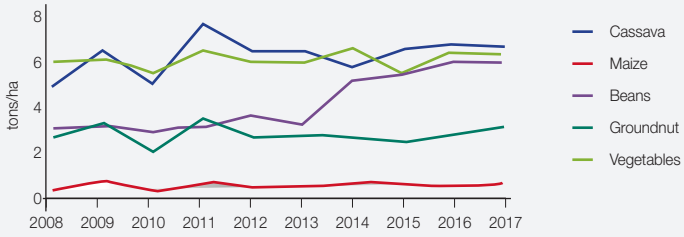
25.6% Agricultural Share to GDP

107.5 Climate Risk Index

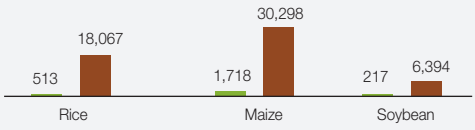
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Active, pro-private sector agriculture ministry.

Close proximity to Nigerian food markets

Our Vision

Strategic investment in the Beninese seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

650 NEW AGRO-DEALERS CREATED

5+ NEW PRIVATE SEED COMPANIES ESTABLISHED

181% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 5.56 Million

COUNTRY-LEVEL HIGHLIGHTS | BENIN

BURUNDI

12M Population

56% Malnourished Children under 5

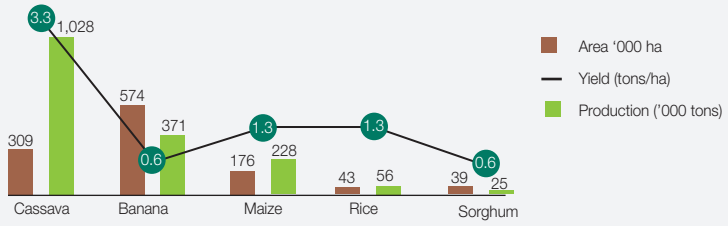
84% Women in Agricultural Employment

15% Suffer from Food Insecurity

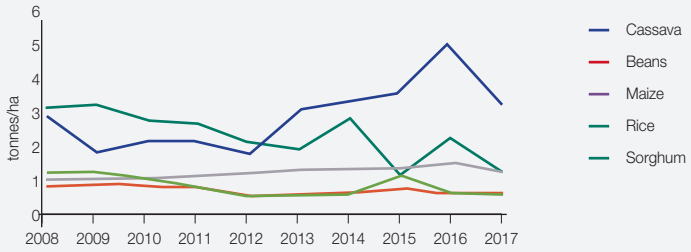
10.2% Agricultural Share to GDP

73 Climate Risk Index

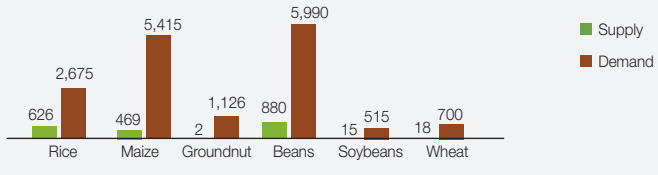
By the Numbers



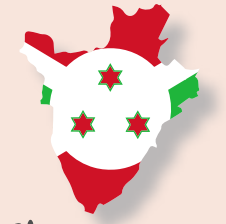
Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins



Emerging private sector seed companies

A strong government support for accelerated growth

Our Vision

A strategic investment in the seed system in Burundi will raise the farms reduced productivity thanks to the cultivation of seeds at higher performance and more resilient.

500 NEW AGRO-DEALERS CREATED

5 NEW PRIVATE SEED COMPANIES ESTABLISHED

70% INCREASE IN QUALITY SEEDS

INTRODUCED **Improved varieties**

Total Investment: 4.74 Million

CAMEROON

26M Population

31.7% Malnourished Children under 5

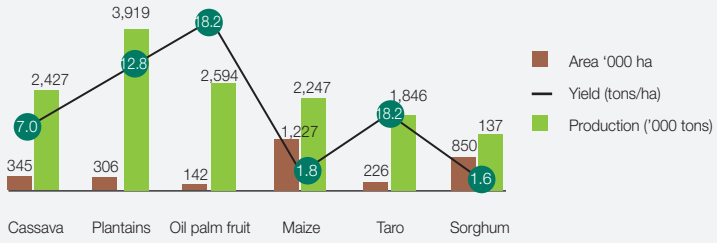
47% Women in Agricultural Employment

16% Suffer from Food Insecurity

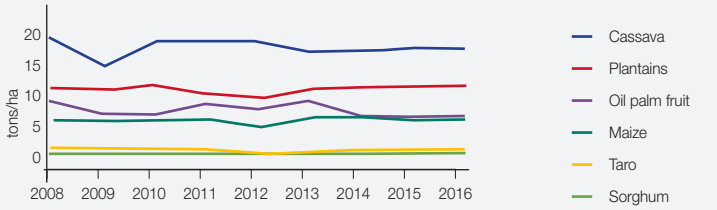
23.1% Agricultural Share to GDP

97 Climate Risk Index

By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap

Quick Wins

Private sector development

High priority for agriculture development

Our Vision

Strategic investment in Cameroon's seed system will spur producers to end decades of declining productivity by growing higher yielding and more resilient seeds.

500+ NEW AGRO-DEALERS CREATED

4 NEW PRIVATE SEED COMPANIES ESTABLISHED

23% INCREASE IN QUALITY SEEDS

INTRODUCED **Improved varieties**

Total Investment: 4.63 Million

COUNTRY-LEVEL HIGHLIGHTS | CAMEROON

CHAD

16M Population

39.8% Malnourished Children Under 5

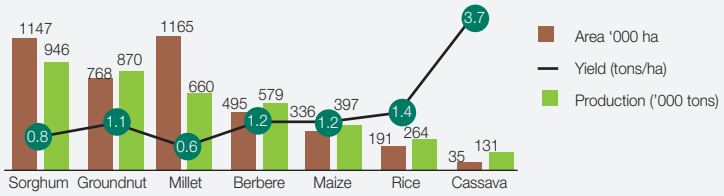
81% Women in Agricultural Employment

25.6% Suffer from Food Insecurity

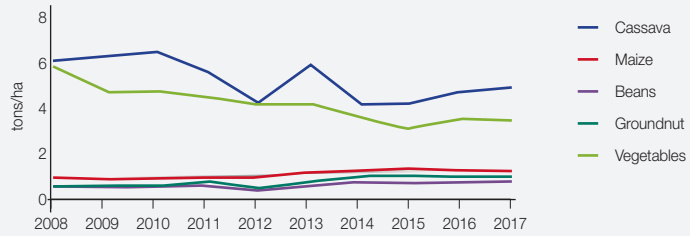
59% Agricultural Share to GDP

116 Climate Risk Index

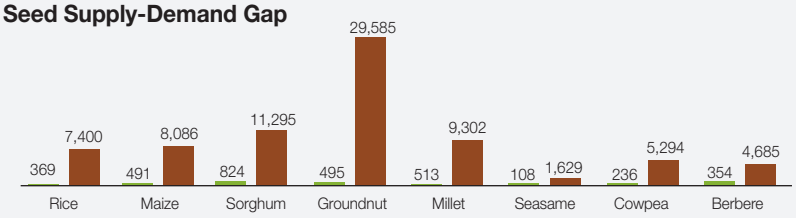
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Vast, underutilized agricultural lands

National consensus on public-private seed supply model

Our Vision

Strategic investment in the Chadian seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

500 NEW AGRO-DEALERS CREATED

5+ NEW PRIVATE SEED COMPANIES ESTABLISHED

157% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 5.55 Million

CONGO REPUBLIC

5.3M Population

21% Malnourished Children Under 5

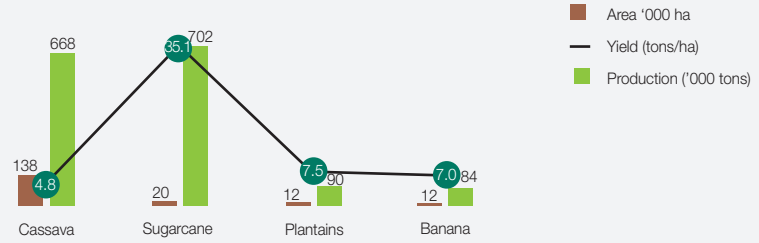
36% Women in Agricultural Employment

48% Suffer from Food Insecurity

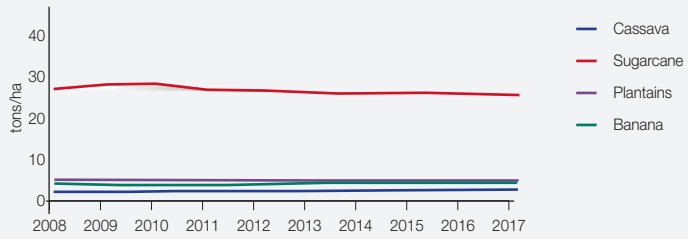
59% Agricultural Share to GDP

116 Climate Risk Index

By the Numbers



Yield trends for major crops



Quick Wins

Strong leadership in agricultural research

High priority for agricultural development

Our Vision

Strategic investment in the Congo Republic seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

300 NEW AGRO-DEALERS CREATED

4+ NEW PRIVATE SEED COMPANIES ESTABLISHED

35% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 4.21 Million

COUNTRY-LEVEL HIGHLIGHTS | CONGO REPUBLIC

CÔTE D'IVOIRE

26M Population

21.6% Malnourished Children Under 5

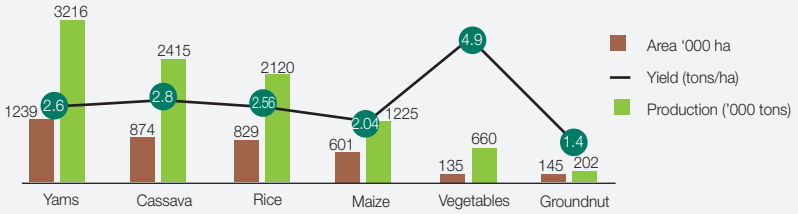
40% Women in Agricultural Employment

26.8% Suffer from Food Insecurity

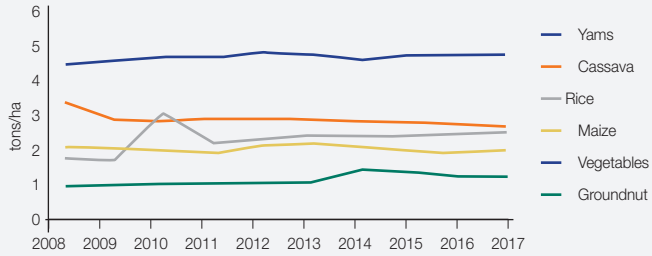
17.4% Agricultural Share to GDP

77.67 Climate Risk Index

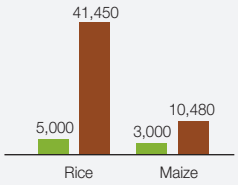
By the Numbers



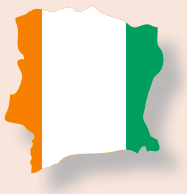
Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins



Strong history of public-private partnership in agriculture

Large cadre of agricultural scientists

Our Vision

Strategic investment in the Cote D'Ivoire seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

750 NEW AGRO-DEALERS CREATED

6+ NEW PRIVATE SEED COMPANIES ESTABLISHED

100% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 5.39 Million

DR CONGO

89M Population

42.7% Malnourished Children Under 5

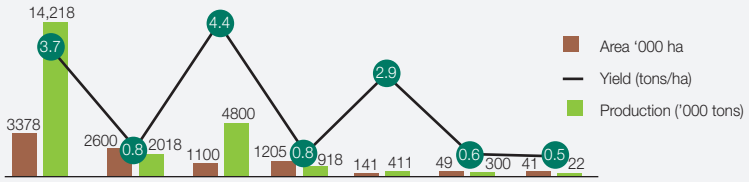
68% Women in Agricultural Employment

70% Suffer from Food Insecurity

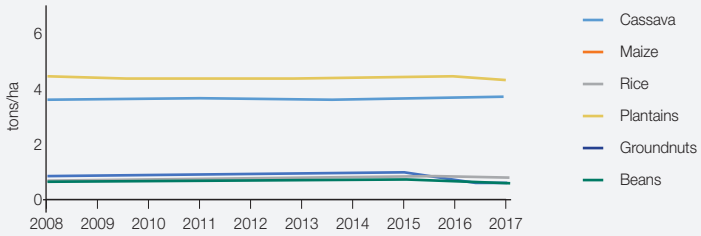
21.1% Agricultural Share to GDP

59 Climate Risk Index

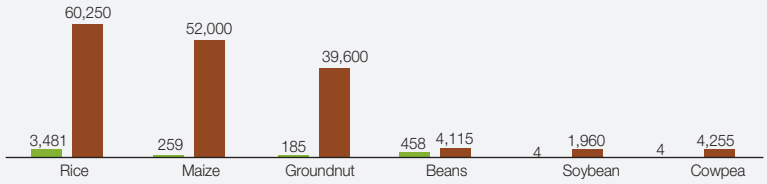
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

New government giving high priority to agriculture

Dynamic emerging local seed companies

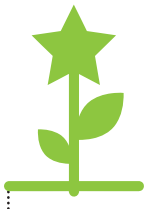
Our Vision

Strategic investment in the Democratic Republic of the Congo seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

1000 NEW AGRO-DEALERS CREATED

8 NEW PRIVATE SEED COMPANIES ESTABLISHED

310% INCREASE IN QUALITY SEEDS



Improved varieties INTRODUCED

Total Investment: 7.47 Million

COUNTRY-LEVEL HIGHLIGHTS | DR CONGO

ERITREA

5M Population

52% Malnourished Children Under 5

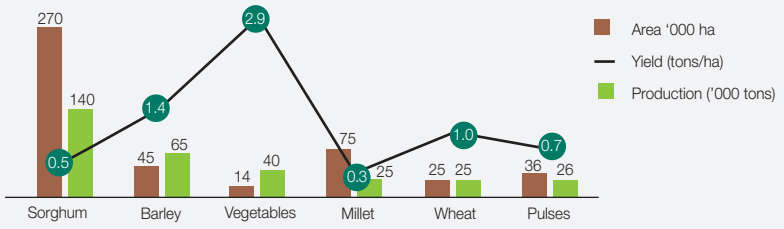
66% Women in Agricultural Employment

66% Suffer from Food Insecurity

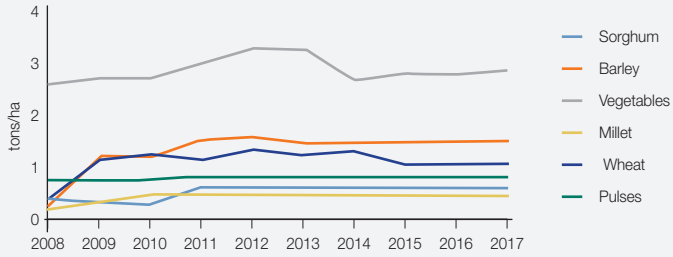
11.7% Agricultural Share to GDP

116 Climate Risk Index

By the Numbers



Yield trends for major crops



Quick Wins

Committed leadership for agricultural development

Strong links between researchers and seed producers

Our Vision

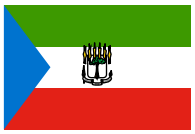
Strategic investment in the Eritrea seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

2+ NEW PRIVATE SEED COMPANIES ESTABLISHED

35% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 4.10 Million



GUINEA

13M Population

30.3% Malnourished Children Under 5

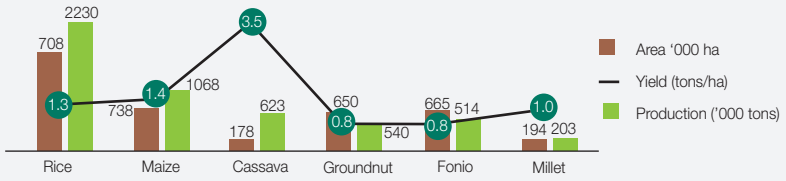
70% Women in Agricultural Employment

46.5% Suffer from Food Insecurity

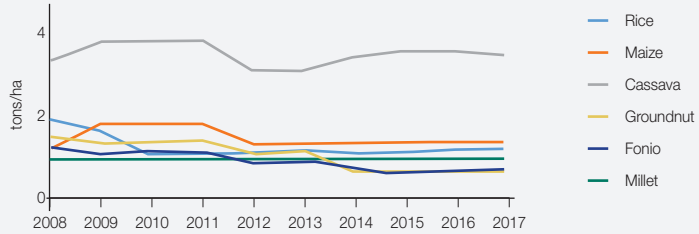
19.5% Agricultural Share to GDP

116 Climate Risk Index

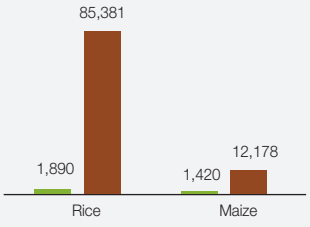
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Huge, untapped agricultural potential

Large number of strong farmer cooperatives

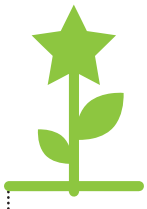
Our Vision

Strategic investment in the Guinea seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

600 NEW AGRO-DEALERS CREATED

4+ NEW PRIVATE SEED COMPANIES ESTABLISHED

157% INCREASE IN QUALITY SEEDS



Improved varieties INTRODUCED

Total Investment: 4.94 Million

COUNTRY-LEVEL HIGHLIGHTS | GUINEA

MADAGASCAR

28M Population

54.8% Malnourished Children Under 5

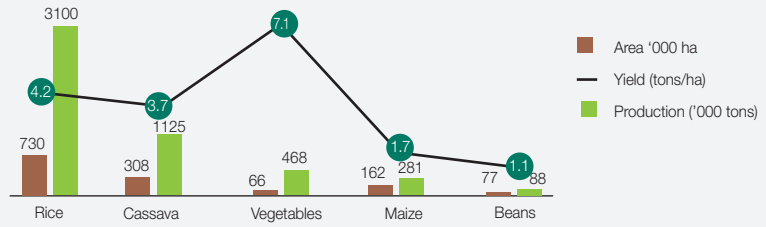
65% Women in Agricultural Employment

70.7% Suffer from Food Insecurity

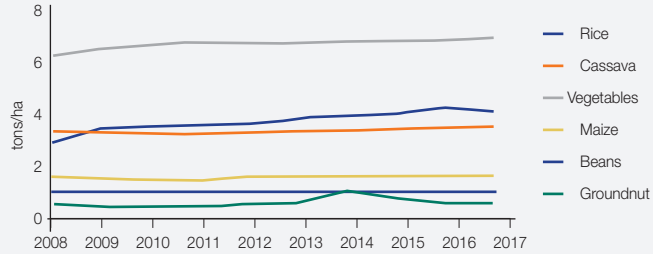
23.7% Agricultural Share to GDP

15 Climate Risk Index

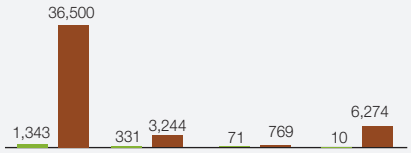
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Huge potential for closing yield gaps through improved seed

Young, energetic public leadership

Our Vision

Strategic investment in the Madagascar seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

750 NEW AGRO-DEALERS CREATED

8+ NEW PRIVATE SEED COMPANIES ESTABLISHED

180% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 6.25 Million

NIGER

24M Population

40.6% Malnourished Children Under 5

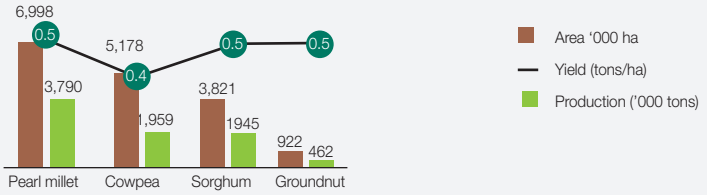
71% Women in Agricultural Employment

25.6% Suffer from Food Insecurity

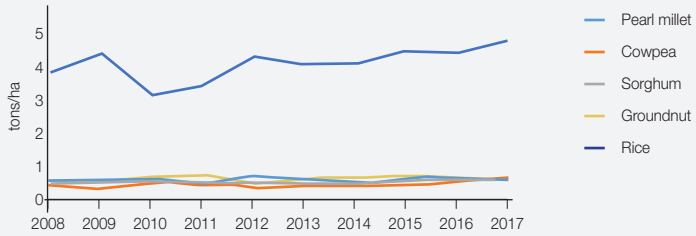
41.5% Agricultural Share to GDP

26.5 Climate Risk Index

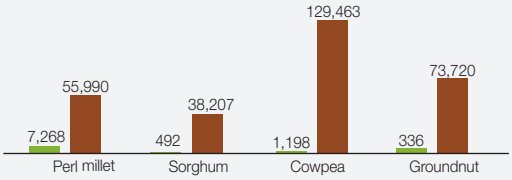
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Several well-managed, private seed companies

Strong national capacity in crop breeding

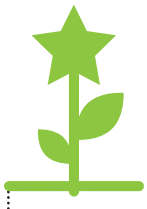
Our Vision

Strategic investment in the Niger seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

800 NEW AGRO-DEALERS CREATED

5+ NEW PRIVATE SEED COMPANIES ESTABLISHED

195% INCREASE IN QUALITY SEEDS



Improved varieties INTRODUCED

Total Investment: 6.29 Million

SENEGAL

16M Population

55% Malnourished Children under 5

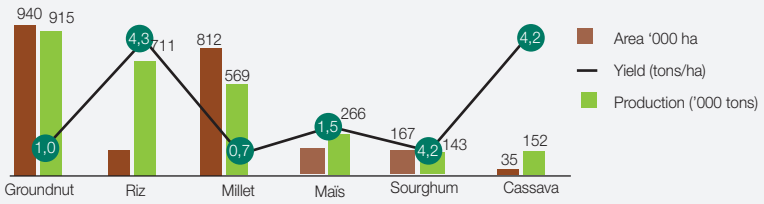
60% Women in Agricultural Employment

17% Suffer from Food Insecurity

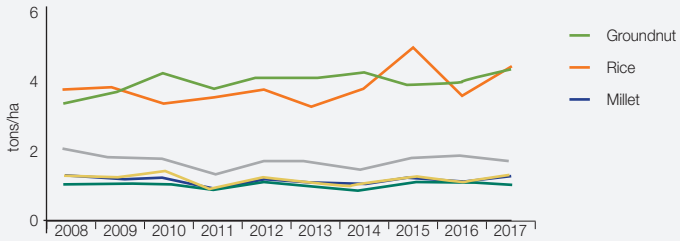
17% Agricultural Share to GDP

110 Climate Risk Index

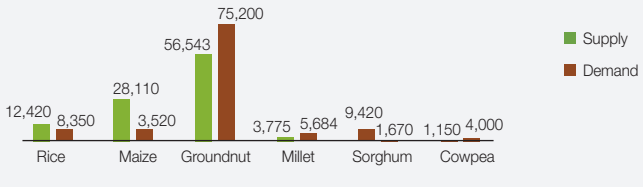
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

Huge, untapped agricultural growth potential

Strong partnerships between the national research system and CG Centers

Our Vision

Strategic investment in Senegal's seed system will spur producers to end decades of declining productivity by growing high-yielding, more resilient seeds.

350 NEW AGRO-DEALERS CREATED

6 NEW PRIVATE SEED COMPANIES ESTABLISHED

75% INCREASE IN QUALITY SEEDS

INTRODUCED **Improved varieties**

Total Investment: 4.14 Million

SIERRA LEONE

8M Population

54.8% Malnourished Children Under 5

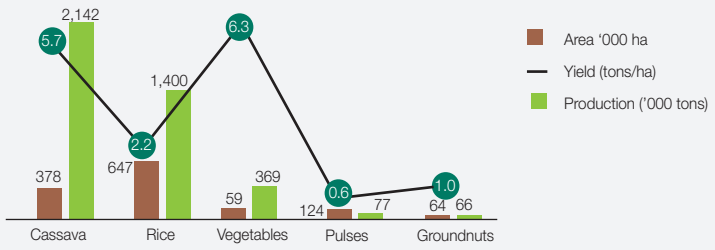
24% Women in Agricultural Employment

31% Suffer from Food Insecurity

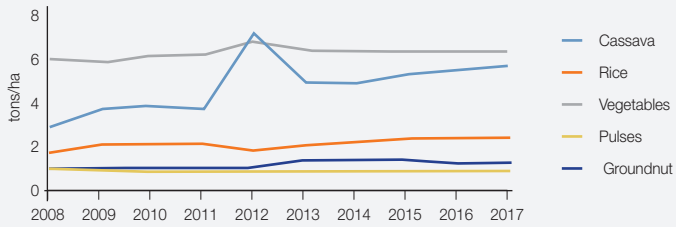
60.7% Agricultural Share to GDP

15.67 Climate Risk Index

By the Numbers



Yield trends for major crops



Quick Wins

Huge potential for closing yield gaps through improved seed

Committed cadre of public plant breeders

Our Vision

Strategic investment in the Sierra Leone's seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

2+
NEW PRIVATE SEED COMPANIES ESTABLISHED

35%
INCREASE IN QUALITY SEEDS

Improved varieties
INTRODUCED

Total Investment: 4.06 Million

TOGO

7.8M Population

32% Malnourished Children Under 5

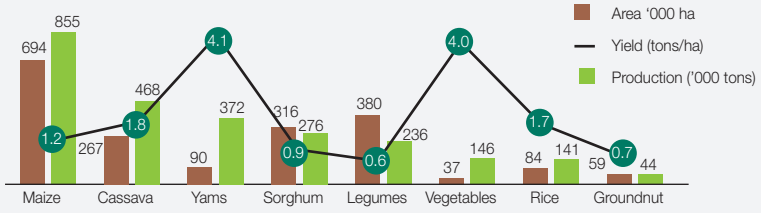
34% Women in Agricultural Employment

30% Suffer from Food Insecurity

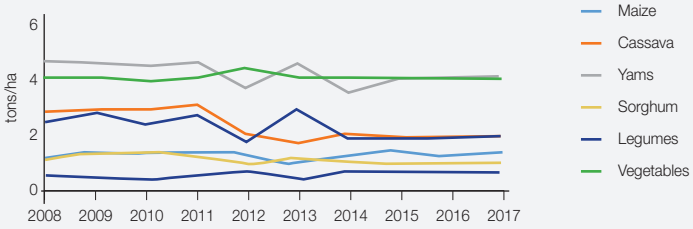
28% Agricultural Share to GDP

106 Climate Risk Index

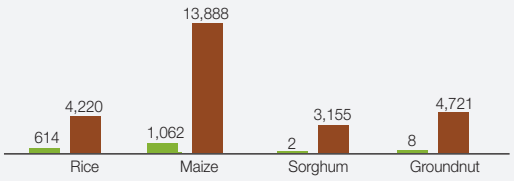
By the Numbers



Yield trends for major crops



Seed Supply-Demand Gap



Quick Wins

High priority for seed systems development at national level

Three local seed companies eager to scale up supply

Our Vision

Strategic investment in the Togo seed system will spur farmers to reverse decades of declining productivity through the cultivation of higher-yielding, more resilient seed.

600 NEW AGRO-DEALERS CREATED

6+ NEW PRIVATE SEED COMPANIES ESTABLISHED

82% INCREASE IN QUALITY SEEDS

Improved varieties INTRODUCED

Total Investment: 4.51 Million

COUNTRY-LEVEL HIGHLIGHTS | TOGO

Every farmer needs good seed

Rapidly growing populations and a changing climate contribute to widespread child malnutrition and frequent social unrest in rural areas of Africa, and are placing ever-greater pressure on farmers to improve their harvests.

Providing them with access to seed of improved crop varieties bred for higher yields and resistance to climate change, pests and diseases is a proven solution. Improved seed allows farmers to increase their productivity and makes cropping systems more sustainable in the context of a growing world population.

Cornell University

Sathguru Since 1985 Catalysing Success

SEED SYSTEMS GROUP

Seed Systems Group
Riverside Studios
Riverside Lane, Nairobi, Kenya
Tel: +254 734 69999
+254205258042
info@seedsystemsgroup.org
www.seedsystemsgroup.org

The ROCKEFELLER FOUNDATION

AGRA Growing Africa's Agriculture