



ANNUAL REPORT
2020

**Connecting farmers to technologies
in the face of COVID-19**



Connecting farmers to technologies in the face of COVID-19

Annual Report
2020



Nairobi, Kenya



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2020 achievements at a glance

2,761,348

– the cumulative number of farmers adopting technologies developed through AATF projects between 2018 – 2020.



12.8 million

– farmers reached with agricultural technologies developed through AATF projects between 2018 – 2020.



9.2 million

– farmers reached through advocacy, outreach and policy interventions between 2018 – 2020.



3,010,904

– farmers reached through advocacy, outreach and policy interventions.



31

– private seed companies trained in six countries on seed production and stewardship.



1,044

– demonstration sites established (849 in Kenya, 145 in Tanzania, and 50 in Uganda).



3,116

– value chain actors that AATF worked with in 2020.



696.9

– tonnes of certified seed produced by AATF and partner seed companies (591mt of TEGO, 100mt of StrigaAway and 5.9mt of TELA).



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.

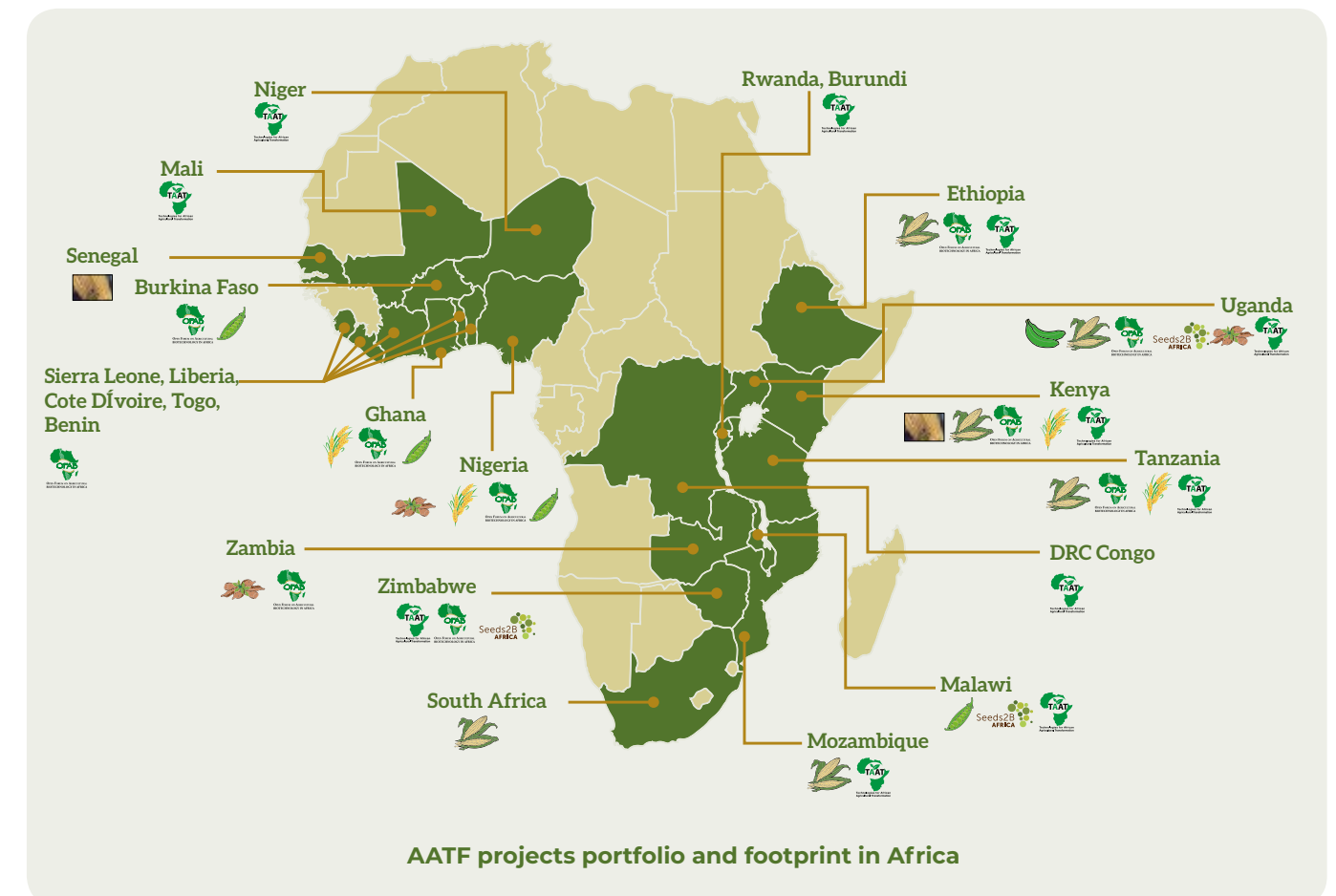
It works towards an Africa where women, men and young farmers have rapid access to state-of-the-art agricultural technologies to help them achieve the desired agricultural transformation that promises food and nutrition

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 to create sustainable markets.

AATF focuses on the most important crops for smallholder farmers, including maize, cowpea, banana, rice, potato and cassava 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 48 based in the organisation's headquarters in Nairobi, Kenya, country office in Abuja, Nigeria, and in field offices around the continent.



Message from the AATF Board Chair



Ousmane Badiane,
AATF Board Chair

“Over the coming years, AATF, in alignment with its new strategy (2018–2022), will seek to promote digitisation of the value chains to rapidly reach and deliver technologies to smallholder farmers and support technology applications on farmer fields.”

By thrust of fate and a mixture of inadvertent and concerted happenings, 2020 will be defined and referenced as a unique chapter in the annals of history for the social and economic changes it forced that led to new global norms from a general broad perspective and agriculture specifically. The strain, stresses and related disruptions brought about by the COVID-19 pandemic challenged our understanding and ways of doing things. It tested our resolve to succeed against all odds and compelled us to examine critical components of development in the face of possibly one of the greatest crises of humankind – and forced us to do things differently and more efficiently to cope with the seething and unprecedented circumstances that emerged.

The race to limit the spread of COVID-19 has, through necessity, accelerated many other science, technology and innovation transformations that were already under way, including digital revolution in African agriculture. What had previously been a growing but limited shift towards the use of digital tools and technologies for food production and business has become a lifeline in the face of market and business disruptions, threats to food and nutrition security, and profound changes in our daily lives.

Africa has already made considerable progress on the roadmap towards digital utilisation. For instance, early back in 2012, Nigeria deployed an e-wallet mobile network to power the Growth Enhancement Support scheme under the Agricultural Transformation Agenda (ATA) of the government. The e-wallet successfully provided an efficient and transparent system for implementing the government initiative in which 7.1 million farmers received agricultural farm inputs with US \$1 billion in government subsidies accessed by farmers. Technological revolution for financial inclusion best illustrates how digital utilisation is taking shape in Africa. Mpesa, a mobile phone-based money transfer service, payments and micro-financing service, launched in 2007 in Kenya with a total of 48 million users to date, has become a platform that has enabled efficient financial transactions with ease and in real time.

The continent has since shown strong awareness and explored digital application for agricultural development with more people increasingly accessing and using smartphones under a rapidly expanding connectivity to the internet. This development has made it possible to accelerate information exchange and reach in fast time thus catalysing the deployment of affordable, relevant agricultural technologies and products that best meet the needs of farmers.

Early in our five-year strategy (2018–2022), we identified digital technologies and innovations as key solutions to revolutionising

agricultural processes crucial to improving farmer production power at low cost, stimulating data-enabled farming, increasing access to information, knowledge, input, and markets among others towards generating more social, economic and environmental benefits for farmers and other value chain stakeholders.

Through consultative engagement forums with partners, we identified access to market and increase in agricultural productivity as the most viable niches where adoption of digital agriculture solutions would have the greatest potential to positively impact the livelihoods of smallholder farmers and households in African countries.

To this end and given the wide array of digital innovations available in the agriculture space and in the face of limited resources, we have over the years been identifying focus areas to guide intelligent interventions and investment for quick and better impacts.

In 2020 therefore, we released to farmers in Nigeria our Agridrive Mobile Application which was developed in 2019 to aid farmers in rapid access to mechanisation services covering a range of operations from land tillage to harvest of crops and post-harvest haulage to fast-track market and agroindustry supplies. The App was designed to be accessible through mobile phones and is currently available on Android and iOS. It has been so far successfully used by a significant number of farmers in different states in Nigeria. During the COVID-19 restrictions, the App

ensured that farmers were able to continue farming activities uninterrupted. The Agridrive App is a good example and demonstration of the power of digital technology in bridging smallholder farmers directly with mechanisation and other specialised services they require.

We stayed connected virtually working towards a sustainable future during the COVID-19 crisis.

We had also previously developed the Market Information Support System for Cassava Mechanisation and Agroprocessing Project (MISS-CAMAP) to strengthen farmer access and links with markets. The MISS-CAMAP system provides information on transporters, buyers, suppliers and customers as well as prices to better equip farmers to efficiently navigate markets and transact with convenience. AATF has registered farmers from Nigeria, Zambia and Uganda on the system. The features will be integrated into the Agridrive App to facilitate access by more farmers as the organisation expands its footprint to more countries on the continent.

As part of a large consortium working to strengthen and improve the seed system in Africa, AATF is facilitating improved and efficient seed production, seed inspection and seed certification processes

through the SeedAssure digital platform. The platform offers quick decision making in seed system processes, improved data management, product traceability, efficient seed dispatch and seamless cross border seed trade in Africa.

Over the coming years, AATF, in alignment with its new strategy (2018–2022), will seek to promote digitisation of the value chains to rapidly reach and deliver technologies to smallholder farmers and support technology applications on farmer fields. We recently acquired drones to strengthen data science integration for customised support services to farmer specific needs to help maximise results from AATF technologies. Digital agriculture in the form of precision farming and big data will not only change the way farmers do their business but also alter the way input companies sell and distribute products, causing a substantial beneficial shift to the marketplace.

As the world is trying to return to normal, we are filled with hope, determination and positive energy to continue in our spirited drive to deliver innovative technologies to African farmers. We stayed connected virtually working towards a sustainable future during the COVID-19 crisis. In 2021, we aim to speedily build back from the pandemic and continue to deliver the needed support to our partners as we collectively work to achieve a food secure Africa. The team at AATF wishes you good health, peace, joy, and prosperity throughout 2021. Thank you for your continued support and partnership.

Message from the Executive Director



Denis T Kyetere,
AATF Executive Director

“Towards the end of the year, we were nominated by the African Union Commission (AUC) to lead the Working Group on Research, Variety Development and Seed Production of its African Seed and Biotech Platform. This is a recognition of AATF’s experience and capability.”

2020 was a year like no other. The emergence of the COVID-19 pandemic early in the year wreaked havoc and uncertainty across the globe, disrupting normal business operations of organisations, including us. We took great care to ensure the safety of our staff, partners and stakeholders and focused on activities that could be carried out under the prescribed conditions issued by the respective governments where we work, the World Health Organisation and Centers for Disease Control and Prevention. Despite the challenges brought by the pandemic, our staff and partners remained committed to our bold vision of transforming livelihoods of smallholder farmers in Sub-Saharan Africa (SSA) through increased scaling up of innovative agricultural technologies to improve incomes, food, and nutrition security.

Virtual meetings and events proved to be effective and efficient in seeking to implement our activities in the circumstances of the pandemic. Webinars particularly came in handy in providing opportunity to share and gather knowledge and experiences with stakeholders. We organised three webinars on commercialisation, mechanisation and intellectual property and enabling environment, subjects that are central to our work. <https://tinyurl.com/julywebinar2020>; <https://tinyurl.com/november2020webinar>. In addition, we held a joint roundtable discussion in partnership with AUDA-NEPAD on the crucial matter of biotechnology and its role in enhancing agricultural productivity on the continent. <https://tinyurl.com/audanepadpressrelease>.

As we continue our journey towards expanding access, availability and use of innovative technologies, I wish to share some developments recorded during 2020 that speak directly to our 2018-2022 strategy and business plan anchored on three strategic objectives:

- i) To diversify agricultural technologies accessed for use in SSA;
- ii) To accelerate commercialisation of agricultural technologies for improved farmer livelihoods; and
- iii) To create an enabling environment for increased uptake and use of agricultural technologies.

In the strategy, we committed to reaching 16 million farmers by end of 2022. Three years into implementation of the strategy, we have reached 12.8 million farmers with agricultural technologies developed through AATF projects, which is 80.5% performance rating against our five-year target of 16 million farmers.

Diversify agricultural technologies accessed for use in SSA

We made positive progress with the release of eight varieties of five crops to farmers during the year and introduction of a digital application to support farmers in accessing mechanisation services. The varieties released include one maize variety in Ethiopia for drought tolerance, high yield and tursicum leaf blight disease resistance; one Pod Borer Resistant (PBR) Cowpea for insect resistance in Nigeria, two groundnut varieties released in Malawi for disease resistance (rosette virus, late leaf spots), early maturity and high yield; one soybean in Malawi for improved yield, high protein and oil content; and six TAAT maize varieties. Two hybrid rice varieties are at an advanced stage for release in Kenya for super yield at over 12 tonnes compared to the best commercial hybrid check.

Through our social enterprise, Agridrive, a total of 750ha of forage production was accomplished, well over the

500ha that was the 2020 target. This was undertaken through partnership with Sahel under the Advanced Local Dairy Development in Nigeria (ALDDN) initiative where we are facilitating and availing high nutrient grass crop species to produce feed for the dairy industry in Nigeria. Interest in mechanisation continues to grow among farmers and in 2020 alone a total of 168,217 hectares of mechanisation operations were carried out in Nigeria, Zambia and Uganda through the Cassava Mechanisation and Agroprocessing Project (CAMAP) despite the COVID 19 restrictions.

On our contribution towards digital agriculture, we have commenced engagements with Kurai for acquisition of drones to complement our mechanisation services. This will contribute to advancing sustainable agriculture using digital tools for crop monitoring, data collection and other agronomical aspects to increase agricultural productivity in Africa.

We are in consultation with International Maize and Wheat Improvement Center (CIMMYT) through HarvestPlus to source climate-resilient, orange maize varieties that are rich in vitamin A to build on the nutrition and health aspect of our work. We are also making progress towards addressing post-harvest loss management and are in discussions with CLAYUCA to access a highly efficient high-capacity processing machine for flour production to minimise post-harvest losses of four commodity crops (cassava, taro, potato and yam) and to improve on value addition for increased income for farmers.

Towards the end of the year, we were nominated by the African Union Commission (AUC) to lead the Working Group on Research, Variety Development and Seed Production of its African Seed and Biotech Platform. This is a recognition of AATF’s experience and capability. This platform will contribute a great deal to getting new and appropriate agricultural technologies to farmers.

Accelerate commercialisation of agricultural technologies for improved farmer livelihoods

We continued with efforts towards establishment of a robust technology delivery system through support of a functional seed system, input-demand systems, distribution systems, and organisation of agro-dealer and farmer networks.

We were able to engage 3,116 value chain actors including seed companies, agro-dealers, out-grower seed producers, grain traders, and processors to create good market systems supportive of agricultural development. Additionally, we

were able to facilitate market linkages for 111,470 farmers through engagement with several off-takers through the AfDB-led initiative – the Technologies for African Agricultural Transformation (TAAT) program.

Raising the interest of farmers in new technologies contributes to building demand for products and enhancing uptake. We therefore worked with partners and collaborators to carry out field days, trainings, seminars

and outreach. We established 713 demonstration plots and conduct 47 field days reaching 84,668 farmers who took up technologies generated through AATF projects in 2020. This brings the cumulative number

of farmers using technologies generated through our projects to 1,746,118 over three years of implementing the five-year strategy, which is 43% of the 4 million five-year target.

Create an enabling environment for increased uptake and use of agricultural technologies

We continued our efforts towards helping build an enabling environment for technology access, development, and use. Through the AfDB-funded TAAT Project, we facilitated the passage of Seed Law in Liberia and supported the review of the draft Plant Variety Protection Regulations in Malawi. We also supported compilation of a catalogue of accredited agro-input dealers in Mozambique and facilitated domestication of the Common Market for Eastern and Southern Africa (COMESA) Harmonised Seed Regulations in Egypt.

Through the Open Forum for Agricultural Biotechnology (OFAB) Project, we continued efforts towards enhancing the agricultural biotechnology environment in the countries. In Kenya, we were invited into the Cotton Task Force where we provided platforms for multi-stakeholder engagements on the benefits of Bt cotton and helped organise the launch of the first commercial Bt cotton planting in Kenya in March 2020. The country Chapter also produced a policy brief that

aimed at guiding the government on addressing the overlaps between the National Biosafety Act and Environmental Management and Coordination Act (EMCA).

In Ethiopia, the OFAB Chapter deepened its public outreach through set up of three more nodes in universities bringing the total number of nodes to eight. Ghana enacted the Plant Breeders Act and the country OFAB Chapter played a crucial role in supporting the process. Engagements, consultations, and educational tours of biotech fields continued with various stakeholders including farmers, decision makers and professional bodies in all countries.

In addition to continuing its activities in the countries, OFAB was able to virtually recognise and award 18 journalists across Africa for their excellence in biotech reporting under the annual OFAB Africa Media Awards that seeks to promote best practice in biotechnology reporting in Africa.

We continued to strengthen our partnerships through which we

accomplish our mandate. We therefore worked with AUDA-NEPAD to jointly organise a high-level consultative meeting on biotechnology in Africa as part of the October Celestous Juma Executive Dialogue (CJED) events. The outcome of the meeting will inform an Africa-wide conference on biotechnology that the two institutions will jointly organise in 2021.

We also partnered with Tanager to support our efforts towards integrating nutrition into our programmes. Accordingly, Tanager trained AATF Gender Working Group on enhancing gender-sensitive actions within projects.

These achievements have been made possible by you, our investors, partners, staff, and the Board. I sincerely thank you for your continued support and look forward to 2021 with renewed determination and optimism in our quest to contribute towards transforming the livelihoods of farmers in Sub-Saharan Africa through innovative agricultural technologies.



Strategic Objective 1

Diversifying agricultural technologies accessed for use in Sub-Saharan Africa (SSA)



Mr. Hesbon Chongeywo of Busia sub-county in Kenya in his maize farm that is used as one of the trial plots under AATF's TAAT Compact Project

In diversifying technologies for use by farmers in SSA, AATF strives to increase adoption of diverse seed-based and non-seed based agricultural technologies including mechanisation and digital tools. AATF believes adoption of these technologies will improve agricultural productivity and enhance nutritional value and post-harvest management of staple and selected non-staple crops.

In 2020, AATF made some positive strides despite the challenges brought about by the COVID-19 pandemic. Together with partners, AATF released eight new crop varieties to farmers and introduced a digital application called Agridrive App to support farmers in accessing mechanisation services.

12.8 million
- farmers reached with agricultural technologies developed through AATF projects within three years of implementation of the current strategy (2018 – 2022)

Accessing high-end seed-based varieties for farmers

Working with partners, AATF accessed 185 varieties of tomato (67), soybean (60), groundnut (47) and onion (11) that were introduced into the variety testing systems of Uganda, Ghana, Zimbabwe and Malawi. This brings to 290 the total number of varieties accessed by AATF during this period against a target of 225 set for the period. These varieties were accessed from the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the Department of Agricultural Research Services (DARS), Agricultural Research Council (ARC) from South Africa, New Mexico State University and private seed companies in China were negotiated through the Seeds2B Project.

Human nutrition and health improvement are key impact areas for AATF. During the year, AATF held discussions with Corteva on biofortified sorghum and the International Rice Research Institute (IRRI) on high iron/zinc rice. A concept note was developed by AATF and IRRI for fundraising for an iron and zinc rice project. AATF also initiated consultations with CIMMYT through HarvestPlus to

source climate-resilient, orange maize varieties that are rich in pro-vitamin A. Strides were also made towards addressing post-harvest loss management with discussions held with CLAYUCA to access a highly efficient high-

capacity processing machine for flour production to minimise post-harvest losses and to improve on value addition of four commodity crops (cassava, taro, potato and yam) for increased income for farmers.



Tomato and onion Field Days with B2B Events

New product release and evaluations



Dr. Eliud Kireger, the Director General KALRO (second left) leading the Project team members during planting of TELA maize in Kibos NPT site, Kenya, on 28th August 2020

Farmers in SSA will soon have access to eight new varieties representing four crops (maize, cowpea, soybean and groundnut) recently released by AATF and its partners (Table 1).

One maize hybrid was released in Ethiopia for drought tolerance, high yield and turcicum leaf blight disease resistance; two maize hybrids that are drought tolerant were released in Nigeria; two groundnut varieties were released in Malawi for disease resistance (rosette virus, late leaf spots), early maturity and high yield; one soybean variety for improved yield, high protein and oil content was released in Malawi; one *Maruca*-resistant cowpea variety was released in Nigeria.

Table 1: Number of varieties released

Variety released	Crop	AATF Project	Country	Number of varieties released
DroughtTEGO® - WE 7210	Maize	TELA	Ethiopia	1
DroughtTEGO®-WE5202; WE5229	Maize	TELA	Nigeria	2
ICGV-SM 03530 and ICGV-SM 0852	Groundnuts	Seeds2B	Malawi	2
TGX 1991-22F	Soybean	Seeds2B	Malawi	1
SAMPEA 20-T	Cowpea	PBR Cowpea	Nigeria	1

A further 30 rice hybrids were shared with Togo and Senegal as part of AATF's partnership engagement with African governments to diversify agricultural technologies for use in those countries.

A key essential activity required towards getting new innovative technologies released as varieties to farmers is the conduct of National Performance Trials (NPTs). After a four year wait, Kenya planted the first NPTs for

the TELA (Bt) maize. The trials, planted at four sites in August 2020 and three additional sites in October 2020, were managed in collaboration with the Kenya Agricultural and Livestock Research Organisation (KALRO) and the Kenya Plant Health Inspectorate Service (KEPHIS) which is mandated to conduct the trials. The successful completion of the trials is likely to result in the registration of Bt maize hybrids for commercial production in 2021.

8

- new crop varieties released to farmers.

290

- number of varieties accessed by AATF in 2020.

A total of seven products in the Seeds2B Project involving the Partnerships for Seed Technology Transfer in Africa (PASTTA) underwent various levels of evaluation during the year. The project conducted NPTs for soybean, groundnut, pigeon pea, cowpea and tomato in Uganda with the best performing materials expected to be released as new varieties in 2021. The project also carried out trials and performance evaluations in Ghana for tomato, pepper and onion varieties which were sourced from different local and international private

seed companies. These trials were conducted to generate key information crucial to the release of varieties in Ghana.

The Hybrid Rice: Breeding by Design Project (Hybrid Rice Project) concluded two seasons of NPT trials for eleven rice hybrids in three KEPHIS designated locations; Malindi, Bondo and Kisumu in Kenya. Results of the two seasons of NPTs showed that two new rice hybrids performed better than the best commercial hybrid checks, and six hybrids performed better than the best

commercial inbred check. The best performing hybrid yielded 12.7MT/ha; a yield gain of more than 2 MT/ha over the hybrids rice varieties released in Kenya in 2018 and had a yield advantage of 22.9% over the best commercial hybrid check (10.3 MT/ha) and 41.8% over the best commercial inbred check (9MT/ha). Three best performing hybrids from the two seasons of NPT are currently undergoing Distinctness, Uniformity, and Stability (DUS) test by KEPHIS and are expected for release in the 3rd quarter of 2021.



Dr. Sylvester Oikeh, TELA Maize Project Manager in a performance site where TELA Bt Maize (Left; WE5206B) is compared with Non-Bt Maize (Check; Right) at KALRO-Thika; 22 Feb 2021



Farmers planting rice during on-farm Multilocal trials at Igurusi, Mbeya, in Tanzania in April 202



Edith Kouko, Programme Officer for Hybrid Rice Project at AATF with farmers during a visit to the rice scheme in Kwale County on 17 March 2020 to evaluate rice varieties planted by farmers in the scheme.

Another set of six rice hybrids and one inbred line underwent multi-location trials in five sites in Tanzania at Babati, Ukiriguru, Kilombero, Morogoro and Mombo. Results from the evaluation indicated that four new rice hybrids yielded higher than the best commercial inbred check. During the trial, at least 150 farmers participated in the Participatory Variety Selection (PVS) to guide selection of farmer-preferred hybrid rice varieties for release.

Following the commercial release of the *Maruca* resistant PBR Cowpea in Nigeria towards end of 2019, the project-initiated licensing of seed companies for commercial production of cowpea seeds for farmers. AATF worked with the seed unit (which also doubles as a registered seed company) of the Institute of Agricultural Research (IAR) to accelerate the

production of foundation seed for the transgenic variety. In 2020, the company produced 1,133kg of foundation seed to help licensed seed companies to kick start the production of commercial certified seed for sale to farmers. About 3,000kg pre-commercial seed were produced for pilot sales to be undertaken in 2021. On-farm

9 million
- farmers reached
through advocacy
and outreach over the
three-year strategy
implementation period.



A joint visit to the rice scheme in Kwale County in March 2020 by a team from AATF, the Rice Promotion programme (RIPP) from the state department of Crop Development and Agricultural research, Afritec Seeds, Kwale County, KALRO Mtwapa and CaDPERP to identify issues farmers face in rice production.

participatory demonstration trials of PBR Cowpea were done in 28 local government areas in nine states in Nigeria. About 200 women participated in the demonstration trials,

representing a significant step forward towards mainstreaming gender equity in development initiatives in Nigeria. The yield data of the demonstration trials showed that PBR Cowpea

outperformed varieties currently being planted by farmer. On average, 100% yield increase was observed in the trials with some locations having a threefold yield increase.

Table 2: Summary of product evaluation activities during the year

Products/crops	AATF project	Country	Performance evaluation	Number of varieties
Maize	TELA	Kenya,	NPTs	6
Soybean, groundnut, beans and tomato	Seeds2B	Uganda	NPTs	73
Soybean, groundnut, pigeon pea, cowpea and tomato		Malawi	MLTs	94
Soybean		Zimbabwe	MLTs	30
Tomato, pepper and onion		Ghana	MLTs	67
Cowpea	PBR Cowpea	Nigeria	NPTs	2
Rice	Hybrid Rice	Tanzania		11
		Kenya		6

Development of a robust product pipeline

The first PBR Cowpea product containing the Cry 1 Ab gene had been successfully released in Nigeria. Introgression of Cry 1 Ab gene into other farmers preferred varieties to meet the demand of other agro-ecological zones in Nigeria and Ghana is ongoing. The efficacy trials for the second transgene Cry 2 Ab involving two events 105B (lead) and 245F (backup) were conducted in Nigeria and Ghana and data generated from these trials will be used to prepare the regulatory dossier for environmental

release of Cry 2 Ab gene in these countries. For sustainable use of the product, development of the next generation PBR Cowpea with the two genes (Cry 1 Ab and Cry 2 Ab) stacked into a single variety (PBRCowpea-Extra) is ongoing in Nigeria and Ghana pending the deregulation of Cry 2 Ab gene. In Ghana, the regulatory dossier for the Cry 1 Ab was submitted to National Biosafety Agency (NBA).

For moderate drought management, Nigeria identified six DroughtTEGO® maize hybrids

that yielded 17%– 33% higher than the best check. Trials have been repeated on-farm across eight sites and on-station across ten sites to identify consistent best TEGO® hybrids to be presented for commercialisation approval. Further, preliminary results of the first TELA CFTs on stacked drought tolerance (DT; MON87460; and insect protection (Bt; MON89034) traits planted in March 2020 in Zaria, Nigeria showed 17% yield advantage of TELA (Bt) over (non-Bt) genotypes.



Regulatory multilocation agronomic CFTS of PBR cowpea in Nigeria



The NEWEST Rice Project successfully concluded the first season of regulatory trials for the NUE lead event (NU-12) in Nigeria and Uganda. In 2020, the project commenced the second season regulatory trial. The aim of both trials is to demonstrate efficacy, agronomic performance and compositional equivalence which is required for dossier

preparation and application for environmental release of NUE-12 in Nigeria and Ghana thereafter.

The Bacterial Wilt (BW) Potato Project that is developing a potato with enhanced resistance against bacterial wilt disease successfully completed gene expression analysis of *pflp* events

and conducted bioassays to assess delayed wilting symptoms of tolerance for bacterial wilt.

The introduction of the *pflp* gene in potato has increased the delay in BW disease symptoms and reduced the quantity of the pathogen in the next generation of plants grown from tubers of asymptomatic plants.

Impressive mechanisation and digital agriculture operations

Scaling-up mechanisation services and promoting digital agricultural solutions to improve smallholder farming experience and output gained momentum during the year with a total of 168,217 new farmers either benefiting from mechanisation or exposed through AATF's outreach on the value of mechanisation to agricultural productivity.

A key contributor in meeting farmers' growing interest in mechanisation is Agridrive Ltd, an AATF social enterprise that is commercialising mechanisation and digital agriculture in Nigeria. After only two years of operation, Agridrive Ltd continues to post



Farmers participating in a field day in a cassava farm in Nigeria

successes through growth and expansion of its service provision in mechanisation.

Agdrive expanded its customer base to include two contracts to mechanise a 2,000ha farms in Edo State in Nigeria that will include supply of all the inputs (stems, fertilisers and herbicides) and responsibility for management of the farm until harvest. By the end of 2020, Agridrive Ltd had ploughed, harrowed, planted and applied herbicide on 750ha.

Agdrive Ltd also expanded its geographic coverage to other parts of northern Nigeria to include Plateau and Bauchi states adding to its current operational states of Kaduna, Kano, Jigawa and Adamawa. The main activities in the north are principally targeted at exploring mechanisation activities to boost feed and fodder crops to enhance animal nutrition for improved dairy production.

The company played a facilitative role in availing high nutrient fodder crop species (*Bracharia* sp., maize, lablab, and sorghum varieties) for production of feed for the dairy industry in Nigeria through partnership with Sahel under the Advanced Local Dairy Development in Nigeria (ALDDN) initiative. These crops were planted on 750ha, which was 50% above the 2020 target of 500ha. The maize and sorghum hectareage yielded about 10MT/ha in those fields which were well maintained by Agridrive Ltd.

The social enterprise is further integrating digital tools and

168,217
- new farmers
benefiting from
mechanisation services
by AATF.

drones in its operations to improve efficiency in decision making and planning, and in fast-tracking information sharing to create and enhance viable agribusiness opportunities and success.

The Agridrive digital application, the *Agdrive App*, was instrumental in aiding farmers' access to mechanisation services. The app is now being utilised by farmers to book and pay for mechanisation services. The tool has strengthened capacity in efficient management of business operations by service providers for its clients. Both the *Agdrive App* and a second App (owned by another partner) known as *Hello Tractor*, provide remote tracking of farm assets, preventing fraud and machine misuse.

To advance sustainable agriculture using digital tools for crop monitoring, data collection and other agronomical aspects, AATF acquired-drone technology from Kurai for deployment to collect field data from farmer fields, and to boost integration of data sciences in farmer operations as well as guide technical backstopping offered by AATF to farmers.

The Cassava Mechanisation and Agroprocessing Project

(CAMAP), also expanded service provision to the private sector in Nigeria, Zambia and Uganda. The expansion led to a new partnership with the Government of Uganda, through the National Agricultural Advisory Services (NAADS), to source and utilise cassava stems/planting materials of improved varieties from CAMAP to increase productivity of cassava and stimulate commercialisation of this crop in the country.

A study of CAMAP commissioned by AATF to evaluate impact of the project after eight years of operations in Nigeria, Uganda and Zambia, indicated that the project had not only achieved most of its objectives, but it had also increased farmer productivity from 7-11t/ha of cassava to 23-33t/ha. The report also indicated that the Project had reduced drudgery, increased efficiency and timeliness of operations, empowered women and strengthened its sustainability plan.

For 2020, a total of 15,551 mechanisation operations were successfully executed in Nigeria, Zambia and Uganda, well above the 14,500 operations targeted for the year, representing a performance rating of 107%.

2,761,348
- farmers adopting AATF
generated technologies
over the 3-year strategy
implementation period.

Ensuring smallholder farmers access new technologies

As a technology delivery organisation, AATF is driven by the passion of reaching farmers with life changing technologies that have been proven to enhance productivity and improve livelihoods. In the Strategic

1,600,385

- farmers who took up technologies generated through AATF projects in 2020.

Framework 2018–2022, AATF commits to reach 16 million farmers by end of 2022. Three years into implementation of the strategy, AATF has reached 12.8 million beneficiaries with technologies and information which is 80.5% of the five-year target of 16 million. On technology adoption, a total of 1,600,385 farmers took up technologies generated through AATF projects bringing the cumulative number over the three-year strategy implementation period to 2,761,348, which is 69 per cent of the 4 million five-year target.

Looking forward

In the coming year, AATF will accelerate product development while leveraging on its complementary



Dr. Muyideen Oyekunle(second left), TELA Maize Project Farm Manager posing for a photo with farm assistants during TELA Maize harvest in Nigeria in 2020



Farmers engaging in a participatory variety selection for rice in Mombo, Tanzania, August 2020

technologies such as mechanisation and digital tools. The organisation will continue promoting good agricultural and technology practices and stewardship

services to reach more farmers with its technologies for enhanced adoption and utilisation of novel products in a sustainable way.



Strategic Objective 2

Accelerating commercialisation of agricultural technologies for improved farmer livelihoods



Mr. Stephen Melchizedek, a farmer from Butere Sub-county in Kenya, who improved his household income by growing high-yielding climate-smart maize varieties

The sustainability of AATF investment in Africa towards food and nutrition security for improvement of farmer livelihoods on the continent is largely driven and dependent on accelerating product delivery and commercialisation of technologies. In furtherance of this strategic objective, AATF has intensified collaboration with diverse partners, including research organisations, universities, governments, development organisations, farmer groups and the private sector across the value chain in building an innovative ecosystem that supports transformative change in technology delivery and commercialisation of associated products. AATF is exploring system-driven approaches to create and develop pathways and networks that can sustainably strengthen delivery outreach to users and beneficiaries of its technologies. Activities have been geared towards improving functional seed system, input-demand system, distribution system, and market system in target countries to support processes critical to the attainment of this objective.

The coordination and organisation of agro-dealer farmer networks and other key actors in the value chain have been a key activity undertaken by AATF towards the establishment and development of a robust technology delivery system across AATF projects and initiatives. The multifaceted needs of smallholder farmers and roles in the food production

system often demand that special attention is paid to strengthening their linkage with

111,470
– farmers linked to off-takers

delivery systems in stimulating significant improvement in their livelihoods. This approach underlies AATF's theory of change and is crucial to the attainment of transformative changes at farmer household levels and by implication rural and national development of African countries south of the Sahara in line with Agenda 2063.

Fostering strategic engagements for an effective product delivery system

AATF was nominated in 2020 by the African Union Commission (AUC) to lead the Working Group on Research, Variety Development and Seed Production (WG-RVDSP) and to be a member of the Steering Team of its African Seed and Biotech

Platform (ASBP). With this great honour, AATF will avail its expertise, experience, and learnings in the new partnership to coordinate WG-RVDSP towards the establishment of functionally efficient seed systems and facilitation of improved access and application

of biotechnologies that support resilient food systems and agriculture in Africa. AATF likewise expanded its partnership recently with the AUDA-NEPAD, African Green Revolution Forum (AGRF) and Cornell Alliance for Science (AfS) through joint activities.

Strengthening capacity for quality seed production and dissemination

A substantial part of AATF technologies is disseminated through seeds. AATF engaged 131 seed companies across Africa on seed production and overall business management through licensing and contracting. These include 83 in East Africa (Kenya 19, Uganda 12, Tanzania 17, Ethiopia 25, Rwanda 10); 39 in Southern Africa (Malawi 6,

Zambia 9, Mozambique 3, South Africa 10, Zimbabwe 11), 6 in West Africa (Burkina Faso 1, Ghana 2, Nigeria 3) and 3 in Cameroon in Central Africa.

Training on maize seed production and stewardship was undertaken for 31 of the seed companies (5 in Kenya for TEGO, 2 in Tanzania for TEGO, 1 in Uganda for TEGO,

131
– seed companies engaged across Africa on seed production and overall business management through licensing and contracting



Seeing is believing visit by seed companies during the first TELA Maize CFT harvest in Nigeria in 2020

1 in Mozambique for TEGO, 4 in Zambia for TEGO, and 2 in South Africa for TELA) to boost scale up and support technology delivery to farmers.

The Pod Borer Resistant (PBR) Cowpea Project supported capacity development efforts for seed companies especially in seed multiplication towards the full commercialisation of PBR Cowpea product (SAMPEA-20T) released in Nigeria. In this regard, AATF established a partnership with the Institute of Agricultural Research (IAR) Seed Unit to accelerate the production of foundation seed for the transgenic variety. Further,

10 registered seed companies in Nigeria were evaluated to determine their capability to produce their own foundation seeds following which five companies were recommended for licensing to produce foundation and certified seed for production of PBR Cowpea seeds. To kick start the SAMPEA-20T commercialisation process, the PBR Cowpea Project produced 1.1 tonnes of foundation seed to prime certified seed production in 2021. In addition, 3.0 tonnes of certified seed were produced in 2020 for product launch and pilot sales for planting by farmers in 2021.

Given the critical role that extension services play in agriculture transfer, the capacity of 1,848 extension agents (TELA 4, CAMAP 25, PBR Cowpea 1813, Seeds2B 6) was strengthened to support technology dissemination delivery networks.

The PBR Cowpea Project trained 1,813 extension agents across different regions of Nigeria on the safety of genetically modified organism (GMO) crops, stewardship functions to support commercialisation of PBR Cowpea in the country, good agricultural practices (GAP), and integrated pest management (IPM) to improve awareness and education on GM technology.

31
– private seed companies trained in six countries on seed production and stewardship



Traits Pipeline and Testing team members on seed production research field learning visit in Groblersdal, Republic of South Africa on 18th Feb 2020



PBR Cowpea Project forum with extension workers drawn from different States in Nigeria in 2020

Contributing to production of quality certified seed

In 2020, AATF and partner seed companies produced 696.9 tonnes of certified seed (591mt of TEGO, 100mt of StrigaAway and 5.9mt of TELA), potentially sufficient to meet the average planting needs of 69,690 smallholder farmers. The QualiBasic Seed Company (QBS) produced 335.7kg of DroughtTEGO pre-commercial seed to support field demo establishment for promotion and uptake of top performing hybrids by farmers,

and licensing purposes as start-up seeds needed by licensed seed companies to commence production. QBS sold 84.9mt of foundation seed to seed companies for certified seed production for sale to farmers.

With a view to mitigating the devastating effects of fall armyworm (FAW) to maize production, Fortenza Duo (FD) a pesticide, efficacious as seed treatment against the pest, was accessed by AATF from

Syngenta through the African Development Bank (AfDB) 'Feed Africa' program (Technologies for African Agricultural Transformation – TAAT). Under the TAAT Maize Compact led by AATF, 20,830 litres of FD was used to treat 3,591mt of climate smart seeds in both Zambia and Zimbabwe. The treated seeds were distributed to over 359,100 farmers in the two countries through government inputs programs.



Mr. George Njihia, operations manager at Faida Seeds based in Njoro, Nakuru County, Kenya. Partnerships with seed companies resulted in effective hybrid seed scale out in TAAT countries, Kenya



Mr. Samuel Agwenyi, Project Officer, TAAT Maize Compact during on-farm assessment of FD seed performance in Zambia, in January 2020

Accelerating technology uptake through farm demonstrations, awareness and education

To expedite technology uptake by farmers, AATF distributed seed packs to farmers, established demos to improve awareness, showcased superior performance of AATF products, and enhanced capacity for SMEs and women entrepreneurs in seed and crop production.

AATF and partner seed companies conducted product demonstrations and carried out field days to showcase the performance of several maize hybrids. The partnerships established 1,072 demos in four countries (849 in Kenya, 28 in Nigeria, 145 in Tanzania, and 50 in Uganda) and carried out 47 field days (31 in Kenya, 3 in Tanzania and 13 in Uganda) which attracted 3,076 farmers in total. Due to movement restrictions because of the COVID-19 pandemic, only a limited number of farmers could be permitted to attend the field days in adherence to government social distancing directives.

In Nigeria, the PBR Cowpea Project partnered with the National Agricultural Extension and Research Liaison Services (NAERLS) for training of 5,920 farmers by the State Agricultural Development Projects (ADPs) in various states of Nigeria. The trainings included proper establishment of farmer demonstration plots which is key to promoting adoption of new products. The project used 28 on-farm demonstration trials



Distribution of seed packs to farmers in Kakamega County, Kenya

of Sampea-20T it established in nine states in Nigeria for the training of 12,000 farmers on the necessary standard operating protocols (SoPs).

The TAAT Maize Compact established 226 demonstration plots in target countries to promote 57 climate smart maize varieties. Other TAAT Maize technologies and good agricultural practices (GAP) promoted along with climate smart maize include micronutrients, fall armyworm (FAW) management technologies (e.g. FD), and use of optimal planting density. These were done in partnership with seed companies, farmer groups and national agricultural research systems (NARS). In addition, 25 field days were conducted and used to train 130 farmers on GAP and expose them to new climate smart maize hybrids.

The Compact also distributed 20,008 small pack seeds to over 20,000 farmers (8,118 in Kenya, 10,480 in Uganda and 1,410 in Tanzania). In Kenya, TAAT Maize distributed 22 tonnes of certified seed of climate smart maize hybrids to 2,200 smallholder farmers as a COVID-19 pandemic get-back-better recovery intervention.

The TELA Project partners in South Africa established 75 field demonstration plots to promote the product and showcase its performance for stemborer and FAW tolerance. Imbewu Seeds (an SME engaged in the project), conducted an information day for farmers on TELA product with 43 participants in attendance. Additional information days could not be conducted due to the COVID-19 lockdown measures put in place by the South African Government.



Dismus Okello and Alice Awuor in a TAAT Maize demonstration field in Siaya County, Kenya

Under the Seeds2B Project, several advanced yield and promotional trials were conducted through a participatory variety selection process alongside farmer preferred varieties of tomato, groundnut and beans to identify the best varieties in Malawi, Uganda and Ghana. Seed companies were engaged in Malawi and Uganda to multiply seeds of varieties already released under the project as well as those nearing release process to enhance rapid access and availability by farmers.

In Malawi, the project conducted three field days for groundnuts, and two field days for cowpea that attracted 146 farmers and another four field days for pigeon pea that attracted 293 participants. To stimulate the adoption of two newly released Common Bean varieties (NAROBAN 6 and 7) and three others previously released varieties (NAROBAN 1, 2, 3), the project held promotional

trials in collaboration with Ortis Garden Seeds, Equator Seeds, CEDO Seeds, NARO Holdings Ltd (NHL) and selected local seed businesses. As a result, 16 marketing trials for the five varieties were planted in 2020 and were backed with nine focus group meetings involving the private sector.

The CAMAP Project contributed to efforts by the Government of Uganda to disseminate

improved planting materials to farmers to promote increased production of the crop. AATF provided cassava planting materials through CAMAP for demonstration fields that were delivered to the National Agriculture Advisory Services (NAADS) for distribution to farmers. The stems were worth UGX27,000,000 (approximately \$7,339). The stems were sold as part of AATF's strategy to fully commercialise agriculture for the rapid development of this sector. The earnings made were ploughed back into CAMAP activities for the benefit of the country.

Other innovative extension and awareness methods that were explored in compliance with the restrictions caused by the pandemic included conducting live virtual digital field days (as was carried out by Seed Co seed company in Kenya); field days through 17 radio talk shows; 3 television talk shows; 20 short message service sessions and distribution of 2,000 product information fliers.



Participants in the TELA Maize demonstrations field in Kibos, Kisumu County during seed companies visit to the site in November 2020

Linking farmers to off-takers



Milled grains packaged for the market; Processor linked to TAAT Maize farmers

By the end of 2020, AATF had recorded a 202% increase in market linkages between farmers and off-takers with 111,470 farmers (CAMAP / Agridrive 20,000, TAAT Maize 91,470) in total linked to off-takers in Kenya and Nigeria, up from 70,008 farmers in

2019. AATF and its partners have successfully engaged 3,116 value chain actors including seed companies, agro-dealers, seed producers, grain traders, and processors to help build a durable market system supportive of commercial agricultural development in Africa.

Looking forward

Looking ahead, AATF will foster closer working relationships with relevant stakeholders in the value chain and explore new business models for licensing, production, and distribution to ensure quicker and faster commercialisation of the technologies.

202%

– increase in number of farmers linked to off-takers in 2020

3,116

– value chain actors that AATF worked with



Strategic Objective 3

Create an enabling environment for increased uptake and use of agricultural technologies



Dr. Denis Kyetere, Executive Director AATF, led a team from AATF for an engagement with the late Dr. Chris Kirubi, a private sector champion in Kenya in October 2020

State capability to create an enabling environment is critical in influencing agricultural transformation through technology development and adoption. Through our policy and advocacy programs, AATF is committed to strengthening state and government capability in improving regulatory and institutional systems that are creating desirable environment for adoption of modern agricultural technologies essential for improved food and nutrition security. This is accomplished through activities implemented by AATF and partners described in detail below.

Harmonisation of regulation for pesticides in East Africa Community (EAC)

In partnership with the United States Department of Agriculture (USDA-FAS), AATF is focused on providing technical assistance in developing guidelines for registration of bio-pesticides in Sub-Saharan Africa (SSA). This effort largely seeks to increase availability of pest control products for addressing the outbreak and rapid spread of the fall armyworm (FAW), an invasive insect pest that threatens the livelihoods, resilience, and nutritional status of 300 million farmers in SSA. During 2020, AATF continued tracking domestication and implementation of Regionally Harmonised Guidelines for Testing and Registration of Pesticides in East African Community (EAC) region. Tracking events revealed that all EAC partner states, except South Sudan, have developed a

roadmap of activities towards domestication of the harmonised pesticides guidelines.

In furtherance of the domestication of the EAC harmonised guidelines on pesticide registration, a comprehensive process of revising national regulations on pesticide registration has been concluded in an inclusive and participatory manner involving all concerned key stakeholders in all countries in the EAC.

AATF and the EAC Secretariat collaborated in drafting additional regional guidelines to improve approval process for pesticides (conventional chemicals, biopesticides, and biocontrol inputs) in EAC partner states in the event of agricultural pest emergency situations. The

need for additional guidelines arose because transboundary movement of agricultural pests and other outbreaks of existing pests are occurring with increased frequency due to several interacting forces, such as globalisation, expansion and intensification of agricultural production, emergence of pest resistance to registered pest control products, and climate change.

The EAC Secretariat and AATF jointly drafted guidelines on 'Use of Pesticides during Emergencies' in June 2020 that now await technical review and finalisation from the EAC Technical Working Group on Registration of Pesticides before presentation for consideration and adoption by the EAC Council of Ministers in November 2020.

Accelerating implementation of harmonised seed regulations in RECs

Notable progress was made under the Technologies for African Agricultural Transformation (TAAT) Policy Compact regarding the implementation of Common Market for Eastern and

Southern Africa (COMESA) Regionally Harmonised Seed Regulation with Egypt becoming the eighth country to fully domesticate this instrument. In the Economic Community of West African States (ECOWAS)

region, the Policy Compact activities progressed well with finalisation of the Regional Quarantine Pest List for West Africa as well as development of the Executive Regulation for Seed Import/Export for the

region. These two documents are presently awaiting validation by the National Plant Protection Organisations (NPPOs) of the

partner states before going through approval processes at ECOWAS. Once adopted, these two documents will play a critical

role in facilitating regional seed movement for the West Africa region.

Supporting country specific seed policy implementation

AATF, through the TAAT Policy Enabler Compact, has continued supporting policy assessments governing the seed sub-sector coupled with advocacy for desirable industry reforms at country level. For instance, following passage of the Plant Breeders Act in Malawi in 2019, the Policy Enabler in collaboration with AATF Seeds2B Project engaged policy makers and stakeholders in efforts geared to fast tracking drafting of plant variety protection regulations. A Consultative meeting supported by AATF resulted in stakeholder review of the draft regulations ahead of the planned adoption



H.E Mr Sani Redi (3rd from left) hosted by the EIAR DG (4th from left) at the seeing is believing visit at the Mekhasa CFT site held on March 3, 2020

and implementation in 2021 going forward. The detailed regulations will be instrumental

in the implementation and enforcement of the Plant Breeders Law.

Facilitating access to quality seeds through accreditation of agro-input dealers

Past activities at AATF by TAAT Policy Enabler project had resulted in development of guidelines and protocols for accreditation of seed suppliers and agro-dealers in Tanzania and Nigeria as a bold step towards mitigating against proliferation of counterfeit agro-inputs. In 2020, TAAT Policy sustained efforts to support the process of accreditation of agro-input dealers. In Mozambique,

a survey on the current status of accreditation was conducted to gather basic information needed for the development of a catalogue of accredited agro-input dealers. This data, which has been analysed, will be instrumental in finalising an inventory of accredited input suppliers in Mozambique when COVID-19 travel restrictions are lifted.



Accreditation of Agro-input dealers to stem out fake inputs in Nigeria, Tanzania and Mozambique

Policy assessment and support for agricultural value chains

Driven by the need to accelerate the process of identifying policy gaps along agricultural value chains in selected regional member countries, TAAT Policy Compact finalised an assessment of the rice value chain in 12 African countries with special focus on (a) assessment of trends for key parameters; (b) assessment of relative contribution/impact of previous strategies in the rice sub-sector on these parameters; and (c) identification of policy related challenges and

proposition of policy instruments to close the gaps.

The assessment noted that while strategies being implemented under the Coalition for African Rice Development (CARD) to facilitate reforms in the rice sector have achieved substantial milestones, none of the African countries have been able to achieve rice self-sufficiency. Some of the policy related challenges that were identified include weak private

sector involvement in the rice sector, unfavourable import and export regulations, insufficient political will leading to low investment and staffing in the rice sub-sector, and lack of/poor implementation of the National Rice Development Strategies (NRDS). The report and issues identified therein will be taken through the process of stakeholder validation before being escalated to the policy decision making organs for redress.

Policy advocacy and influencing for agriculture biotechnology enabling environment

Increasing awareness and closing the information gap

Through OFAB, AATF increased its efforts to raise awareness on agricultural biotechnology and close the information gap, which is usually taken advantage of by anti-GMO activists to disseminate misinformation and propaganda.

OFAB Chapters facilitated information, education, and public engagement to advocate for an enabling environment for agricultural biotechnology. OFAB held 42 virtual (due to COVID-19 restrictions) meetings

in the year. OFAB also facilitated the publication of opinion pieces where key topics on agricultural biotechnology were addressed. In Ethiopia, eight opinion articles were produced and published in complementation to various radio shows held on agriculture biotechnology in local languages. The proactive engagement of the public, through education, media and multi-stakeholder meetings helped to address propaganda, misconceptions, and misinformation perpetrated by anti-technology activists. OFAB Chapters continued to strategically position themselves in different countries as important centres of information on matters of agricultural biotechnology.



A group of editors and a team from OFAB-Kenya during a visit to the National Performance Trial for TELA maize in Kibos, Kisumu County

High level policy engagement

OFAB engaged governments and strategic partners to enhance collaboration and advocate for an improved enabling environment for agricultural biotechnology in different countries. OFAB Chapter in Nigeria held a joint meeting with the Federal Government Ministry of Agriculture and Rural Development on 'Technological interventions in mitigating the impacts of COVID-19 on Nigeria's food security'. During the meeting OFAB advocated for agricultural biotechnology as an innovation that can help deal with challenging times brought by COVID-19. In April 2020, OFAB Kenya Chapter analysed the Kenyan National Biosafety Framework especially the Environmental Management and Coordination Act (EMCA) and its overlap with National

Environmental Management Authority (NEMA) which subjects experiments to double assessments. Through the analysis the Chapter developed a policy brief that stakeholders including OFAB will use in engagements to facilitate continued engagement for an improvement in the enabling environment in Kenya. OFAB is advocating for a single line of assessment for all GMO experiment applications in Kenya. OFAB Kenya has presented the findings of the analysis to various stakeholders including Parliamentary Committee on Agriculture, farmers, and the media. OFAB Kenya held a science café meeting on 'African Growth and Opportunity Act (AGOA), COVID-19 and cotton production: Opportunities for value chain players, which was attended by Cabinet Secretary for Ministry of Industrialisation,

Trade and Enterprise Development, Hon Betty Maina. The café brought together 121 participants including journalists, scientists, academia, county communication officers, private sector, and members of the general public. Hon Betty Maina provided insights on the implications of Free-Trade Agreement negotiations between Kenya and the US, and how commercialisation of Bt cotton will impact textile and apparel trade under AGOA.

Through its collaboration with AUDA-NEPAD, AATF organised a joint meeting to explore how to elicit political will to advance agricultural biotechnology in Africa. The meeting developed a joint work plan and a call to action in support of helping to progress biotechnology development on the continent.

Celebrating professional media reporting

AATF continued to champion credible, fact- and science-based reporting on agricultural biotechnology through its Africa Annual Media Awards. The virtual 4th continental gala followed on the successful national awards held in OFAB chapters of Kenya, Uganda, Ethiopia, Burkina Faso, Ghana, and Nigeria. The award recognises and rewards excellence in reporting on agricultural biotechnology and contributes to a positive policy environment and favourable public perception. The overall



Dr. Edgar Traore, the Coordinator OFAB-Burkina Faso Chapter pose with the winners in November 2020

42

- virtual public engagement meetings by OFAB in 2020

Africa winner was Leopold Obi from Kenya for a story on cotton farmers who were waiting for the government to lift the ban on GMOs. He was also the winner for the print category. The TV category winner was Pretty Ngozi Onejiaku from Nigeria while the radio category winner was Sarah Natoolo from Uganda. The print media runner-up winner was Vincent Ayaka from Nigeria. William Lusige, from Kenya, was the first runner up TV category. Rabi Hope Momoh from Nigeria was the first runner-up radio category.

OFAB supported media capacity strengthening efforts in the countries to enhance evidence-based and science-focussed reporting through trainings targeting journalists, editors, and scientists. Across OFAB Chapters, 48 trainings and capacity strengthening sessions were held targeting media houses. Due to COVID-19 related restrictions, a number of the



Mr. Leopold Obi, Nation Media Group Reporter, the overall winner 2020 OFAB Media Awards



Dr. Denis Kyetere, Executive Director AATF, giving remarks during the virtual OFAB Media Awards in December 2020

48

- trainings for journalists and editors across Africa on effective biotech reporting.

trainings were held virtually. The OFAB Kenya Chapter trained 20 radio journalists from Western Kenya on 23 April 2020 on factual and science-based reporting on

agricultural biotechnology. In Nigeria, 50 participants attended a training on the role of editors in communicating biotechnology in Nigeria held on 7 August 2020 in Lagos State.



Dr. Rose Gidado, OFAB-Nigeria Coordinator in a Bt cotton farm in Nigeria

50
– participants from
Nigeria attending
a training on the
role of editors in
communicating
biotechnology

Looking forward

While COVID-19 pandemic affected the implementation of policy advocacy and regulatory related activities, some progress was made through virtual platforms. This scenario will continue to a good part of 2021. With progress being made

on technology development, focus will shift to supporting commercialisation processes advocating for facilitative regulatory management systems such as removal of restrictions on biotech utilisation in key countries and enhancing high level collaborations and discussions.



An icon in agriculture: Dr Denis Tumwesigye Kyetere

Our success comes from the support and collaboration of many partners...

...were the words of the founders of AATF in 2003 during its conceptualisation and formation.

In addition to the contribution of partners, the success recorded thus far by AATF has been due to far sighted vision and astute leadership at the institution. Attributes

Dr Denis Kyetere, or just Denis as he prefers to be called, joined the AATF in 2012. He found the fledgling institution in dire need to build trust and confidence with its partners and internal

stakeholders following turbulent leadership challenges. At the time, AATF needed to maintain its gains and realise growth.

With a steady hand, always on the ready, Denis lifted the hearts and spirits of all he worked with at AATF. With clarity and compassion in equal proportions, he wove around him an endearing web of enduring friendships and partnerships that would anchor the organisation on a steady course during the 10 years of his leadership at AATF.

Magnanimous to the extreme, Denis has a comportment that exudes absolute humility. The man who prefers to be addressed simply by his first name created sound harmony among staff

that has helped build synergy within and across projects and departments, creating room for focus on the organisation's bigger picture – serving smallholder farmer interests.

A scientist of no mean repute, Denis commanded respect among the organisation's scientists and experts as he constantly nudged them to evaluate their work against the ever-increasing needs of smallholder farmers on the African continent.

His leadership and management style centered on building teams and teamwork, encouraging self-evaluation and ownership of results while building confidence and mutual respect among AATF staff and partners.

Denis joined AATF with a rich dossier of impressive leadership credentials. He had served on the Board of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA), chaired the Board of the Forum for Agricultural Research in Africa (FARA) for two terms and led the National Agricultural Research Organization (NARO) in Uganda as Director General.

As the Executive Director of the AATF, Denis knew only too well that rural communities thrive when smallholder farmers prosper. Under his leadership, AATF has worked with partners to help farmers in Sub-Saharan Africa access practical technology solutions that have increased yields by between 100 and 300 per cent across several crops, thus having a direct impact on livelihoods.

His passion for agriculture is rooted in a childhood spent tending livestock and crops on his family's homestead in rural Uganda, and this has contributed to his drive to see an Africa with greater agricultural innovations.

Under his watch, AATF was able to demonstrate how progress is possible when private sector, governments, NGOs, researchers, and farmers work together to develop technologies that address specific production challenges. He led AATF and its partners in collaborations aimed at making that needed difference such as in developing maize (corn) varieties that can withstand the dual impacts of drought and insect pest including attacks by the destructive fall

armyworm which can ruin an entire field in just a few days.

Denis has a special interest in maize because it is an essential food and cash crop for Africa's smallholder farmers. In fact, his PhD research at Ohio State University, USA, identified and mapped the first gene which confers tolerance to the devastating maize streak virus disease (MSVD). He sees real value in using technology to improve staple crops.

During his leadership, AATF delivered on its promise to produce a cowpea crop that is resistant to the pod borer *Maruca Vitrata* that had hitherto devastated farmers' crops. He led the organisation in coordinating an efficient and effective international partnership that culminated in the historic release of the first transgenic food crop variety in Nigeria and Africa other than South Africa. Commercialised as SAMPEA 20-T in 2019, the pod borer resistant cowpea is a pioneer crop that is already popular among farmers who have tried it.

is that 'biotechnology is an approach that can complement conventional crop improvement methods, address huge food deficits and reduce poverty in Africa. I am proud that AATF is contributing to wealth creation and the health of smallholder farmers. Biotechnology is one tool in the farmers' toolbox that contributes to food production with precision and speed.'

As a reward for his dedication, commitment and untiring efforts, Denis was recently named the Biotechnology Food Hero for 2020 by CropLife International.

Innovation and initiating new ways of doing things was not strange to Denis. During his tenure, AATF established two new entities including QualiBasic Seed Company, often referred to as QBS, and Agridrive. QBS is the first in Africa to focus wholly on availing foundation seed for seed companies as contribution towards certified seed availability, while Agridrive is a social enterprise that seeks to grow farmer interest for



Dr. Denis T. Kyetere (6th from right on face cap) with members of AATF Board of Trustees during a field mission.



Dr. Denis T. Kyetere with Cassava farmers in a previous field visit in Nigeria

commercial mechanisation for sustainable agriculture.

Denis also helmed AATF through the realization of the commercial release of the first hybrid rice varieties indigenous to Africa with yields surpassing other varieties at over 10 tonnes per hectare and the seeds are already being produced for farmers' use.

Another key achievement during his tenure is building the Cassava Mechanisation Project (CAMAP) that turned out clear differences at the farmer level – increasing yields by over 250%, incomes by over 180%, and saving time by over 90%. The success story of CAMAP in Nigeria saw the birth of Agridrive Ltd, formed to continue with the mechanisation service provision on a sustainable and commercial business model.

When the success story of biotechnology and indeed technology transfer in Africa is written, Denis' name will stand out prominently.

Although his term ends at a time when the world faces a serious challenge brought about by the COVID-19 pandemic that affected the operations of many organisations, through his leadership, AATF and partners have surmounted the challenges by delivering technologies to farmers.

He leaves a diverse portfolio of projects at AATF, well-resourced to deliver their mandates, including those addressing challenges in maize – (TELA maize Project and TAAT Maize



Compact), rice (Hybrid Rice for Africa and Nitrogen Efficient, Water Efficient and Salt Tolerant Rice – NEWEST), an enabling environment for technology (OFAB, TAAT Policy), cow pea (PBR Cowpea), improved seeds (Seeds2B), and mechanisation (CAMAP, AgriDrive), among others.

Under his leadership, AATF also established wide networks with like-minded partners, including various governments, the African Union Commission (AUC), African Union Development Agency (AUDA-NEPAD), Alliance for a Green Revolution in Africa (AGRA), African Green Revolution Forum (AGRF), the Consultative Group for International Agricultural Research (CGIAR), the Common Market for Eastern and Southern Africa (COMESA), the Forum for Agricultural Research in Africa (FARA), the Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), West and Central African Council for Agricultural Research and Development (CORAF), Coalition for African Rice Development

(CARD), agricultural research organisations, local and international private sector, farmer organisations and community based organisations, faith based organisations, academia and many development partners.

Denis exits AATF at a time when he should be celebrating some of the gains he helped to champion. Under his watch, the organization has made steady progress towards reaching its goal of 16 million farmers as proposed in its current strategy 2018-2022.

Dr Ousmane Badiane, Chair of the AATF Board of Trustees, paid glowing tribute to Denis saying that his leadership had helped steer the organisation into a professional technology transfer outfit with a team of dedicated staff who are committed to getting agricultural innovations to farmers in the most efficient and effective manner.

'As Dr Kyetere retires, I wish to convey appreciation from the Board, staff and partners alike who recognise his commitment and undivided attention to leading AATF through some of the most challenging situations and into realisation of key strategic goals,' said Dr Badiane.

From AATF we say Kwaheri Denis, for you came, you improved and delivered when it mattered the most. You toiled in fidelity and humility – Walking the talk and not talking the walk!

The AATF fraternity wishes Denis all the best in his retirement.

Financial Report 2020

These AATF audited annual financial statements cover the period January 2020 to December 2020 and provide comparative data for the prior accounting period, 2019.

Funding overview

AATF main investors for the year 2020 were: Bill & Melinda Gates Foundation; United

Kingdom's Department for International Development; United States Agency for International Development; Syngenta Foundation for Sustainable Agriculture; United States Department of Agriculture (USDA); SNV Netherlands Development Organization; and African Development Bank through the International Institute of Tropical Agriculture

(IITA) and the government of Central African Republic (CAR).

AATF is grateful to all its investors for their continued support that ensures that its commitment towards assisting resource-constrained farmers to access affordable agricultural technology leading to improved livelihoods is achieved.

Statement of financial position as at 31 December 2020 (US\$)

	2020	2019
ASSETS		
Non-current assets		
Property, plant and equipment	338,014	163,240
Right-of-use assets	957,782	1,076,167
Intangible assets	-	2,892
Investments in subsidiaries	1,039,299	983,162
Loans to group companies	499,249	444,558
	2,834,344	2,670,019
Current assets		
Trade and other receivables	759,597	832,851
Contribution receivable	1,492,440	2,965,012
Cash and cash equivalent	17,153,247	14,350,731
	19,405,284	18,148,594
Total assets	22,239,628	20,818,613
EQUITY AND LIABILITIES		
Equity	9,998,214	8,635,288
Non-current liabilities		
Finance lease liabilities	970,551	1,054,146
Current liabilities		
Payables and accruals	1,366,660	1,233,138
Finance lease liabilities	83,596	74,187
Deferred income	307,054	137,754
Unexpended grants payable	9,513,553	9,684,100
	11,270,863	11,129,179
Total equity and liabilities	22,239,628	20,818,613

Statement of profit or loss and other comprehensive income for the year ended 31 December 2020: Abridged version (US\$)

	2020	2019
Income		
Grant income	14,051,274	18,411,537
Other income and gains	1,350,374	3,045,404
Deferred income	-	8,814
	15,401,648	21,465,755
Expenditure		
Project related expenses	11,509,466	15,624,120
Management and general expenses	2,529,256	3,136,055
	14,038,722	18,760,175
Net surplus for the period	1,362,926	2,705,580
Proportion of management and general expenses operating expenses	18.02%	16.72%
Percentage of project related expenses	81.98%	83.28%

Statement of cash flows: Abridged version (US\$)

	2020	2019
Net cash provided by operating activities	1,991,062	3,047,301
Net cash (used in) investing activities	(416,385)	(610,332)
Net cash provided by financing activities	1,227,839	1,434,200
Total cash and cash equivalents movement for the year	2,802,516	3,871,169
Cash and cash equivalents at the beginning of the year	14,350,731	10,479,562
Total cash and cash equivalents at end of the year	17,153,247	14,350,731

Financial status

The funding received in the year added to the retained income was adequate for the organisation's needs in the reporting period. All expenditures were fully covered leading to net surpluses of \$1,362,926 and \$2,705,580 in the current and the prior year, respectively. The decrease in surplus was largely due to the decline of unrestricted income by 46.05% and restricted income by 22.16% as compared to the prior year. Even though the net surplus decreased by 49.63%, the financial health of organisation is sound given the steady growth in its equity and reserves levels. AATF continued with its prudent management of unrestricted (core) funds and

enhanced project costing which ensured that all costs that are attributable to projects were duly allocated to restricted grants.

AATF revenue decreased by 28.25% from \$21,465,755 in the prior year to \$15,401,648 for the year ended 31 December 2020. This was majorly due to decreased activities during the year due to the COVID-19 pandemic as well as the reduction of DFID funding which came to an end during the third quarter of the year. AATF income recognition policy is based on matching principle, that is, income is recognised when spent hence decreased activities in restricted projects attracted decreased income. Organisation cash flows from operating activities decreased by

34.66% from \$3,047,301 in the prior year to \$1,991,062 for the year ended 31 December 2020. Cash flows from investing and financing activities remained marginally constant. Overall, the cash flow position of the organisation is very strong with cash and cash equivalents amounting to \$17,153,247, up from \$14,350,731 in the prior year.

Looking forward

The future outlook of AATF is favourable with its main traditional donors continuing to support the organisation and there are indications and opportunities of getting new funding from both the existing and potential donors.

AATF BOT Members - 2020



Ousmane Badiane
Chair, Board Of Trustees



Jeremy T. Ouedraogo
Member, Board Of Trustees



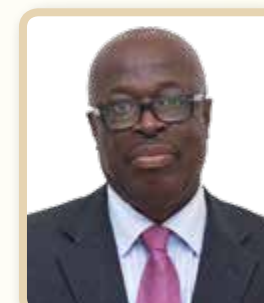
Dame Anne Glover
Member, Board Of Trustees



Ingrid Wünnig Tschol
Member, Board Of Trustees



Denis Tumwesigye Kyetere
Executive Director



George Agyemang Sarpong
Member, Board Of Trustees



Sylvia Horemans
Member, Board Of Trustees



Jessica Francisca Colaço
Member, Board Of Trustees



Jennifer Ann Thomson
Board Chair Emeritus



Noble Banadda (the late)
Member, Board Of Trustees



Dahlia Garwe
Member, Board Of Trustees



Shey R. Tata
Member, Board Of Trustees



Hamadi Iddi Boga
Member, Board Of Trustees

AATF Staff - 2020

1. **Abed Kagundu** - Program Officer Regulatory Affairs
2. **Alex Abutu** - COmmunications Officer - West and Central Africa
3. **Alex Kariuki** - Information Communication Officer
4. **Alhaji Tejan-Cole** - Director Legal and Affairs
5. **Amos Kimebur** - Head of Finance
6. **Fatuma Wario** - Admin Assistant/ Events Coordinator
7. **Caleb Obunyali** - Program Officer - TELA
8. **Caroline Thande** - Admin Assistant - TELA
9. **Cecelia Limera** - Program Officer - PDC
10. **Daniel Willy** - Program Officer - TAAT Policy
11. **David Tarus** - Seeds2B Coordinator
12. **Denis Olumeh** - Project Assistant
13. **Denis T. Kyetere** - Executive Director
14. **Edith Kouko** - Project Officer - RICE
15. **Emmanuel Okogbenin** - Director Program Development & Commercialization
16. **Francis Nang'ayo** - Senior Manager - Regulatory Affairs
17. **Francis Nwankwo** - Stewardship Manager
18. **Fredah Nyaga** - Finance and Procurement Officer
19. **George Achia** - Communications Officer - East and South Africa
20. **George Marechera** - Agribusiness Business Manager
21. **Gordon Ogutu** - Liasion Officer
22. **Grace Muinga** - Program Officer - Muinga
23. **Howard Okiror** - Legal Officer
24. **Ijeoma Akaogu** - Program Officer - COWPEA
25. **Issoufou Abdourhamane** - Project Manager - COWPEA
26. **Jacquine Kinyua** - Executive Officer
27. **Jane Achando** - Legal Officer
28. **Joanne Muthie** - Digital Communications Officer
29. **Jonga Munyaradzi** - Seed Production Manager
30. **Josephine Mailu** - Head of Human Resources
31. **Mary Asorit** - Accountant
32. **Monica Ndoria** - Regional Advocacy Coordinator - TELA
33. **Moses Taiwo** - Program Officer -Seed Systems
34. **Moussa Elhadj** - Director Finance and Administration
35. **Nancy Muchiri** - Senior Manager - Communication and Partnership
36. **Oluseun Ayodele** - Program Officer - Seeds Abuja
37. **Paul Owolabi** - Associate Finance and Admin Officer
38. **Ruth Rotich** - Monitoring and Evaluation Officer
39. **Samuel Angwenyi** - Project Officer - TAAT
40. **Sanni Kayode** - Project Manager - RICE
41. **Simon Eze** - Driver - Abuja
42. **Sofia Tesfazion** - Director Resource Mobilization
43. **Stephen Obunga** - Projects Accountant
44. **Stephen Wafula** - Driver - Nairobi
45. **Suleiman Okoth** - Program Officer - OFAB
46. **Sylvester Oikeh** - Project Manager - TELA
47. **Vitumbiko Chinoko** - Project Manager - OFAB
48. **Wilson Kivati** - Resource Mobilization Officer

AATF Investors & Partners

Investors



Partners



List of abbreviations and acronyms

AATF	African Agricultural Technology Foundation	KALRO	Kenya Agriculture and Livestock Research Organisation
ADPs	Agricultural Development Projects	KEPHIS	Kenya Plant Health Inspectorate Service
AfDB	African Development Bank	MISS – CAMAP	Market Information Support System for Cassava Mechanisation and Agroprocessing Project
AfS	Alliance for Science	NAADS	National Agricultural Advisory Services
AGOA	African Growth and Opportunity Act	NAERLS	National Agricultural Extension and Research Liaison Services
AGRF	African Green Revolution Forum	NARS	National Agricultural Research Systems
ALDDN	Advanced Local Dairy Development in Nigeria	NBA	National Biosafety Authority
ARC	Agricultural Research Council	NEPAD	New Partnership for Africa's Development
ASBP	African Seed and Biotech Platform	NHL	NARO Holdings Ltd
ATA	Agricultural Transformation Agenda	NPPOs	National Plant Protection Organisation
AUC	African Union Commission	NPTs	National Performance Trials
BW	Bacterial Wilt	NRDS	National Rice Development Strategies
CAMAP	Cassava Mechanisation and Agroprocessing Project	NEWEST	Nitrogen-Use Efficient, Water-Use Efficient And Salt Tolerant (Rice)
CAR	Central African Republic	OFAB	Open Forum for Agricultural Biotechnology
CARD	Coalition for African Rice Development	PASTTA	Project through the Partnerships for Seed Technology Transfer in Africa
CFTs	Confined Field Trials	PBR Cowpea	Pod Borer Resistant Cowpea
CIAT	International Center for Tropical Agriculture	PVS	Participatory Variety Selection
CJED	Calestous Juma Executive Dialogue	QBS	Quali Basic Seed
COMESA	Common Market for Eastern and Southern Africa	RECs	Regional Economic Communities
DARS	Department of Agricultural Research Services	SMEs	Small and Medium-sized Enterprises
DUS	Distinctness, Uniformity, and Stability	SoPs	Standard Operating Protocols
EAC	East African Community	SSA	Sub-Saharan Africa
ECOWAS	Economic Community of West African States	STI	Science, Technology, and Innovation
EMCA	Environmental Management and Coordination Act	TAAT	Technologies for African Agricultural Transformation
FAW	Fall Armyworm	USDA	United States Department of Agriculture
FD	Fortenza Duo	USDA-FAS	United States Department of Agriculture
GAP	Good Agricultural Practices	WG-RVDSP	Working Group on Research, Variety Development and Seed Production
GMO	Genetically Modified Organism		
IAR	Institute of Agricultural Research		
ICRISAT	The International Crops Research Institute for the Semi-Arid Tropics		
IPM	Integrated pest management		
IRRI	International Rice Research Institute		





HEADQUARTERS

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