

## AGRA Impact Series



# AGRA supports the seed system in Rwanda

AGRA exists to contribute to the vision that Africa can feed itself and the world.

Agriculture is the economic mainstay of the majority of households in Rwanda and makes a significant contribution to Rwanda's economy. It accounts for approximately 30% of the GDP and is the biggest employer.

In all development blueprints, agriculture is billed to play a significant role to the structural transformation of the economy, contributing to economic growth, exports, job creation, increased land and labour productivity.

The sector is developing its seed system and product market. The national ambition is to shift agriculture from subsistence nature to a market-led sector.

The seed system and product market is one of those critical factors for the sector transformation as envisioned in the fourth Strategic Plan for Agriculture Transformation (PSTA 4).

AGRA is working with the Government of Rwanda by investing technical and financial resources to strengthen the seed system and extension services to raise farmer awareness on use of improved seeds.

Founded in 2006, AGRA is a farmer-centered,

African-led, partnerships-driven institution that is working to transform smallholder farming from a solitary struggle to survive to a business that thrives.

It aspires to modernize agriculture sector on the African continent by mainly making it market-driven and a data-based sector which will play an important role in the development of the countries on the continent.

This way, AGRA is committed to catalyze the economic development, wealth creation, hunger reduction and nutrition through inclusive agriculture transformation.

And, its goals are aligned very well with the global Sustainable Development Goals, Malabo Declaration, African Agenda 2063, and fall under Rwanda priorities to transform agriculture as stated in PSTA 4.

### AGRA investment in the seed system in Rwanda

Since 2018, AGRA has invested USD 10.8 Million in supporting a functional and strong seed system. With this investment, 463,500 farmers were reached out, of which 239,005 farmers have



adopted skills in yield-raising technologies.

11 705 MT Blended Fertilisers have been processed and sold by local blenders and 4513.6 MT Certified hybrid maize, bean, potato and Soybean seeds have been produced and processed locally.

AGRA roots for a vibrant and functional seed system because of its significant role among other intervening factors in the transformation of agriculture. High quality seed of improved varieties is frequently the central carrier for new technology to be applied in crop production for agricultural development.

It is also the basic tool for a secure food supply, income, nutrition as it helps obtaining acceptable crop yields in even less favourable production area. And, this is very appropriate to Rwanda where agricultural land is limited due to high population pressure.

### **AGRA in capacity building for a functional seed system in Rwanda**

Interventions in components of seed system have seen 37 researchers trained at postgraduate level in key different breeding programmes at Rwanda Agriculture and Animal Resources Development Board (RAB) since 2009.

Of the 37 trained scientists, 29 are Master of Science graduates while eight were trained at

PhD level. These trainings have radically changed the seed sector in Rwanda by creating a pool of local researchers that have to date participated in the development of 47 varieties of different seed crops, among them maize, beans, soybeans, Irish potatoes, sweet potatoes, bananas and more. In addition, there are 38 varieties of hybrid maize, beans, soybeans and Irish potatoes, candidates for release in 2020 and 2021 under current AGRA - PIATA grants.

Most of these varieties are under production and some, such as high on iron beans, are boosting national programmes to promote better nutrition feeding in the smallholder farming community.

In the last 10 years, AGRA has also supported RAB in 19 research projects valued at USD 4.58 Million, 6 of which valued at USD 1.18 Million are ongoing with one of them focused on reinforcing seed companies in seed technology and good agricultural practices.

Thus, by creating a pool of researchers, among other interventions, AGRA is making a big sustainable and strategic response to the country's desire to develop sustainable seed breeding programmes.

Rwanda has been until recently a net importer of hybrid maize, soybeans and wheat seeds.

But for the first time since a little over a decade ago, the country is poised to be self-sufficient in

maize hybrid seed by next Fiscal Year 2021-2022 that starts in July.

By the start of agricultural season 2022 A in September 2021, the country is set to have stopped importing maize seeds for distribution to citizens on government subsidy.

Thanks to AGRA work, complementing the unwavering commitment of the Rwanda Government, in particular the Ministry of Agriculture and Animal Resources (MINAGRI) and its agencies for creating and sustaining an enabling environment to do business in agriculture.

Mr. Jean Paul Ndagijimana, the AGRA Rwanda Country Manager sums it up:

“A few years ago, we didn’t have hybrid maize seeds in the country produced locally. Now we have enough.”

And, RAB’s Deputy Director General in charge of Agriculture Research and Technology Transfer, Dr. Charles Bucagu, expounds on the importance for this impressive development in Rwanda’s agriculture sector saying the advantage of applying hybrid seed is that “we know the parents of the breed and we are sure that the production will be huge”.

### **Support private sector led seed production**

Rwanda’s agenda to transform its agriculture is billed to private sector driven with government enacting policies to create an enabling environment. This, among other things pulled AGRA’s interest of building a vibrant seed sector.

In this endeavor, AGRA established a grant in 2017 through 2019 that acted as a vehicle to support seed companies in Rwanda and 15 seed companies were supported as a result of the grant to RAB to train weak start-up seed companies in seed technologies and support them in seed production activities through on-site skills transfer and in class training as a way of boosting seed production, processing and marketing capabilities in the private sector, an approach that fits well into the national aspiration of attaining a market-led agriculture sector driven by the private sector.

Seed system is a sophisticated value chain. It involves capacity building and research, coordina-



**A few years ago, we didn’t have hybrid maize seeds in the country. Now we have enough,”**

**Jean Paul Ndagijimana**

AGRA Rwanda Country Manager

tion of logistical work and strong regulatory system to examine the quality of seeds, and AGRA is happy that it was able to join the government’s efforts to link this network in Rwanda.

### **Results at a glance**

In season 2020A, the 15 seed companies produced 4,513.6 MT of improved seed of which Hybrid Maize was 3,560.4 MT, Beans was 106.9 MT, Soybeans was 388.4 MT and 457.9 MT of potato.

About 2,794.8MT valued USD 5.18 Million were directly sold to farmers through agro-dealers to plant in season 2021 A which started in September 2020.

After liberalization of the seed sector, one kilogramme of hybrid maize fetches FRW 2,281 compared to previous FRW 1,450. This gives optimism that while local seed companies are still nascent, they are bound to be able to produce and process seeds locally. All seed companies except two, sold 100% of their seed under their company branding name. This achievement is aligned with PSTA 4 where AGRA works with partners to increase incentives for private sector participation and investment into the sector.

### **Drive to increase uptake of improved seeds in farming community**

In the last two years, AGRA, MINAGRI, RAB and other stakeholders have embarked on sensitizing farmers to embrace use of improved seeds.

## RESULTS AT GLANCE

In season 2020A, 4,513.6 MT of improved seed were produced:



**3,560.4MT**

of Hybrid maize



**388.4MT**

Soyabeans

**2794.8MT**

Soyabeans



**106.9MT**

of beans



**457.9MT**

Soyabeans

**USD 5.18 Million**

were directly sold to farmers through agro-dealers to plant in season 2021 A which starts from September 2020.

After liberalization of the seed sector, one kilogramme of hybrid maize fetches FRW 2,281 compared to previous FRW 1,450. This gives optimism that while local seed companies are still nascent, they are about to be able to produce and process seeds locally. All seed companies except two, sold 100% of their seed under their company name brand. Thus, AGRA's work is aligned with PSTA 4 where it works with partners to increase incentives for private sector participation and investment into the sector.

Under AGRA support 6,682 events of agricultural extension service were conducted, including 5,785 variety demonstration plots, 229 farmer field days, 649 seed pack distribution, 8 radio programs, 2 TV programs, 2 trade shows and 7 through bulk SMS.

These activities raised awareness on the use of improved seeds and good agriculture practices. Some 287,995 smallholder farmers participated in the events, and AGRA is expecting that about 70 percent of these farmers adopted improved seeds. In addition, 3,497 agronomic trainings events were conducted reaching 239,055 people including smallholder farmers, seed company personnel, agro-dealers, field technicians, in the framework of increasing farmers' adoption of improved seeds.

During the period, October 2019 to September 2020, AGRA –Rwanda has reached out to 463,500 new farmers, with 'the good agricultural practices and seed technology', and this number surpassed the initial life of strategy target of 400,000 farmers. Once hybrid seeds have been produced and farmers mobilised to use them, accessibility must be ensured, hence significance of intensive awareness creation of quality seeds from improved varieties.

AGRA has intervened in strengthening a network



Mr. Sibomana Edouard, Production Officer at Top Seed Company in a multiplication plot.

of agro-dealers in Rwanda as a powerful tool to enable farmers' access to inputs. Agro-dealers have been trained in management of agricultural inputs and this is in line with digitizing management of seeds and fertilizer subsidy through Smart Nkunganire System (SNS).

AGRA has supported Bank of Kigali to develop

online application to ease the purchase of seeds and fertilizers. MOPA platform facilitates agro dealers to purchase seeds and fertilizer from accredited suppliers while IKOFI (E-wallet) enables farmers to purchase seeds and fertilizers from agro-dealers.

Subsequently, these initiatives have reduced the distance from farmers to agro dealer from 15km to 1-2 km. This helped many farmers accessing timely agricultural inputs and increase staple food crop production.

### **Improving quality of grains and reducing postharvest loss**

Maize farmers in Rwanda have for some time suffered big losses as their produce got rejected by agro-processors due to high levels of aflatoxin in their maize.

In response, AGRA has also partnered with Agro-processing firms to train farmers on how to reduce aflatoxin in the post-harvest. Also, they were given driers and improved storage equipment.

For example, one of those agro-processing firms supported by AGRA is Africa Improved Foods (AIF) that makes nutritious fortified foods. It had a rejection rate of 90 per cent for Rwanda produced maize due to high aflatoxin levels before AGRA intervened to support them in 2018. By Season A 2020, AIF started reporting a rejection rate of only 10 per cent for Rwanda produced maize.

That's because AGRA worked with research institutions and grain buyers to introduce "Aflasafe", which is a biological control of Aflatoxin.

The measure, coupled with rigorous training in post-harvest management, created confidence from buyers like AIF and it helped boost incomes for small holder farmers as they were assured of the market and played a key role in increasing profitability for Agro-processors as they were assured of supply of good quality grains produced locally.

### **Business enabling environment and regulatory framework**


Seed production is a very sophisticated value chain where all linkages must speak into each other for maximum result to be achieved – from production to the last mile - quality seeds reaching the smallholder farmer.

That is why any investment right from variety development research to seed production, requires an intact regulatory framework to guide the whole process.

Acting proactively, AGRA has invested USD 1.7 Million as a contribution to help build a sustainable regulatory system that will be able to coordinate, examine quality and legal framework of this whole value chain to meet international standards, in particular International Seed testing Association (ISTA) and Organization for Economic Cooperation and Development (OECD), which will ensure smallholder to buy quality seed true to



Ms. Mukeshimana  
Francois, MD Sozo  
Seed Company



the variety and increase productivity and income, and will also enable seed companies to export seed produced in the country to the rest of the world.

### **Lessons learnt from Covid-19**

**Agriculture Mechanization:** With the advent of Covid-19 pandemic, most countries worldwide went into lockdowns and social distancing to minimize the contagion spread. The Rwandan government allowed agricultural activities to continue but still there was a notable scarcity of labor market during Covid-19 period. In order to mitigate a looming food crisis, AGRA joined hands

with MINAGRI through RAB and intensified the use of tractors on 412 ha of farmer cooperatives and seed growers' land.

From this experience, we learned that the way forward for the Rwandan agriculture is to shift from relying on intensive human labor system to mechanized-production system, which relies more on machinery and technology than human labor. This initiative has started, but must be scaled up in order to yield needed results.