AATF
PROSPERITY THROUGH TECHNOLOGY

Annual Report 2019

Access, Deliver and Enable

Adoption of transformative agricultural technologies

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Cassava planting at Olupona demonstration site in Iwo, Osun state in August 2019

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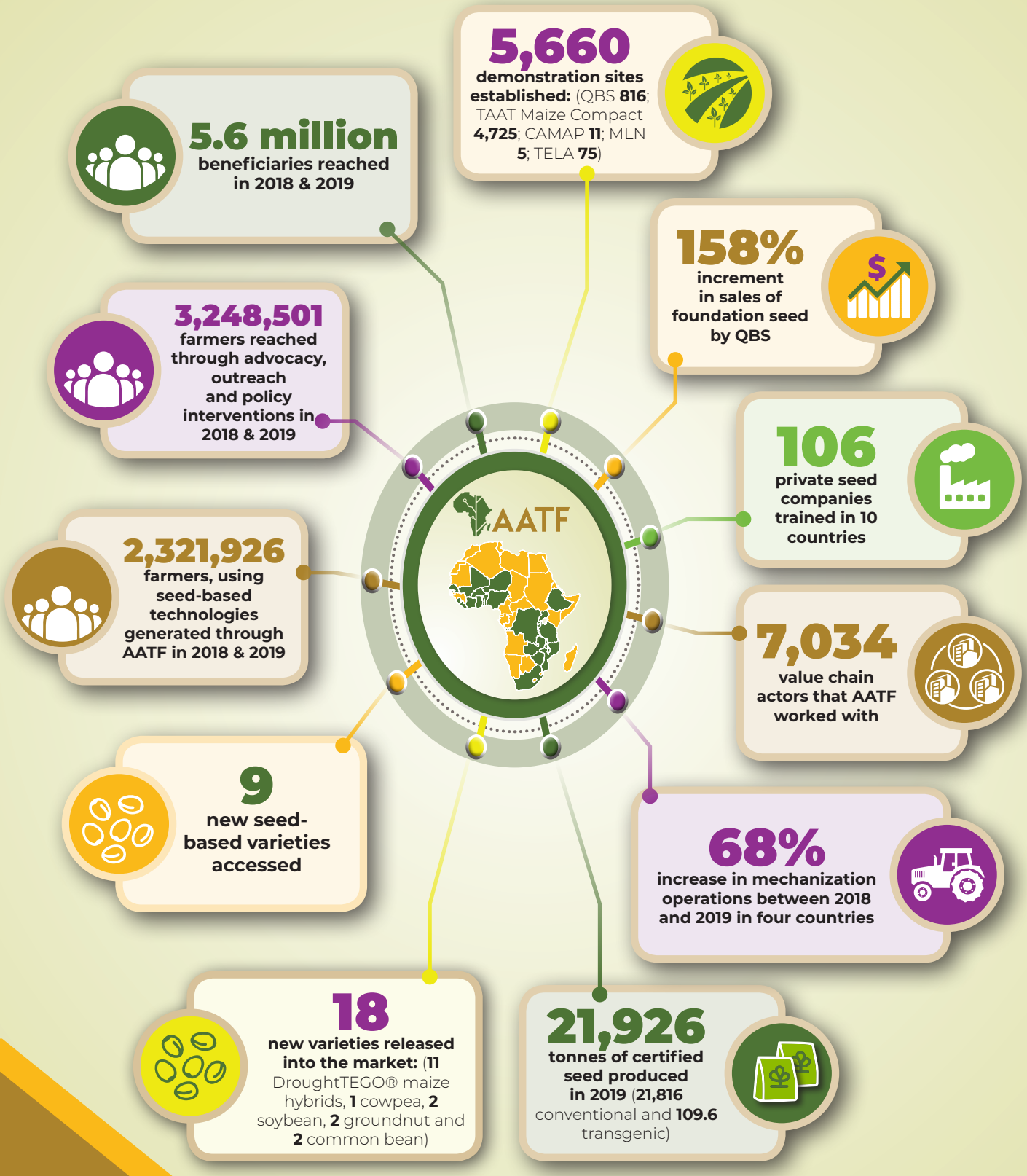
2019 achievements at a glance



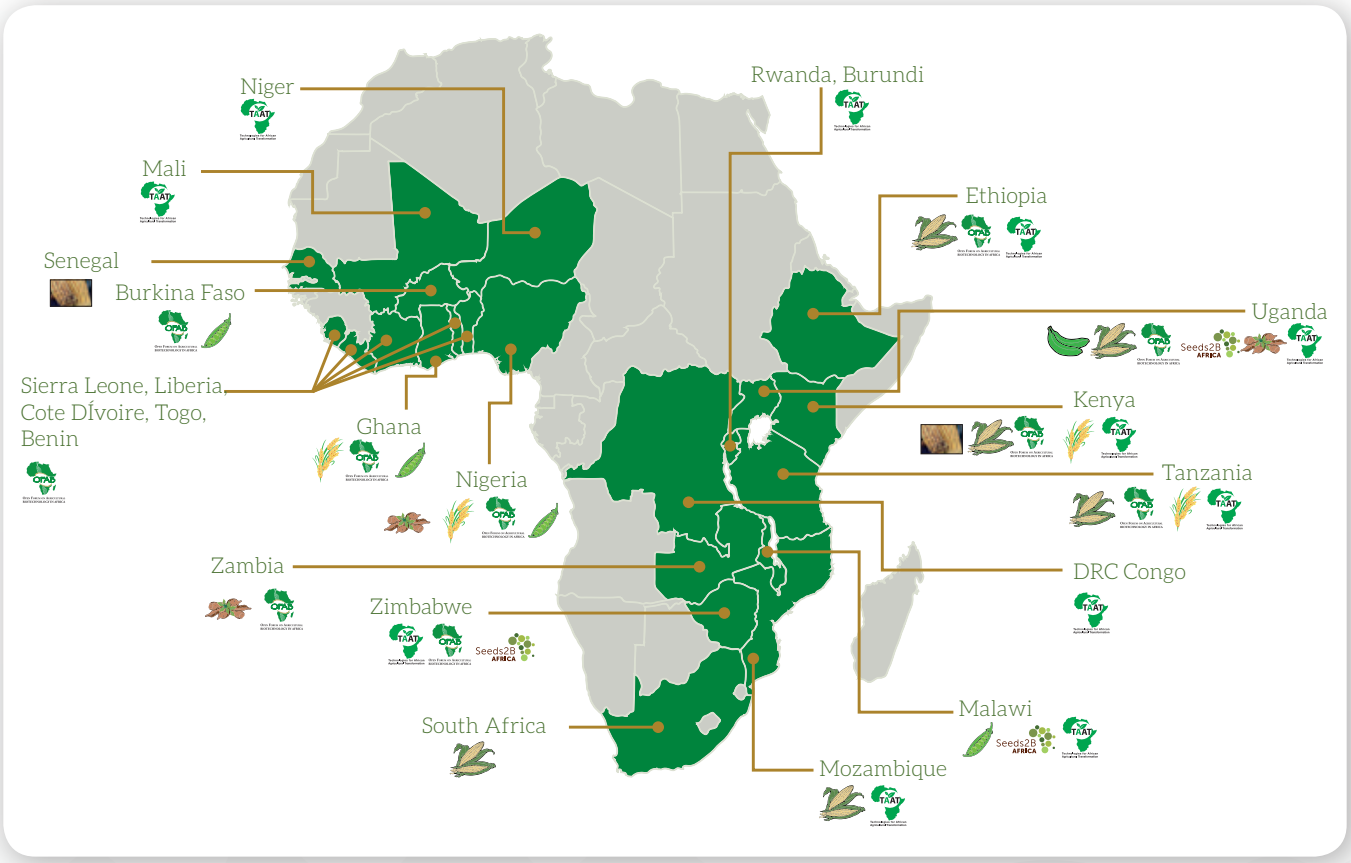
Who we are

AATF is driven by the vision of a prosperous and food secure Africa, where the livelihoods of smallholder farmers are transformed by innovation. Founded in 2003, AATF believes that the agricultural sector is the foundation of Africa's economic growth and development. It works towards an Africa where women, men and young farmers have rapid access to state-of-the-art agricultural technologies to help them achieve the desired agricultural transformation that promises food and nutrition security and increased income benefiting all.

The organisation works with its partners to clearly define the real needs of smallholder farmers in Africa, and to identify opportunities to address those needs through the transfer and use of new and existing technologies. It works with public and private agricultural research and development institutions to develop and adapt appropriate technologies for smallholder farmers and collaborates with private sector organisations in order to create sustainable markets.

AATF focuses on the most important crops for smallholder farmers, including maize, cowpea, banana, rice, potato and cassava, targeting these in order to improve food security at the household and national levels, and to drive improvements in incomes and livelihoods for farmers.

AATF currently has operations in 23 African countries conducted by a staff of 50 based in the organisation's headquarters in Nairobi, Kenya, country office in Abuja, Nigeria, and in field offices around the continent.



AATF projects portfolio and footprint in Africa

Message from the Board Chair

Ousmane Badiane, AATF Board Chair

> *It is critical that Africa is well positioned to meet the technology needs of the future and make new technologies work for human development. This positioning requires concrete actions and investments that are necessary to drive agricultural production as well as the social and economic development of farmers.*

Agricultural transformations and revolutions have been shaped by scientific and technological breakthroughs, from the first hoes invented by early farmers, the Green Revolution of the 1960s, to precision agriculture technology.

These technological revolutions that have forever changed the way farmers work, epitomise what people can do for human well-being, the value of new technologies for needy people and technological innovation as a driver of development and human progress. Indeed, as resources become more constrained, the more precise we are in knowing what to do, when to do it and exactly how much of a given implement is needed, the more we get out of our pockets, contracted labour and the land.

At AATF, we know the importance of technology as a driver of human progress. That is why we strive to harness appropriate technologies and related innovations and know-how from around the world that can help improve agricultural productivity and enhance nutritional value of key staple and non-staple crops. AATF also supports adoption of non-seed technologies such as mechanisation and digital agriculture. In doing this, AATF maintains its primary focus on smallholders, including new generation of farmers across Africa.

Agricultural innovation

The advent of precision agriculture is one of the most important recent innovations in farming technology. New developments in machinery and software are allowing farmers to have more control over how they plant and manage their crops. Today's farm tractors have more computing power than the first space shuttle that went to the moon. From autopilot features to yield monitors to rate controllers, these new advances are helping farmers improve efficiency and maximise yield. Precise application of water, fertiliser and chemicals means less waste and less input costs. From weather monitoring to pest identification to market data, farmers can find an app to help with almost anything.

Digital innovations need to move beyond large-scale farming operations to benefit more smallholder farmers as well, improve food and nutrition security, build climate resilience and expand inclusion of youth and women. There are already good examples of their ability to do so. At AATF, we endeavour to access and deliver holistic digital agriculture technologies, innovations, and data to transform business models and practices across the agricultural value chain.

Through the African Development Bank (AfDB) supported Technologies for African Agricultural Transformation (TAAT) Maize Compact, AATF identified seven ICT platforms in the region to facilitate farmer registration, e-extension, access and use of TAAT Maize technologies including elite climate smart maize varieties. In Nigeria for instance, the Compact leveraged on the power of digital technologies to register 60,100 farmers in 19 states and link them to the Anchor Borrower Program (ABP) of the Central Bank of Nigeria (CBN) in 2019. Through the ABP, the TAAT Maize Compact assisted the farmers to acquire about 2,000 tonnes of seed from 12 elite climate smart maize varieties which they planted on about 80,000 ha in 2019. In Kenya, the Compact registered 2,500 farmers and linked them with Kenya food chain millers.

Through crop biotechnology and genomics, scientists are designing and developing crops with higher yields, additional nutrients and enhanced tastes. We know and understand the power of modern agricultural biotechnology and genomics, and how their adoption is critical in transforming African agriculture into a force of economic growth, creating wealth in the rural space and beyond, feeding an African population expected to reach 2.2 billion people by 2050, and conserving resources for future generations. AATF is implementing four projects and initiatives to deliver the state-of-the-art agricultural technologies and products smallholder farmers require to transform national agricultural sectors. These are: Pod Borer Resistant Cowpea Project; Hybrid Rice: Breeding by Design; TELA Maize Project; and Nitrogen and Water Efficient Salt Tolerant Rice Project.

Key milestone

A key milestone that was achieved in 2019 was the approval, registration and commercial release of the first transgenic cowpea variety in Nigeria, bringing a real solution to a major problem faced by local farmers and their peers in most parts of the continent. The Pod Borer Resistant (PBR) cowpea, released in December 2019 as SAMPEA 20-T, was developed through an AATF managed public-private partnership that brought together international and local institutions and organisations.

Technological innovations do not only have the potential to transform agriculture, they also help attract the youth by turning the sector into a critical source of livelihood with expanded employment and entrepreneurial opportunities.

Positioning Africa

It is critical that Africa is well positioned to meet the technology needs of the future and make new technologies work for human development. This positioning requires concrete actions and investments that are necessary to drive agricultural production as well as the social and economic development of farmers. Specifically, what is required is initiatives that enable smallholder farmers (focusing on women and youth) to take advantage of appropriate and affordable agricultural technologies; sustainable seed systems that not only convey assurance for quality and productivity increase, but also attract private sector engagement; enhanced finances for agriculture to leverage efforts of the private sector through public private partnerships in research and development, production, value addition, and marketing; and policy, legislative and regulatory enabling environments for increased uptake and use of innovative agricultural technologies.

“It is critical that Africa is well positioned to meet the technology needs of the future and make new technologies work for human development. This positioning requires concrete actions and investments that are necessary to drive agricultural production as well as the social and economic development of farmers.”

Investments in mechanisation, seed systems, biotechnology, hybrid technology, precision agriculture, and research and technology transfer that go beyond securing the immediate needs of smallholder farmers, to equip and enable African economies to generate wealth and create assets for their people is what we need.

This requires a regulatory environment and institutional infrastructure to foster synergy amongst academia, research organisations, seed companies and financial institutions to help transition research products into tangible solutions that will transform agriculture in Africa. As an organisation that was founded on facilitating public-private partnerships for transformative agriculture in Africa, we will continue to play our part in this area.

May I take this opportunity to welcome Shey Tata, Dahlia Garwe and Noble Banadda who joined the Board of Trustees at the end of 2019 and thank Kwame Akuffo-Akoto, Larry Beach and MacLean Sibanda for their dedicated service over the years.

We are grateful to our passionate and dedicated AATF staff team, management, partners, AATF Board of Trustees, investors, the researchers and other professionals who work with us to deliver on our promise to smallholder farmers for a food secure Africa and for making 2019 another great year. We welcome you all to continue your journey with us during 2020 and beyond for a better Africa!

Message from the Executive Director

Denis T Kyetere,
AATF Executive Director

Building on momentum from achievements in past years, we continued and heightened our strategic engagements with private seed companies and other value chain actors towards improving the delivery system of agricultural technologies to smallholder farmers and enhancing market access.

2019 will forever remain etched in our minds – and in history – as the year that saw the first transgenic food crop commercialised in Africa outside of South Africa. The Pod Borer Resistant (PBR) cowpea, released in December 2019 as SAMPEA 20-T in Nigeria, was developed through an AATF managed public-private partnership that brings together international and national institutions and organisations.

This key milestone marked a global win for AATF and its partners, investors and stakeholders and 2019 will therefore remain a historic year for the organisation. The release is even more significant for Nigeria's food security, cowpea being a staple crop in the country and an important source of protein for over 200 million people. Once fully adopted, the PBR cowpea is expected to increase Nigeria's local production to meet local demand that is currently filled through imports of about 725,000 tonnes, costing over US$ 628 million annually.

To say the least, the release was very exciting for us at AATF, our partners and especially the farmers that need this more than anyone else. We salute our partners particularly the Institute for Agricultural Research (IAR), Ahmadu Bello University, Zaria, Nigeria, scientists in Africa and elsewhere for their dedication towards providing an option to the challenge of insect pest infestation that is affecting our cowpea farmers. Our most sincere appreciation goes to the Federal Government of Nigeria for making this possible.

I wish to share with you some exciting developments that we recorded during 2019 that speak directly to our 2018-2022 strategy and business plan. These that seeks to contribute to the far-reaching goal of transforming the lives of farmers in Africa South of the Sahara (SSA) through innovative agricultural technologies. The AATF plan is ambitious, with a focus on spearheading expanded access, availability and use of innovative technologies to reach 40% of SSA countries and increase the incomes of farmers adopting AATF technologies by 20%. Attainment of the focus is through three strategic objectives: i) To diversify agricultural technologies accessed for use in SSA; ii) To accelerate commercialisation of agricultural technologies for improved farmer livelihoods; iii) To create an enabling environment for increased uptake and use of agricultural technologies.

Diversifying agricultural technology

During the year, the organisation's efforts towards diversifying agricultural technologies for farmers in SSA yielded exciting results. We managed to access nine new seed-based varieties through the Seeds2B Project that are being evaluated for possible introduction to agribusiness in Africa.

By the end of the year, AATF and its partners had released 18 new varieties into the market (11 maize, one cowpea, two soybean, two groundnut and two common bean) and developed 18 new varieties through the TELA Maize (six) and the Hybrid Rice (12) projects. These developed varieties, in addition to 12 from Seeds2B and two from PBR

cowpea projects were undergoing further evaluations in 2019. This progress is keeping the product pipeline healthy.

Reaching farmers and introducing them to new products and knowhow is key to sustainable technology uptake. In our Strategic Framework 2018–2022, AATF commits to reaching 16 million farmers by end of 2022. Two years into implementation of the strategy, AATF has reached 5.6 million farmers, representing a 35% achievement against the 5-year target. More impressive was the adoption rate of AATF technologies with over 1 million farmers using seed-based technologies generated through AATF collaborative work during 2019.

More farmers are set to adopt technologies from AATF's product pipeline in the coming years considering that the Foundation, with support from partners, heightened awareness creation activities directed at raising interest and demand of diverse agricultural technologies through field days, trainings, seminars and outreach, reaching close to 700,000 farmers during 2019 alone.

Accelerating commercialisation

The technology delivery system is critical for AATF as more products get closer to market. Adherence to quality seed production and processes, product promotion and access to markets contribute to better delivery systems. Building on momentum from achievements in past years, we continued and heightened our strategic engagements with private seed companies and other value chain actors towards improving the delivery system of agricultural technologies to smallholder farmers and enhancing market access.

A key development towards enhanced commercialisation of agricultural technologies was the launch of the Alliance for Hybrid Rice in Africa (AHyRA) in May 2019 that brings together public and private partners for the commercialisation and adoption of hybrid rice technology for the benefit of smallholder rice farmers in Africa. AHyRA was initiated by AATF and includes AfricaRice, the International Rice Research Institute (IRRI), national agricultural research systems (NARS), private seed companies and technology developers who are collaborating in the deployment of different rice hybrid technologies to promote self-sufficiency in rice for Africa.

We worked with 7,034 value chain actors who included seed companies, agrodealers, seed producers, grain traders, and processors to create market systems supportive of agricultural development. We helped strengthen the capacity of 106 companies in 10 countries and 124 extension agents to enhance their speed and effectiveness to deliver certified maize seed to smallholder farmers. In addition, 7,008 farmers were linked to off-takers through the TAAT Maize Compact and Seeds2B projects enhancing their ability to access markets. We are certain our efforts will help build a network of value chain actors that can create market systems supportive of agriculture.

Creation of an enabling environment for agriculture

Advocacy and outreach continue to be key drivers towards policy change, policy implementation and addressing misinformation

"Building on momentum from achievements in past years, we continued and heightened our strategic engagements with private seed companies and other value chain actors towards improving the delivery system of agricultural technologies to smallholder farmers and enhancing market access."

and unfavourable perceptions. AATF continues to work with partners to provide awareness and education to policy makers and the public to inform and support decision making on key policy decisions especially in science, technology and innovation and seed systems. We are grateful to the Bill and Melinda Gates Foundation for renewal of its investment in the Open Forum on Agricultural Biotechnology (OFAB) Project for another 5 years which gives us the opportunity to build on past work.

Some developments recorded in the biotech arena during the year through collaboration of OFAB Project and partners are worth recalling. Ghana and Ethiopia made significant progress to aid testing and commercialisation of transgenics. Ghana passed its biosafety regulations making way for technology developers to apply for environmental release. Ethiopia finalised its Biosafety Directives that provide detailed guidance on the pathway to commercialisation of transgenics. In addition to the release of the transgenic cowpea mentioned above, Nigeria's President, Muhammadu Buhari, signed into law the National Biosafety Management Agency (Amendment) that now includes gene editing.

Through the TAAT Policy Compact Project, a series of policy dialogues continued in Kenya, Ghana and Ethiopia to identify gaps in the seed sector as part of efforts towards facilitating efficiency in quality seed supply across Africa. High-level consultative meetings were convened to accelerate the implementation of regionally harmonised seed regulations within countries in the Economic Community of West African States (ECOWAS), Economic and Monetary Union of West Africa (UEMOA) and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS) regions.

We continued to nurture our partnerships and collaborations in support of delivery of technologies to farmers through consultations and discussions that provide opportunity for building new relationships and identification of possible opportunities. During the year, we entered into four new partnerships with: the African Union Development Agency (AUDA-NEPAD) on enhancement of science, technology and innovation for agriculture; IRRI for the expansion of availability of hybrid rice in Africa; IAR Nigeria on expanding the TELA Maize Project into the country; and the Seed Assure Alliance on building an enhanced seed delivery system. In addition, a tripartite partnership platform involving IRRI, AfricaRice and AATF was discussed in June 2019 as part of strengthening the deployment of rice technologies in Africa.

Through concerted efforts with our various partners who are working with us to extend the reach to tomorrow's technologies for African farmers today, we were able to deliver on key targets for 2019. We thank you, our investors, partners, collaborators, staff and Board of Trustees for your support and friendship during the year. None of this would have been possible without you!

Dennis Olumeh of AATF (left) conducting yield assessments of Fortenza Duo treated TAAT Maize seed with field assistants in Zambia in May 2019

Strategic Objective 1

Diversifying agricultural technologies

Farmers participating in a soybean participatory variety selection during a Seeds2B field day at Lilongwe On-station adaptation trial site in December 2019

accessed for use in Sub-Saharan Africa

For rapid and effective deployment of innovations to optimise impact at the farmer level through seed-based, mechanisation, nutrition-enhanced and digital agriculture technologies

AATF strives to harness appropriate technologies, innovations and know-how, from around the world, that will improve agricultural productivity and enhance nutritional value and post-harvest management of selected food crops. AATF also supports adoption of non-seed technologies such as mechanisation and digital agriculture. In these endeavours, AATF maintains its primary focus on smallholders, including new generation farmers, in Sub-Saharan Africa (SSA). During the year, the organisation's efforts towards diversifying agricultural technologies for farmers in SSA yielded exciting results.

A key milestone that was achieved in 2019 was the approval, registration and commercial release of the first transgenic cowpea in Nigeria. The Pod Borer Resistant (PBR) cowpea, released in December 2019 as SAMPEA 20-T, was developed through an AATF managed public-private partnership that brings together international and local organisations. In Nigeria, AATF's key partner for the project is the Institute for Agricultural Research (IAR), Ahmadu Bello University, Zaria.

With this key milestone, 2019 will remain a historic year for AATF as it also marked a global win for the Foundation and its partners, investors and stakeholders. This milestone is historic in many ways. The transgenic cowpea is the first genetically modified food crop to be commercialised in Africa outside South Africa. The release is even more significant for Nigeria's food security, cowpea being a staple crop in the country and an important source of protein for over 200 million people. Once fully adopted, the PBR cowpea is expected to increase Nigeria's local production to meet local demand that is currently filled through imports of about 725,000 tonnes costing over US$ 628 million annually.

Nigeria's failure to meet local demand for cowpea has been, in large part, attributed to the devastating insect pests, especially the legume pod borer, *Maruca vitrata*, that causes the largest preharvest damages, reducing grain yield by up to 80% and lowering quality of the grain.

Accessing high-end seed-based varieties

Availing a wide range of improved and quality seeds for access by smallholder farmers in SSA is a key area of work for AATF as it contributes to the larger goal of transforming Africa's agriculture.

During 2019, AATF accessed nine new seed-based varieties through the Seeds2B Project. These included different varieties of tomato, chilli and onion that were introduced into the variety testing systems of Uganda, Ghana and Malawi for possible addition to the countries' agribusinesses. In Malawi, the project accessed three new groundnut varieties from China and South Africa. In Uganda, six tomato varieties were accessed from Malawi, Korea and India. In Ghana, the project identified 36 promising local varieties (16 tomato, 11 pepper and nine onion) for further evaluations and possible deployment in additional agro-ecologies.

David Taurus, Seeds2B Project Coordinator assessing the performance of tomatoes at the Wenchi Evaluation Field, Central Ghana in December 2019

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New varieties of tomato, chilli and onion AATF accessed through the Seeds2B Project

Seeds2B is being implemented in Zimbabwe, Ghana, Malawi and Uganda. Activities in Ghana began in 2019 after the incorporation of the Ghana Agricultural Technology Evaluation (GATE) while in Malawi and Uganda the activities are carried out through the Partnerships for Seed Technology Transfer in Africa (PASTTA).

AATF, IRRI, AfricaRice teams after signing the collaborative agreement in June 2019. From left: Emmanuel Okogbenin (AATF), Sophia Tesfazion (AATF), Ismail Abdegi (IRRI), Edith Kouko (AATF), Koichi Fatakuchi (AfricaRice), Jane Achando (AATF), Bruce Oliver (AfricaRice), Kayode Sanni (AATF)

Efforts to expand availability of rice technologies saw the Hybrid Rice: Breeding by Design Project (Hybrid Rice Project) sign a collaboration agreement with International Rice Research Institute (IRRI) in 2019 on access to technologies covering nutrition enhancement, digital agriculture and mechanisation, which are some of the new focus areas for AATF.

In addition, the Hybrid Rice Project expanded its technology portfolio through formation of the Alliance for Hybrid Rice in Africa (AHyRA) that brought together businesses and public organisations developing hybrid rice, thus enabling access to both 2-line hybrid rice and 3-line hybrid rice technologies for the benefit of smallholder rice farmers in Africa. The Alliance eased expansion of the project's operations into Benin, Rwanda, Senegal, Togo and Uganda, bringing its geographic coverage of SSA to seven countries including Kenya and Tanzania. The respective governments have given go-ahead for testing of the 2-line and 3-line hybrid rice varieties for adoption into their national rice production pipelines.

New product release and evaluations

In 2019, AATF and its partners released 18 new varieties into the market (11 DroughtTEGO® maize hybrids, one cowpea, two soybean, two groundnut and two common bean); with another 32 new varieties (12 Seeds2B, 12 hybrid rice, six TELA and two PBR cowpea) undergoing further evaluation.

The 11 DroughtTEGO® maize hybrids were released for commercialisation through the WEMA/TELA Maize Project. The new releases included four Maize Lethal Necrosis (MLN)-tolerant hybrids released in Tanzania (WE5135, WE5141, WE7118 and WE7133) and one in Uganda (WE5135). Some of the parents of these MLN-tolerant hybrids will be submitted for trait integration to feed the TELA Maize Project products pipeline. This brings the total number of conventional DroughtTEGO® hybrids approved for commercialisation since 2013 to 126 in six project countries (Ethiopia–one, Kenya–72, Mozambique–two, South Africa–21, Tanzania–15, Uganda–15.

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New varieties into the market

(**11** DroughtTEGO®, **1** cowpea, **2** soybean, **2** groundnut & **2** common bean)

Sylvester Oikeh, Project Manager, TELA assessing the performance of a new TELA Hybrid, WE7226B, at a demonstration site in South Africa in 2019

The PBR cowpea, SAMPEA 20-T, was developed through the Pod-Borer Cowpea Project that is being implemented in Nigeria, Ghana and Burkina Faso, while the soybean (SC Signal and SC Saga), groundnut (NARONUT 1R and NARONUT 2T) and common bean (NAROBEAN 6 and NAROBEAN 7) were released through the Seeds2B (PASTTA) Project initiative in Uganda.

Two additional TELA insect protected (*Bt*) hybrids (WE7231B and WE7230B) with yield advantage of 15%–17% relative to commercial hybrid were nominated in October 2019 for variety registration and commercialisation in South Africa. When approved, this will bring the total number of TELA hybrids approved for commercialisation to seven in South Africa.

In Ethiopia, one TELA hybrid, WE7210, evaluated in the on-farm Variety Verification Trials (VVTs) in 2019 was

recommended for commercial release with another one, WE8216, under consideration given its superior performance under drought compared to the commercial check in the National Variety Trials (NVTs). Both TELA hybrids, WE7210DB and WE8216B, are awaiting traits deregulation before they can be entered for variety certification in Ethiopia.

The Ethiopia trials began in 2017 with 98 WEMA (DroughtTEGO®) hybrids to identify those adapted to the country and select the best to be advanced to NVTs as part of variety certification and commercialisation process.

The Seeds2B Project's variety evaluation trials generated exciting results with 12 varieties being selected for commercialisation in Malawi and Zimbabwe. In Zimbabwe, nine outstanding entries (three tomato, three pearl millet, and three sorghum) were selected for commercialisation out of 25 varieties evaluated. In Malawi, three outstanding varieties were selected for commercialisation – one soybean variety (TGX 1991-22F), two groundnut varieties (ICGV-SM 03530 and ICGV-SM 08528) – from 134 varieties of soybean, cowpea and groundnut evaluated through PASTTA. The project introduced and started evaluations of new varieties in Ghana that included nine onion, 11 chilli pepper and 16 tomato varieties in four different agro-ecologies.

126

DroughtTEGO® hybrids released since 2013

(Ethiopia–**1**, Kenya–**72**, Mozambique–**2**, South Africa–**21**, Tanzania–**15** and Uganda–**15**)

A robust product development pipeline

Edith Kouko, Project Officer, AATF joins KEPHIS officials during an NPT inspection of hybrid rice plot in Malindi, Kenya.

In keeping with a healthy product pipeline, AATF continued with product development and fast-tracking of testing of introduced crop accessions to strengthen Africa's market portfolios with new products.

By the end of the year, AATF had 32 new products to advance into national performance trials (NPTs): 12 from Seeds2B, 12 rice hybrids from the Hybrid Rice Project, six *Bt* insect-resistant hybrids from the TELA Maize Project and two PBR cowpea.

The Hybrid Rice Project entered the 12 new varieties into NPTs that were planted across five Kenya Plant Health Inspectorate Service (KEPHIS) approved sites in Kenya at Mwea, Bondo, Kisumu Airport, Malindi and Hola in July 2019. Harvesting of the rice varieties was carried out during October to November 2019 and KEPHIS is analysing the NPT data.

The Hybrid Rice Project also identified five hybrid varieties

that were resistant to Blast, Brown Spot and Rice Yellow Mottle Virus (RYMV) while another four hybrids were resistant to Blast and RYMV but moderately resistant to Brown Spot. This was after screening 50 rice hybrids and parental lines at the National Crops Resources Research Institute (NaCRRI), Uganda.

4
TELA hybrids recommended for commercial release in 2019

Encouraging progress was recorded in the development and testing of elite transgenic maize hybrids with combined DroughtGard® and insect protection traits. Results of confined field trials (CFT) carried out through the TELA Maize Project in Ethiopia, Mozambique and Tanzania showed yield advantage of 53%–115% on average for stacked TELA hybrids over non-TELA hybrids under natural or artificial infestation of stem borer and Fall armyworm (FAW).

To build the TELA Maize transgenic product pipeline for Ethiopia, one conventional DroughtTEGO® hybrid, WE7210, has already been converted to a stacked TELA (DT + Bt) hybrid, WE7210DB, while a second one WE8216 is available in *Bt* version only, WE8216B.

Nigeria joined the TELA Maize Project in April 2019 becoming the seventh country to participate in the project in addition to Ethiopia, Kenya, Mozambique, South Africa, Tanzania and Uganda. In June 2019, the country commenced the first yield performance trials for 59 DroughtTEGO® hybrids at six sites in three major maize growing agroecologies in Nigeria (Southern Guinea Savanna, Northern Guinea Savanna, and Sudan Savanna) to identify suitable hybrids for conversion into transgenics using *Bt* and DT traits. Results showed the top 10 DroughtTEGO® hybrids gave grain yield of 19%–30% relative to the best commercial hybrid. Six of these hybrids have been identified for fast-tracking to on-farm multilocation trials in 2020 as part of the requirements for variety certification. The best 23 hybrids from the evaluation will be repeated in 2020 cropping season for better understanding of their environmental or spatial and temporal stability across the major maize growing agroecologies of Nigeria.

Work on developing a potato with enhanced resistance against bacterial wilt (BW) disease continued through the Bacterial Wilt Potato Project. The project aims to develop at least one farmer-preferred variety with sweet pepper *pflp* gene and elongation factor receptor (EFR) gene, for resistance to BW caused by the soil-borne pathogen *Ralstonia solanacearum*. In 2019, the project identified five transgenic events with delayed wilt disease symptoms compared to the non-transgenic Shangi potato. The project is using the farmer-preferred Shangi variety that is known and grown by more than 75% of potato farmers in Kenya, and also has a good transformation efficiency.

32 **New products undergoing further evaluations/advanced into NPTs** (Seeds2B–**12**, Hybrid Rice Project–**12**, rice hybrids, TELA Maize Project–**6**, *Bt* insect-resistant hybrids, PBR cowpea–2)

Kingstone Mashingaidze, TELA Country Coordinator, RSA shows off the good performance of a new TELA Bt Hybrid under moderate drought in 2019 at a demonstration site in RSA

Mechanisation operations

In 2019, the Cassava Mechanisation and Agro-processing Project (CAMAP) realised a 68% increase in mechanisation operations from 6,267 in 2018 to 10,523 in 2019 in the four project countries of Nigeria, Tanzania, Uganda and Zambia. Nigeria alone recorded 7,287 mechanisation operations up from 4,822 the previous year which is a 66% increase. The operations in Nigeria were carried out through an offshoot company of CAMAP, Agridrive Limited, which is a social enterprise wholly owned by AATF. In Tanzania, the project operations were carried out under the African Development Bank (AfDB) TAAT program where demonstration fields of 9 hectares were established in three sites and 54 operations undertaken.

The mechanisation services include ploughing, harrowing, planting, herbicide application and harvesting.

A cassava mechanisation demonstration farm in Nigeria

68%

Increase in mechanisation operations from 6,267 in 2018 to 10,523 in 2019

Spraying at Ihunbo Farm, Ogun State

Ensuring smallholder farmers access new technologies

Farmers participating in a soybean participatory variety selection during a Seeds2B field day at Lilongwe On-station adaptation trial site in December 2019

Reaching farmers and introducing them to new products and knowhow is key to sustainable technology uptake. In its Strategic Framework 2018–2022, AATF commits to reaching 16 million farmers by end of 2022. Two years into implementation of the strategy, AATF has reached 5.6 million farmers, a 35% achievement against the 5-year target. Of these, 3,248,501 were reached through advocacy, outreach and policy interventions.

More impressive was the adoption rate of AATF technologies with 1,132,087 farmers using seed-based technologies generated through AATF collaborative work during 2019, taking the tally to 2,321,926 farmers, over the 2 years.

More farmers are set to adopt technologies from AATF product pipeline in the coming years considering that the Foundation, with support from partners, heightened awareness creation activities directed at raising interest and demand of diverse agricultural technologies through field days, trainings, seminars and outreach, reaching close to 700,000 farmers.

Looking forward

AATF will continue with product development and fast track testing of introduced crop accessions to strengthen Africa's market portfolios with new products. This is to keep the technology/product pipeline healthy and ready to respond to emerging new challenges. Efforts will be driven towards ensuring more smallholder farmers have access and are using both seed-based and non-seed technologies.

Strategic Objective 2

Accelerating commercialisation of improved farmer livelihoods

A TELA seed production field in South Africa

agricultural technologies for

Towards improvement of delivery systems for agricultural technologies and enhancement of access to markets by farmers

A technology delivery system that ensures adherence to quality seed production and processes, product promotion and access to markets is critical to deployment of agricultural products at a scale that will make a significant impact for farmers. AATF intensified its collaboration with diverse institutions, including research institutes, universities and the private sector across the value chain to build a strong ecosystem of capable retail partners. Focus was on training and capacity strengthening for players including extension service providers and seed companies to adhere to quality seed production systems and processes, and building and supporting a value chain of actors in support of agricultural market systems.

Building on momentum from achievements in past years, AATF in 2019, heightened initiatives that would accelerate the effective delivery of agricultural technologies to smallholder farmers. The organisation worked with 7,034 value chain actors who included seed companies, agrodealers, seed producers, grain traders, and processors to create market systems supportive of agricultural development.

The TAAT Maize team, the Late Gospel Omanya (2nd left) and Samuel Angwenyi (3rd left) inspecting FD treated trials in Kitale Kenya with a team from KALRO and Kenya Seed Company in June 2019

Fostering strategic engagements for an effective product delivery system

Rice value chain stakeholders at the launch of AHyRA at Azure Hotel, Nairobi on 21 May 2019

AATF continued its strategic engagements with public and private sectors in agriculture for improved and functional delivery system. The launch of the Alliance for Hybrid Rice in Africa (AHyRA) in May 2019 brought together AfricaRice, IRRI, NARS, private seed companies and technology developers in a partnership towards deployment and commercialisation of different rice hybrid technologies in Africa. AATF also entered into partnership with the Seed Assure Alliance for enhanced quality and quantity of AATF interventions in digitisation of seed inspection and quality control.

Strengthening capacity for quality seed production and dissemination

AATF strengthened its strategic engagements with 106 private seed companies in 10 countries that provided opportunity to enhance their capacity, speed and effectiveness to deliver agricultural technologies to smallholder farmers.

106
Private seed companies trained in 10 countries

Production of certified maize seed received a boost from trainings and backstopping with 45 partner seed companies in the WEMA, TELA, TAAT Maize and Striga Control in Maize projects recording gains during the year. The WEMA and Striga Control in Maize projects provided

Samuel Angwenyi, Project Officer – Deployment, AATF speaking with farmers during a field day to showcase MLN resistant varieties at an MLN demonstration site in Narok, Kenya

technical backstopping support services for seed production to four seed companies in Kenya, Tanzania and Uganda. This resulted in production of 685 tonnes of DroughtTEGO and 100 tonnes of StrigAway certified seed.

The TAAT Maize Compact trained 14 seed companies in Zambia and Zimbabwe on seed treatment with Fortenza Duo (FD), covering dosage, mixing of the chemical, machine calibration and stewardship requirements for sustainable use of the seed treatment chemical.

Extension service is critical to getting agricultural innovations to farmers and each year AATF works with both government and private service providers to achieve this goal. During 2019, AATF trained 50 extension agents, seed company representatives and lead farmers as trainers of trainers on TELA (transgenic maize) stewardship and insect resistance management (IRM) for enhanced delivery of TELA technology to farmers in South Africa.

CAMAP, in collaboration with National Crops Resources Research Institute (NaCCRI), Uganda, trained six operators on the use of the cassava planter. The six trained machine operators were assigned a pupil operator each to work under their supervision as trainers to develop more operators in Uganda.

Production of maize seed varieties free of Maize Lethal Necrosis (MLN) disease increased by 50% in 2019. This was due to one-on-one follow-up trainings and technical backstopping missions on MLN diagnostic with 78 seed companies in Ethiopia, Kenya, Rwanda, Tanzanian and Uganda by the MLN Disease Diagnostic and Management in East Africa Project. The Project supported the commercial seed sector to produce Maize Chlorotic Mottle Virus (MCMV)-free maize seeds and promote use of MLN tolerant maize varieties. The trainings helped to facilitate access and effective use of MLN rapid diagnostic kits (RDK) to ensure minimal damage and curb the spread of the disease.

The MLN management partnership distributed 1,800 RDKs to seed companies, followed by hands-on training on the use of the kits and use of MLN management Standard Operating Procedures (SOPs).

Of the 78 companies reached, 94% adopted the MLN management SOPs in their production fields with good internal quality control systems for the disease. Seed companies using RDKs highlighted their effectiveness especially for early detection and control of MLN.

50%

Increase of production of seed of maize varieties free of MLN disease

Contributing to production of quality certified seed

Access to quality certified seed in a timely and affordable manner is key to improving performance at farmer level.

The QualiBasic Seed Company (QBS), that is being nurtured by AATF, assists independent seed companies in Africa to access high quality foundation seed, in effect ensuring that farmers have a consistent supply of newer, higher yielding and more resilient seed varieties. During 2019, QBS recorded a 158% increment in sales of foundation seed with over 30 seed companies in 10 countries accessing 64.5 tonnes of foundation seed from the company, up from 25 tonnes during 2018. This is an indication of confidence by the seed industry in the services provided by QBS as it captures both new and repeat sales of foundation seed.

158%

Increment in sales of foundation seed by QBS over **30** seed companies in **10** countries supplied with foundation seed

64.5

Tonnes of foundation seed supplied to seed companies, up from **25 tonnes** during 2018

TELA Project partners on a seed production learning visit to Bayer RSA in February 2019

The WEMA, TELA, Striga Control in Maize and TAAT Maize Compact projects are working with partners to help farmers access, adopt and use climate smart maize varieties that mitigate the negative effects of climate change and production constraints to maintain high levels of productivity.

Through these projects and partners, AATF produced 21,926 tonnes of certified seed (21,816 tonnes conventional and 109.6 tonnes transgenic) during the year, sufficient for use by 2,192,600 smallholder farmers (at 10kg/acre/farmer). Of these, 21,898 tonnes were produced and marketed by licensed seed companies.

The remaining 27.6 tonnes (19.25 tonnes of *Bt* (MON810) and 8.36 tonnes of TELA double stack hybrids (DT + *Bt*) hybrid maize seed were produced and stored in South Africa in 2019 in preparation for sustainable deployment of transgenic hybrids when they get approved in project countries outside of South Africa.

AATF trained six seed systems and stewardship leads (SSSLs) from five TELA countries in seed production, processing and research protocols to build their capacity to conduct research on seed parents once transgenic approvals are obtained in their respective countries.

The TAAT Maize Compact supplied 21,031 tonnes of climate smart maize varieties to 2,103,100 households in Kenya, Nigeria, Tanzania, Uganda, Zambia and Zimbabwe. Some of the varieties distributed through TAAT and government input schemes in Zambia and Zimbabwe were in addition treated with Fortenza Duo to protect it against FAW and strengthen crop performance on the field.

In Uganda, the Seeds2B Project in collaboration with NARO Holdings Limited Seed Company produced 27.6 tonnes of certified early generation seeds for six newly released varieties of beans and 1 tonne of groundnut breeder seeds respectively.

Accelerating technology uptake through farm demonstrations, awareness and education

AATF invested in 5,660 demonstration sites and 992 field days to provide practical learning platforms for farmers on various agricultural techniques and technologies, showcase new or improved crops, and also serve as a venue to research and test new methods alongside traditional ones.

5,660
Demonstration sites established

992
Field days held

Through QBS, AATF established 816 demonstration plots and conducted 127 field days in 2019 to accelerate commercialisation, increase uptake and use of maize hybrids.

The TAAT Maize Compact established 4,725 demonstration plots which were used for conducting 817 field days involving 34,367 farmers. These field days were used to raise awareness and educate farmers on climate smart maize varieties, good agricultural practices, post-harvest management and soil fertility management for improved maize productivity.

CAMAP established 11 demonstration sites in Nigeria, Tanzania and Zambia during 2019. In Nigeria, CAMAP established three mechanisation demonstration sites at: Bowen University, Iwo in Osun State; Igbo Tente School in Osun State and Okaka in Oyo State. These sites covering 47 hectares were used for training of 1,200 farmers on mechanisation. In Zambia, CAMAP set up five demonstration fields in Samfya, Nsonga, Kale, Kawamba and Malamba clusters totalling 40ha that proved critical in transforming cassava farming, increasing cassava markets and generating high demand for cassava chips in the country. Through the TAAT Cassava Mechanisation Compact, AATF established three mechanisation demonstration farms totalling 9ha in Tanzania. At least 16 extension agents and about 4,650 farmers were trained on mechanisation and other related good agronomic practices in 2019.

Farmers participating in a field day organised by TAAT Maize Compact in Uganda

In addition to the demonstrations, CAMAP also reached 206,783 new interested farmers through other awareness building efforts. CAMAP has to date reached 656,783 farmers since it was launched in 2012.

Markets for cassava chips expanded in Zambia in 2019 through activities of players such as Grow Africa, Kemiko Cassava Initiative, and Nampulwe Co-operative with prices ranging from US$66–166 depending on quality.

The MLN Disease Diagnostic and Management Project partnership established five MLN-tolerant demonstration plots in MLN hotspots in Narok to showcase 12 MLN-tolerant maize varieties. A field day organised by the partnership attracted 142 farmers.

In South Africa, the Agricultural Research Council (ARC) and Likarabelo Tsa Machale (LTM), a licensed seed company under TELA partnership, established 75 demonstration sites and held five farmer information days (field days) in Mpumalanga and KwaZulu-Natal provinces to promote TELA hybrids which attracted 321 farmers.

The Seeds2B Project engaged 2,856 farmers in Malawi (1,755), Uganda (896), Ghana (110) and Zimbabwe (95) in AATF's agricultural education sensitisation and outreach activities which included 28 demos, 42 field days, and five training workshops. These farmers were linked to 37 (Uganda (14), Malawi (10), Zimbabwe (8) and Ghana (5)) seed value chain actors including seed companies, agrodealers, seed producers, grain traders and processors.

Linking farmers to off-takers

By the end of 2019, AATF had recorded a 289% increase in market linkages between farmers and off-takers with 70,008 farmers linked to off-takers, up from 18,000 during 2018. This linkage enhanced the farmers' ability to access markets and carry out meaningful business as buying of the produce stimulated the output market pull mechanism by increasing demand for the products and providing opportunities for credit sourcing in a vibrant product value chain.

70,008

Farmers linked to off-takers, up from **18,000** during 2018

Looking forward

While driving the commercialisation of projects and products, AATF will endeavour to access technologies requiring a shorter time to reach farmers and demonstrate impact. AATF will also foster closer collaboration with relevant stakeholders in the commercial value chain and explore new business models for licensing, production, and distribution to ensure quicker and faster mass deployment of the technologies.

An impressed and happy farmer with the performance of an elite maize hybrid during a field day organised by TAAT Maize Compact in Uganda

Strategic Objective 3

Creating an enabling environment agricultural technologies

Dennis Olumeh, AATF delivering TAAT Maize technology toolkits to Margaret Awinja of WEREFANET Framer Group Western Kenya in June 2019

for increased uptake and use of

Towards enhancement of national and regional policy environment for smooth introduction of agricultural technologies and agribusinesses

A supportive and enabling policy environment coupled with public participation that will stimulate innovation, technology uptake and agribusiness are critical if agriculture is to make a meaningful difference to the lives of smallholder farmers in Africa.

One of the key reasons hindering introduction of new technologies that offer great potential to make a quantum leap in African economies and farmers' lives is unfavourable policy, regulatory and market environments. These technologies include those that offer to sustainably increase productivity, enhance resilience or adaptation, and reduce greenhouse gas emissions.

AATF works with public and private sector partners and collaborators to address policy and regulatory bottlenecks including market failures affecting the introduction of agricultural technologies to African farmers and markets. These efforts target support towards emergence of efficient market systems and sound science-based regulatory systems that will deliver safe technologies to market while protecting human and environmental health. AATF also continues to work on capacity enhancement of small and medium enterprises (SME) to contribute to the improvement of market systems and private sector development.

During 2019, some governments made encouraging progress on the policy and regulatory front to support agricultural research and development. Of special mention are Ethiopia, Ghana and Nigeria that made changes in their regulatory systems to aid testing and commercialisation of improved technologies. Ghana passed Biosafety Implementing Regulations in June 2019 while Ethiopia finalised its Biosafety Directives that provide detailed guidance on the pathway to commercialisation of transgenic technologies. In Nigeria, President Muhammadu Buhari signed into law the National Biosafety Management Agency (Amendment) Act in July 2019 that now expands the oversight scope of modern biotechnology to include gene editing. These are meaningful changes towards overall goal of transforming Africa's agriculture through science, technology and innovation.

President Muhammadu Buhari signing National Biosafety Management Agency (Amendment) Act, 2019 into law in July 2019

Supporting continuation of research and development in the countries

AATF continued to work with national agricultural research systems (NARS) across the continent to facilitate research through technical assistance in obtaining relevant permit approvals including for confined field trials (CFTs) of various products such as maize, rice and cowpea, in Ethiopia, Ghana, Kenya, Nigeria and Uganda. AATF and partners ensured regulatory compliance throughout the trials in line with the relevant country regulations.

Partners attending the NEWEST rice meeting held in Serena, Kigali, 30 September 2019

3 **Countries that made changes in their regulatory systems to aid testing and commercialisation of improved technologies**

Building stakeholder awareness, understanding and uptake of agricultural biotechnology in Africa

The Open Forum on Agricultural Biotechnology in Africa (OFAB) Project facilitates constructive conversations among key stakeholders and decision makers on agricultural biotechnology. For both policy makers and the larger public, OFAB facilitates quality engagements and conversations on the safety and benefits of modern biotechnology.

These efforts received a major boost when the Bill and Melinda Gates Foundation renewed its investment in OFAB for another 5 years. This gives AATF the opportunity to build on past work, intensify its advocacy activities and build awareness among various stakeholders.

During 2019, OFAB intensified awareness creation efforts to support better understanding and action for biotechnology in all project countries.

School biotech and biosafety clubs were launched in Nigeria to build better understanding of biotechnology among the youth and to encourage a student-to-student engagement for awareness creation on the role and importance of biotechnology in achieving food security. The initiative was launched by OFAB Nigeria Chapter at High-grade International Secondary School in Mararaba, Nasarawa State in July and was witnessed by more than 1,000 participants attending the school's 18th graduation and price-giving ceremony.

Capacity strengthening workshops were organised in Ethiopia on effective engagement and communication on agricultural biotechnology. The first workshop held in April and attended by 45 participants aimed at strengthening the capacity of scientists and regulators in the Afar and Tigray regions in communicating agricultural biotechnology while the second workshop also held in April, attended by 71 participants sought to improve communication and reporting on agricultural biotechnology for journalists and information officers.

Panelists at the National Dialogue on Genetically Modified Crops in Kenya, 24 April 2019

The first national dialogue on genetically modified (GM) crops in Kenya was held on 24 April at the University of Nairobi. The dialogue, convened by Kenya's Ministry of Agriculture, Livestock and Fisheries (MoALF) in collaboration with OFAB, was attended by 150 participants, including policy makers, scientists, religious leaders, farmers and journalists. The chief guest during the event was Principal Secretary, Prof Hamadi Boga, in the State Department for Crop Development and Agriculture Research, Ministry of Agriculture. The dialogue aimed at promoting public awareness on agricultural biotechnology, addressing public concerns on GM crops and correcting misinformation, myths and misconceptions around GM crops.

Consultations on biosafety and regulatory matters continued in Uganda where a biosafety forum was held in April to discuss finalisation of the Biosafety Bill. The forum, attended by 60 participants, was a collaboration between OFAB, the African Biosafety Network of Expertise (ABNE), Uganda National Council for Science and Technology (UNCST), Program for Biosafety Systems (PBS), Uganda Biosciences Information Centre (UBIC) and Ministry of Science, Technology and Innovation (MoSTI). A second forum was held during the same month to review the MoSTI draft Biosafety Guidelines/Regulations and it brought together 55 participants from MoSTI, UNCST, National Agricultural Research Organisation (NARO), National Environmental Management Authority (NEMA) and civil society groups, among others.

Outreach campaigns were enhanced in 2019 with Tanzania's OFAB Chapter and its host organisation, the Tanzania Commission for Science and Technology (COSTECH), supporting the national biotech outreach campaign being carried out by the Vice-President's Office. The campaign that started in May 2019 aims at supporting the country build understanding of the technology especially among farmers and grassroot communities.

In a similar manner, the OFAB Chapter in Ghana reached out to over 70 farmers in Kumasi and Tamale to raise awareness on agricultural biotechnology during an event held in Tamale on 31 May 2019.

Towards harmonised seed and biopesticide regulations for SSA

Registration of pest control products in the East African Community (EAC) region received a boost with adoption of the Regionally Harmonised Guidelines for Testing and Registration of Bio-pesticides by the EAC Council of Ministers in November 2019. The document comes in handy as a guide in the process of bio-pesticide registration in EAC partner states and in the standardisation of data requirements for product registration for companies with interest in testing and registration of promising bio-pesticides in the region.

To ensure effective implementation of the harmonised guidelines, AATF provides technical assistance through the Africa Fall armyworm Pesticide Efficacy and Registration Trials (AFA-PERT) to pesticide regulators in EAC partner states to fast-tract domestication and implementation of harmonised guidelines.

In view of this, agro-chemical firms in EAC region with interest in testing and registration of promising bio-pesticides to control the FAW and other emerging pests now have guidelines to do so following validation and adoption of the Harmonised Guidelines for Testing and Registration of Biopesticides by the EAC Council of Ministers. The adoption of the document in Arusha in October 2019 followed a series of high-level meetings of the Technical Working Group on

Dr Kayode Sanni, Project Manager – Rice Projects, AATF (left), Prof. Hamadi Iddi Boga, Principal Secretary State Department of Agricultural Research in Kenya (center) and Dr. Denis Kyetere, Executive Director AATF during the launch of AHyRA

Mr. Charles Malidadi, Vegetable Commodity Team Leader at Malawi's Department of Research Services, reflects on the limited vegetable seed varieties available to farmers at one of Blantyre's largest agro-dealer store.

pesticides composed of pesticide experts from the partner states (Burundi, Kenya, Rwanda, South Sudan, Tanzania and Uganda) and stakeholders through a collaborative effort between the TAAT Policy Enabler Compact and the USDA-FAS project in partnership with the EAC Secretariat.

In the West African region, the AATF-led Technologies for African Agricultural Transformation (TAAT) Policy Enabler Compact convened a high-level policy dialogue event in Dakar, Senegal in June 2019 to review status of domestication and implementation of the regionally harmonised ECOWAS Seed Regulations. The event was attended by 53 participants from the national regulatory agencies in charge of variety release and registration, phytosanitary and quarantine measures, certification and quality control, the private sector and representatives from the United States Agency for International Development (USAID), AfDB, the African Union (AU), the Alliance for a Green Revolution in Africa (AGRA), ECOWAS, UEMOA and CILSS. The review meeting particularly sought to identify the gaps towards full domestication in order to develop an action plan for implementation. The overall outcome of this event goes a long way in accelerating the implementation of regionally harmonised seed regulations within countries in ECOWAS, UEMOA and CILSS regions.

Supporting seed industry reforms at country level

Efficiency in supply of quality seed to farmers is critical to moving forward the agriculture transformation agenda. TAAT Policy Compact facilitated 25 seed industry stakeholder policy dialogues and trained eight individuals on seed industry assessment during 2019. The dialogues helped identify and validate challenges affecting the implementation of policy and regulatory frameworks in the seed sub-sector in eight countries. These dialogues and engagements further culminated in three regulatory instruments in two countries: Plant Variety Protection Bill signed into law in Malawi; and the National Seed Decree passed, and the National Variety Catalogue adopted in the Democratic Republic of Congo.

25
Seed industry stakeholder policy dialogues facilitated by TAAT Policy

Assessing value chains for small ruminant and poultry

TAAT Policy Compact completed assessment and validation of the small ruminant and poultry value chain in Mali and Ethiopia. Through the assessments, key areas of convergence from past studies on critical issues that are of policy importance for the value chain were identified. The findings of this assessment were presented for stakeholder review and validation during the Africa Livestock Exhibition and Congress (ALEC) – 5th Ethio Poultry EXPO 2019, a forum that was partially sponsored by the TAAT Livestock and Policy Compacts in October 2019. Besides validation, policy actions to deal with the challenges in the poultry sub-sector were also identified and prioritised for targeted outreach, advocacy and engagement efforts. In addition, the TAAT Policy Compact supported the efforts for eliminating counterfeit agro-inputs through accreditation of agro-input dealers. Accreditation protocols were developed and used to vet and incorporate 120 agro-input dealers into the catalogue of accredited dealers in Nigeria and Tanzania.

120
Agro-input dealers accredited in Nigeria and Tanzania in 2019 using the accreditation protocols

Recognising excellence in science reporting

In recognition of the key role that media plays in informing, educating, shaping and interpreting the biotech agenda, AATF holds annual OFAB Africa Media Awards for journalistic excellence in agricultural biotechnology reporting.

The third Africa Media Awards ceremony was held in November 2019 in Mombasa, Kenya during the OFAB Annual Review and Planning Meeting. The ceremony, attended by 40 journalists from Africa, saw Gabriel Kudaka, a broadcast journalist from Kenya, emerge as the 2019 OFAB Africa Journalist of the Year *(https://www.youtube.com/watch?v=ENjfkwp08Jg) for his excellent feature on Food Friday program (https://www.youtube.com/watch?v=gaa1OOrSRtw)* on NTV. The feature highlighted benefits of genetically modified cotton and maize and brought out issues and concerns from different countries specifically Tanzania and Kenya. He also effectively used the voices of key stakeholders such as policy makers, farmers and researchers in a simple and easy to understand way. David Rwenyagira from Tanzania and Abdullahi Tsanni from Nigeria won in the special categories of radio and print media respectively.

40

Journalists from Africa attending the third OFAB Africa Media Awards ceremony was held in November 2019 in Mombasa

The award winners are eligible to apply for competitive OFAB Africa grants, ranging from $1,000 to $5,000, to conduct research and publish impact stories related to agricultural biotechnology.

OFAB Africa Media Award winners with AATF team during the third Africa Media Awards ceremony in November 2019 in Mombasa, Kenya

Gabriel Kudaka (left), the 2019 OFAB Africa Journalist of the Year receives his trophy from Denis Kyetere, Executive Director, AATF during the award ceremony in November 2019 in Mombasa, Kenya

Looking forward

Jointly with partners, AATF will heighten activities towards the creation of a supportive and enabling environment for the commercialisation and adoption of biotech products in the project countries to stimulate innovation, technology uptake and agribusiness. AATF will continuously apply lessons learned into the processes of negotiation, access, and acquiring intellectual property through licensing, and align the technology transfer process to ensure its suitability for the future of farming, attracting women and youth.

Harvesting of Hybrid Rice NPT in Kisumu in December 2019

Financial Report 2019

These AATF standalone audited financial statements cover the period from January 2019 through December 2019 and provide comparative data for 2018 – the previous accounting period.

Funding overview

AATF main investors for the year 2019 were: Bill & Melinda Gates Foundation; United Kingdom's Department for International Development; United States Agency for International Development; Syngenta Foundation for Sustainable Agriculture; and African Development Bank through the International Institute of Tropical Agriculture.

AATF is grateful to all its investors for their continued support that ensures that its commitment towards assisting resource-constrained farmers in accessing affordable agricultural technology to improve their lives is achievable.

Statement of financial position as at 31 December 2019 (US$)

	2019	2018
ASSETS		
Non-current assets		
Plant and Equipment	163,240	175,558
Intangible assets	2,892	5,785
Right-of-use assets	1,076,167	
Investments in subsidiaries	983,162	444,319
Loans to group companies	444,558	435,221
Sub total	2,670,019	1,060,883
Current assets		
Contributions receivable	2,965,012	1,776,304
Other receivables	832,851	1,475,449
Cash and cash equivalent	14,350,731	10,479,562
Sub total	18,148,594	13,731,315
Total assets	20,818,613	14,792,198
EQUITY AND LIABILITIES		
Equity		
Capital contributions	383,953	374,540
Retained income	8,251,335	5,545,757
Liabilities		
Finance lease liabilities	1,054,146	0
Current liabilities		
Payables and accruals	1,233,138	1,730,452
Finance lease liabilities	74,187	0
Deferred income	137,754	146,569
Unexpended grants payable 28 9,684,100 6,994,880	9,684,100	6,994,880
Total equity and liabilities	**20,818,613**	**14,792,198**

Statement of comprehensive income (abridged version in US$) For the year ended 31 December 2019

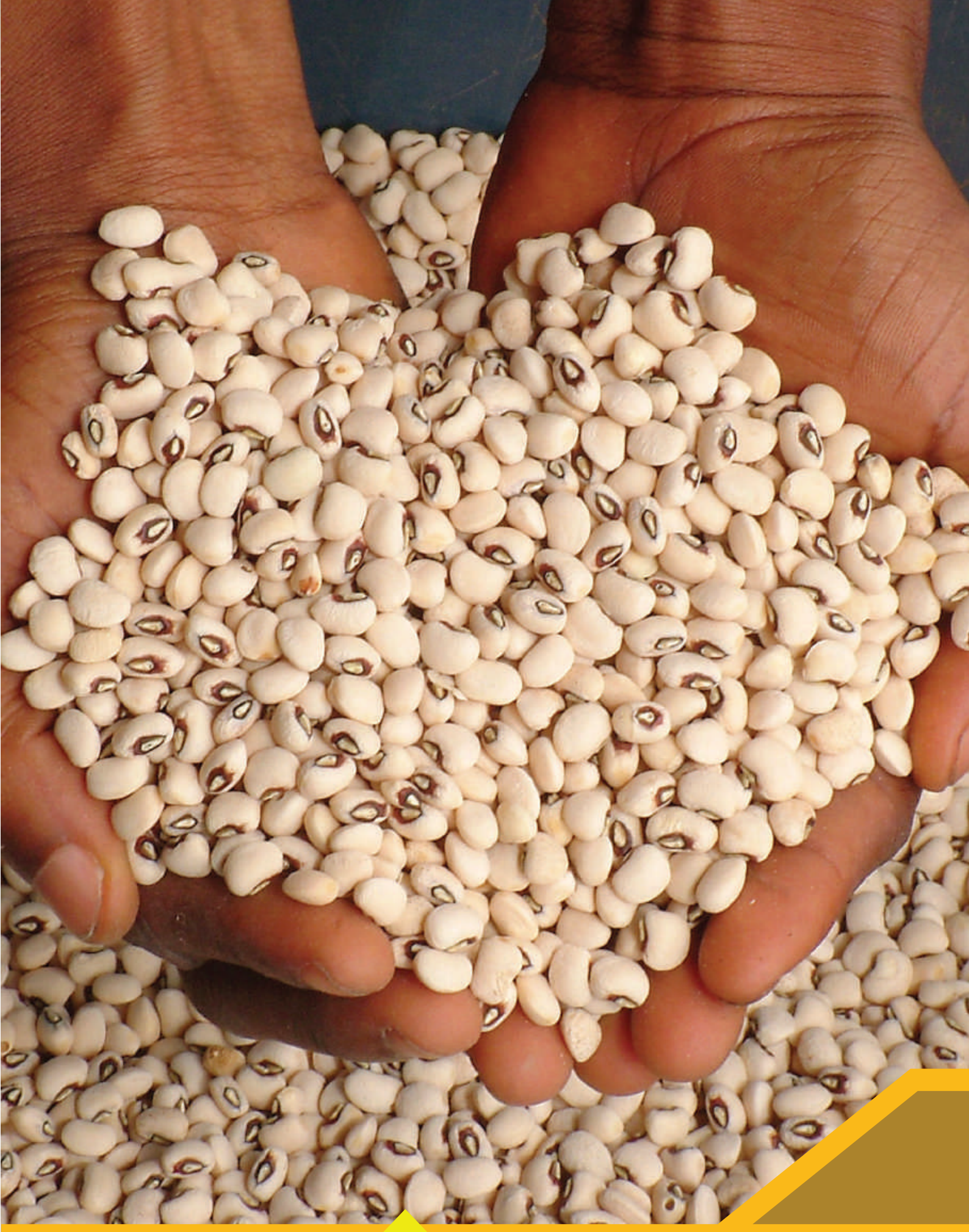
	2019	2018
INCOME		
Grant income	18,411,539	15,371,075
Other income	3,045,404	1,453,924
Deferred income	8,812	-122,085
TOTAL INCOME	**21,465,755**	**16,702,914**
EXPENDITURE		
Project related expenses	15,991,337	13,494,694
Management and general expenses	2,768,843	2,897,712
TOTAL EXPENDITURE	**18,760,180**	**16,392,406**
SURPLUS FOR THE PERIOD	**2,705,575**	**310,508**
Percentage of management and general expenses to the total operating expenses	14.76%	17.68%
Percentage of project related expenses to the total operating expenses	85.24%	82.32%
	100%	100%

Financial status

The funding received/ available income as at 31 December 20198 was adequate for the Foundation's needs for the year as all expenditures were fully catered for. The Foundation's finance is healthy.

The foundation recorded a net surplus after tax for the year ended December 31, 2019 of US$2,705.575 compared to the net surplus after tax of the prior year of US$301,608. The Foundation revenue has at the same time increased from $ 16,702,914 in the prior year to US$21,465,755 for the year ended December 31, 2019. T

The future is promising with AATF's main donors continuing to support the Foundation and the opportunities to get new funding from both the existing donors and potential donors.



Undamaged and very clean white grain harvest of PBR cowpea

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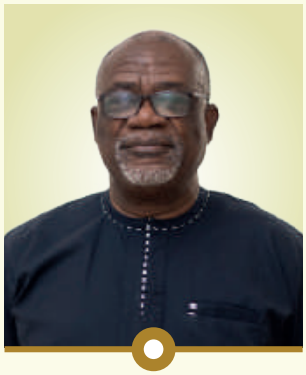

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Remembering Dr Gospel Oluoch Omanya

Dr Gospel Omanya, who passed away on 16 June 2019 at age 51 after a short illness, was a plant geneticist and Africa's frontier seed systems expert with decades of combined work experience mostly spent as practitioner of technology deployment at AATF where he worked for 15 uninterrupted years.

Gospel had a trailblazing career in agricultural research that immensely impacted farmers in Africa. Joining AATF in 2005 as Geneticist and Seed Systems Manager, Gospel rose through the ranks to serve in the positions of Projects Manager, Seed Systems Manager, Seed Stewardship Manager rising to become Senior Manager for Deployment and later on as Technology Lead and Coordinator for TAAT Maize Compact.

The diversity of responsibilities that Gospel took on at AATF and in his prior professional life was simply extraordinary, as were the intelligence, energy, enthusiasm, and collegiality he brought to all of them. Gospel's reputation, esteem and fame – social and spiritual, professional

and technical – have gone well ahead of him beyond the frail frontiers of his native country Kenya and the bold boundaries of Africa to enduring friendships and networks across the world.

'The biology of his heart, the chemistry of his soul and the alchemy of his spirit blended ever so beautifully that Gospel charmed and wowed everyone he met. With the characteristic signature smile that Gospel wore, the physics of his character was pure magnetism. He attracted one and all to his own. His beaming face, radiant smile and infectious friendly personality ... were pleasant to all the people he met in his life.' Dr Francis Nang'ayo, Senior Manager, Policy and Regulatory Affairs, AATF

'For us at AATF, his close colleagues, professional colleagues in the TAAT Program and across the world, what Gospel brought to our work was not only a first-class mind, a deeply informed focus on some of the most important issues at the intersection of technology and deployment nexus, an admirable commitment to seed delivery, a mind-boggling stamina for work, and his exceptional standing as a global leader in crop technology diffusion.

He was also a wonderful colleague, warm, ever upbeat and enthusiastic, always ready to consider seriously the views of others, always looking for ways to contribute a better world, a prosperous Africa.

We surely do miss him.'

Dr Denis Kyetere,
Executive Director, AATF.

Investors

Partners

Key acronyms

ABNE	African Biosafety Network of Expertise
AfDB	African Development Bank
AGRA	Alliance for a Green Revolution in Africa
AHyRA	Alliance for Hybrid Rice in Africa
AUDA	African Union Development Agency
CAMAP	Cassava Mechanisation and Agro-processing Project
CFT	Confined field trial
CILSS	Permanent Interstate Committee for Drought Control in the Sahel
COSTECH	Tanzania Commission for Science and Technology
DRC	Democratic Republic of Congo
EAC	East African Community
ECOWAS	Economic Community of West African States
FAW	Fall armyworm
IAR	Institute for Agricultural Research
IRRI	International Rice Research Institute
KEPHIS	Kenya Plant Health Inspectorate Service
MLN	Maize Lethal Necrosis
NaCRRI	National Crops Resources Research Institute
NARO	National Agricultural Research Organisation
NARS	National agricultural research systems
NEMA	National Environmental Management Authority
NEPAD	New Partnership for Africa's Development
NPT	National performance trial
NVT	National Variety Trial
OFAB	Open Forum on Agricultural Biotechnology in Africa
PASTTA	Partnership for Seed Technology Transfer in Africa
PBR	Pod Borer Resistant (Cowpea Project)
PBS	Program for Biosafety Systems
QBS	QualiBasic Seed Company
RDK	Rapid diagnostic kits
RYMV	Rice Yellow Mottle Virus
Seeds2B	Seeds to Business
SSA	Sub-Saharan Africa
TAAT	Technologies for African Agricultural Transformation
UBIC	Uganda Biosciences Information Centre
UEMOA	Economic and Monetary Union of West Africa
UNCST	Uganda National Council for Science and Technology
USAID	United States Agency for International Development
USDA	United States Department of Agriculture
USDA-FAS	USDA Foreign Agricultural Service
WEMA	Water Efficient Maize for Africa

AATF
PROSPERITY THROUGH TECHNOLOGY

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