Biennial Report
2020-2021
An Africa Free From Poverty, Hunger and Malnutrition
The Biennial Report has been developed by Africa Harvest Biotech Foundation International with the support of SPARD Africa Consulting Limited.
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ACRONYMS AND ABBREVIATIONS

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<th>Acronym</th>
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<tr>
<td>ACCA</td>
<td>Association of Chartered Certified Accountants</td>
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<td>AFFA</td>
<td>Agriculture, Fisheries and Food Authority</td>
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<td>AGBIT</td>
<td>Agri-Business Incubation Trust</td>
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<td>AH</td>
<td>Africa Harvest</td>
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<td>ASAL</td>
<td>Arid and Semi-Arid Lands</td>
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<td>AWEP</td>
<td>African Women's Entrepreneurship Program</td>
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<tr>
<td>BA</td>
<td>Bachelor of Arts</td>
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<td>BMDL</td>
<td>Blossom Markets Development Ltd</td>
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<td>BMGF</td>
<td>Bill and Melinda Gates Foundation</td>
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<tr>
<td>BSc</td>
<td>Bachelor of Science</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CNRST</td>
<td>National Centre for Scientific and Technological Research</td>
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<tr>
<td>DSc</td>
<td>Doctor of Science</td>
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<tr>
<td>GETI</td>
<td>Gene Editing Technology</td>
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<td>GMO</td>
<td>Genetic Modification Technology</td>
</tr>
<tr>
<td>HR</td>
<td>Human Resource</td>
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<tr>
<td>ICPAK</td>
<td>Institute of Certified Public Accountants in Kenya</td>
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<td>ICRISAT</td>
<td>The International Crops Research Institute for the Semi-Arid Tropics</td>
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<td>ICT</td>
<td>Information Communication Technology</td>
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<td>IDC</td>
<td>Industrial Development Corporation</td>
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<td>IFAD</td>
<td>International Fund for Agricultural Development</td>
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<td>ILRI</td>
<td>International Livestock Research Institute</td>
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<td>IP</td>
<td>Implementing Partner</td>
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<td>ISAAA</td>
<td>International Service for the Acquisition of Agribiotech Applications</td>
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<td>KALRO</td>
<td>Agricultural and Livestock Research Organization</td>
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<td>KARLO</td>
<td>Kenya Agriculture and Livestock Research Organization</td>
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<td>MIS</td>
<td>Market Information System</td>
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<td>NABDA</td>
<td>National Biotechnology Development Agency</td>
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<td>NAREs</td>
<td>National Research Systems</td>
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<td>NARS</td>
<td>National Agricultural Research System</td>
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<td>NASA</td>
<td>National African Science Academies</td>
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<td>OFAB</td>
<td>Open Forum on Agricultural Biotechnology</td>
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<td>RAPID</td>
<td>Rapid Propagation Innovation and Distribution of seeds Project.</td>
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<td>SOMNI</td>
<td>Strengthening sorghum and millet value chains for food, nutrition and income</td>
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<td>ToT</td>
<td>Training of Trainers</td>
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<tr>
<td>UH</td>
<td>University of Helsinki</td>
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<td>WECARD</td>
<td>West and Central African Council for Agricultural Research and Development</td>
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With great pleasure, we present this Africa Harvest Biennial Report, which takes stock of events, achievements, and efforts in the years 2020/21. While Africa Harvest faced many challenges due to COVID 19 pandemic, the leadership decided to look ahead to the potential opportunities, and underscore the broad range of wonderful projects which we continue to deliver, and development of new ones, despite the challenges, we faced during the fiscal year.

Africa Harvest Biotech Foundation (Africa Harvest) is almost through with the 10-year Strategic Plan (2012-2022); it is therefore helpful to review the progress made over the last year against the institutional goals. The past two years have been about adaptability and innovation following the COVID-19 pandemic which created a global shutdown that affected worldwide supply chains and productivity. Africa has staged a strong recovery following the social and economic impacts of COVID-19.

The reporting years saw different implementation efforts and also encountered a few challenges. The 2012-2022 SP planning cycle did not put into consideration the COVID-19 complications; effects of the COVID-19 pandemic have challenged the agriculture sector and health infrastructure, widening inequality, and is associated with rising poverty. Amongst other challenges created by the pandemic were the, national and international movement of persons which was greatly curtailed, hence affecting implementation of some Africa Harvest activities. These effects have called for innovativeness in implementation and delivery of our activities to safeguard from any form of disruptions or discontinuities.
The current situation emphasizes the need to educate farmers on drought-tolerant crops, and effective ways to counter unexpected pandemics and good agronomy practices to maximize production.

As an organization, we had to restructure and rethink how to move forward safely to help smallholder farmers whose livelihoods were in turmoil. Most smallholder farmers could not afford the luxury of ceasing to farm or working from home and experienced both supply and market disruptions across Africa.

The support from our donors and implementing partners has ensured continuity in improving the lives of smallholder farmers, and lifestyle change for different households. We have continued to impact the lives of smallholder farmers by utilizing a multi-pronged approach targeting the entire value chain. Through our projects, Africa Harvest educates smallholder rural farmers, provides quality planting materials and equipment, promotes good agronomy practices and climate resistant crops which increase farmer’s crop quality and yields. We also connect the farmers directly to buyers.

The period under review therefore saw the Board of Directors and staff of Africa Harvest focus on resource mobilization and the formation of strategic partnerships across the globe that will enable us to operationalize our Pan African vision, scale up proven technologies for adoption and support agribusiness. During this fiscal year, we were able to hit the ground running with new projects, we successfully launched a groundnut value chain project in partnership with Jetlak Foods Limited through the financial support from the AgriFI Kenya Challenge Fund. This project sought to exploit the economic potential of groundnuts in Western Kenya by integrating 2000 small scale farmers in Siaya and Busia Counties into Jetlak Food Limited’s supply chain. Africa Harvest, through the help of its partners has been targeting the entire groundnut value chain to enhance the lives of groundnut small scale farmers in Siaya and Busia counties.

We also successfully launched the Inno-Food-Africa project in partnership with 13 African organizations from Ethiopia, Kenya, South Africa, and Uganda as focus countries with a deep understanding of local needs utilizing the support of 5 European partners with thorough knowledge on up-to-date food and packaging technologies and nutrition. The project aims to develop nutritious food products from traditional and resilient African crops, to tackle worsening food security in Africa resulting from increasing population and declining agricultural production and support the launch of diverse and healthy foods from African farms to local and export markets. We also explored and discussed other projects including Strengthening the Rice Sector for Poverty Reduction in East Africa through...
Improved Productivity and Competitiveness of Domestic Rice (EARiSS). Other Projects included Commercializing rapid-multiplication technologies and new business models that drive private sector investment into banana seed systems—(RAPID program in Uganda and Tanzania), Strengthening sorghum and millet value chains for food, nutritional and income security in arid and semi-arid lands of Kenya and Tanzania (SOMNI Project), Integrating 2,000 smallholder groundnut producers in Siaya and Busia counties into Jetlak Food Limited supply chain, and Gene Editing Technology Initiative (GETI).

We launched Blossom Market Development Ltd to facilitate delivery of technological solutions to farmers and contribute to our sustainability. The company has been fully operationalized and doing well despite the challenges most businesses faced during the Pandemic. The registered Africa Harvest office in Zambia is expected to increase our footprint effectively in the South-Eastern Africa region as we continue to execute and scale-up the diverse agricultural technologies that smallholder farmers require to make their farming efforts fruitful.

We are thankful to our partners and funders for continued support that has enabled us to effectively implement our projects. Through these partnerships, we hope to continue positively impacting lives of smallholder farmers across Africa. We welcome you to read our Biennial Report and get to know more about our projects and the impact we have made in the lives of African smallholder farmers.

Overall, however, we are happy to note that fundraising efforts are yielding good results. We are grateful to all our partners for their support and confidence to our mission and vision and enabling us effectively implement our projects.

We are therefore pleased to present this report to our donors, partners, the Board of Directors, the network, and other Africa Harvest stakeholders. Your support has made these accomplishments possible.

"We are thankful to our partners and funders for continued support that has enabled us to effectively implement our projects. Through these partnerships, we hope to continue positively impacting lives of smallholder farmers across Africa."
Our Vision
Africa free from hunger, poverty, and malnutrition.

Our Mission
Our mission is to use science and technology, gender-sensitive, appropriate agricultural technologies and innovative institutional approaches to improve the livelihoods of rural communities, particularly smallholder farmers.

Our Goal
To build sustainable livelihoods for rural smallholders and resource-challenged communities in Sub-Saharan Africa. We deliver on this commitment by employing integrated, inclusive, and innovative approaches to sustainable agricultural, environmental and value chain development in both high-potential arid and semi-arid lands (ASAL).
Our Presence

Africa Harvest is headquartered in Kenya, and incorporated in South Africa, USA, and Canada with regional offices in Johannesburg and Washington DC, and a networking office in Toronto. Through formal partnerships with national, international, and private research institutions, the organization is set for expansion across Africa.
Our technical programming is structured around six thematic areas:

01 Food and Nutrition Security
02 Natural Resource Management
03 Agricultural Markets, Policy and Resilience
04 Technology Development and Deployment
05 Biosafety Regulatory and Stewardship
06 Communication for Development and Knowledge Management

We also offer an array of technical services including research and technical studies, capacity building, technical advisory support, mentorship, project design and management, business, and market systems development.
OUR PROGRAMS AND INTERVENTIONS
The project aimed to:

- Influence policymakers to create a supportive regulatory environment for the development and commercialization of gene editing technology products.
- Explore whether gene editing champions or professional experts existed in Africa were ready to advocate for creating conducive biosafety and regulatory environment,
- Establish the status of the champions’ knowledge gaps and commitment to the course of gene editing technology
- Provide a platform for dialogue among relevant stakeholders, who would build public support and acceptance for the utilization of gene editing technology to improve food security in Africa.

Overall Goal:

To form and empower a group of influencers to champion the adoption of gene editing technology in Africa with a view to improving food security.
Key Achievements:

- Gene editing expertise in Africa determined
- A team of 19 experts across Africa constituted
- Four policy briefs drafted for target audiences in gene editing technologies (researchers, regulators, policymakers and the public)
- Development and deployment of communication strategies.
Innofood Africa as an ongoing project that addresses key barriers of the African agro-food system, i.e. low productivity, limited access to urban and international markets, affordability and convenience of the foodstuffs.

**Overall Goal:**
To promote production and utilization of climate smart foodstuffs as affordable sources of nutrient-dense, and healthy food products for vulnerable people including the malnourished infants, expectant mothers and urban adults under the risk of obesity.

**The project aims at:**
- Developing and demonstrating optimal solutions for cropping practices, processing and productization of the local climate smart crops to foodstuffs and bio-packaging via new value chains to markets in Ethiopia, Kenya, South Africa, and Uganda.
- Open opportunities to launch the new foodstuffs to international markets.
- Organizing joint events for technology and knowledge transfer and sharing training materials with other EU funded projects.
The Role of Africa Harvest:

- Developing preliminary innovation and commercialization plan together with Technical Research Centre of Finland (VTT) and University of Helsinki (UH).
- Design and negotiate an approach to Intellectual Property Rights (IPR) management among consortium members.
- Production of communication materials to build project visibility, influence policy as well as promote adoption and scale-up.
- Innovation management by continuously reviewing the draft innovation, commercialization plan while exploring and implementing strategies for strengthening the positioning of the innovation brand.
- Creation and management of Innovation Platform
- Identify (in partnership with in-country project partners) national stakeholders, local networks and other international actors to support the roll out of the IP.

For more information https://innofoodafrica.eu/
Commercializing RTB Accelerator for Rapid Propagation Innovation and Distribution of seeds (RAPID) Project.

The Rapid Program was funded by Bill and Melinda Gates Foundation (BMFG), through Context Global, targeting Tanzania and Uganda between Jan 2019 and Dec 2021. The project was structured as an Innovation Fund Process starting with a landscaping study phase; a validation grant phase and finally a scale-up phase with each having different time intervals from start to completion and different deliverables.

**Project Goal:**
To commercialize rapid multiplication technologies and new business models that drive private sector investment in banana seed systems.

The project applied a multi-dimensional approach to:

- Improve the efficiency of the banana seed systems through in-vitro and in-vivo plantlet production, management involving; tissue culture, nursery and field multiplication methods.
- Develop distribution systems for planting materials for small scale farmers using innovative technologies and business models
- Unlock the bottlenecks and challenges in the banana seed system in both countries.
Tissue culture process from initiation to hardening in the nursery

Bananas plantlets multiplied using the RITA Temporary Immersions System (TIS)
Cassava (left) and banana (right) on SAH at KilimOrgano Limited

Stages in Banana Macropropagation
Proposed Model

The proposed model is a Hub and Spoke model where the laboratory sets up a regional hardening and distribution nursery to address the last mile linkage with farmers through a partnership with local entrepreneurs or the community.

Semi-hardened planting material from the TC labs are supplied to a central location where hardening and acclimatization is done to bring them to a level/status that farmers can handle the plantlets. The location is in an urban center/town closer to farmers and away from the labs which are predominantly domiciled in urban centers where power and other infrastructure needs are easily accessible. Once hardened, the plantlets are then supplied to satellite nurseries within close proximity to farmers’ fields and which are linked to the central hardening nursery from where farmers can then access the improved planting materials for production purposes.
The goal of SOMNI program was to contribute to improved food, nutritional and income security for enhanced livelihoods and gender equity among smallholder farming households in semi-arid lands of Kenya and Tanzania.

Overall objective:
To identify, develop and test improved cultivars of sorghum and millets to increase dry-land cereal production and dry-lands productivity for improved food and nutrition security, increased household incomes while protecting local environments.

The project applied a multi-dimensional approach to:
- Improve the efficiency of the banana seed systems through in-vitro and in-vivo plantlet production, management involving; tissue culture, nursery and field multiplication methods.
- Develop distribution systems for planting materials for small scale farmers using innovative technologies and business models
- Unlock the bottlenecks and challenges in the banana seed system in both countries.
Key Achievements:

- 97 groups with an average membership of 36 farmers supported in the implementing counties;
- Participatory variety and hybrid selection trials conducted at 78 sites comprising of 78 sorghum trials (72 open-pollinated and 6 hybrids trials), 41 pearl millet trials (37 open-pollinated and 4 hybrids trials) and 45 finger millet trials.
- 15,672 farmers trained on production and productivity enhancement in partnership with county agricultural departments in the 12 project wards between 2016 and 2020.
- Training on Post Harvest Management targeting 91 groups from the 78 trial sites.
- Increase in production contributing to increased household incomes as well as providing raw materials for commercial and cottage processing.
- Exploring opportunities for developing fish feed formulation using appropriate Sorghum/Pearl Millet varieties promoted through SOMNI with a view to promoting aquaculture in Homa Bay County and Kisumu Counties of Kenya.

Other impacts included:

- Enhanced access to improved varieties of Sorghum, Pearl & Finger millet,
- Enhanced capacity of key players in the value chain
- Increased crop diversification and utilization catalyzed by both household and commercial uptake of the target crops.

Below is the feed production unit in Lambwe Ward, Homa Bay County. Inset, is the feed pelleting equipment.
The EARiSS project was timely and strategic in the overall picture, as the three target countries seek to bridge the gap between local supply and demand through a competitive domestic rice production strategy.

Rice consumption is growing faster than domestic production in East Africa and most countries are therefore suffering from a huge and fast-growing consumption-production gap. For example, Per capita consumption in Kenya has risen from 12kg (2008) to 22.1 kg (2019) as per the Economic Survey, 2020. The project is funded by the International Fund for Agricultural Development (IFAD) with The Africa Rice Center (Africa Rice) as the main grantee. The three-year project runs from 1st May 2019 to 30th April 2022 in Kenya, Uganda, and Madagascar.

Overall Goal:
To enhance food security and poverty reduction through improved productivity, market access and functional linkages in the rice value chains in project intervention areas.

Expected Outcomes:
1. Enhanced large-scale adoption of appropriate rice technologies and innovations
2. Increased knowledge of farmers and other value-chain actors on improved agronomic, post-harvest and marketing practices
3. Increased availability of quality domestic rice
4. Increased opportunities for the creation of income-generating entities for women and youth
5. Enhanced access to markets by rice producers.
Target Beneficiaries:

Direct target:
4,000 farmers with an estimated 24,000 persons as direct beneficiaries, staff from the National Agricultural Research System (NARS) in the participating countries, seed producers, extension service providers and rice processors. At least 40% of the direct target group should be women, while youth, aged 15-35 years, constitute at least 20% of the direct target group.

Indirect beneficiaries:
Other rice value chain actors such as farm input dealers, equipment fabricators, transporters, micro-finance providers, NGOs, and policy makers.

Implementers:
- Africa Harvest Biotech Foundation International (Africa Harvest) is the regional partner in collaboration with National Research Systems (NAREs) in the target countries.

Role of Africa Harvest:
- Support in the identification of Rice development Hubs in Kenya,
- Introduction and promotion of motorized weeders,
- Identify, test and promote alternative seed delivery mechanisms,
- Training on post-harvest management and marketing strategies
- Facilitating functional linkages among stakeholders in the Rice value chain through the formation and support of Multi-stakeholder platforms,
- Monitoring, Evaluation and supporting in project coordination meetings.
Model:

The project is implemented through Rice Sector Development Hubs, commonly called Rice Hubs. Hubs are testing grounds for new rice technologies and follow a ‘reverse-research approach’, i.e. starting from the market. There are currently more than 70 Rice Hubs in more than 25 countries across Africa. A total of nine Hubs have been identified across three Rice growing ecologies applicable in Kenya namely, Lowland irrigated, Lowland rain fed and upland rain fed. The project team chose to work in two of the nine hubs namely, Central Hub covering Kirinyaga, Murang’a and Embu regions and Taveta Hub covering rice growers in Taveta Sub-County towards the Coastal region.

A multi-stakeholder Innovation Platforms (IP) is the cornerstone institutional approach in the implementation of EARiSS project. The IP facilitates the establishment of functional linkages and promotion of collective action amongst rice value chain stakeholders. The integration of digital solutions in the IP ecosystem will further accelerate the structuring of sustained value chains, market integration and competitiveness of local rice.

Key Achievements:

- Introduction and testing of motorized weeders in Central and Taveta hubs;
- Training of 37 Trainer of Trainers (TOT) in Rice Marketing strategies in all three countries.

The COVID-19 pandemic and the resultant lock downs and advisories on restricted movement to project implementation areas significantly hampered the timely roll out of the project activities.
Unlocking investment for smallholder agriculture through blended financing options

The AgriFI / JETLAK Groundnut project is being implemented in Busia and Siaya counties of Kenya. The 24-month long project commenced activities in February 2021 with funding from the European Union (EU) and The Slovak Aid and was administered through the AgriFI Kenya Challenge Fund. Self Help Africa is the grant manager while Jetlak Foods Limited is the lead SME supported by Africa Harvest as the technical implementation partner. Promoting 4 Groundnut varieties namely, ICGV 12991, ICGV 90704, CG7 and Valencia Red.

Target Beneficiaries:
The project aims to integrate 2,000 smallholder groundnut farmers into Jetlak Food Limited supply chain through four key implementation objectives:
1. Seed systems development,
2. Production and Productivity enhancement,
3. Improving Postharvest management and market infrastructure
4. Strengthening internal systems and expanding capacity.

Key Achievements:
- A total of 1029 Groundnut farmers in 56 groups mobilized, sensitized, and registered to take part in the project in the two counties of Busia and Siaya.
- Purchasing and installation of dehulling/shelling equipment, setting up aggregation centers, training entrepreneurial farmers in business management and purchase of digital weighing scales.
- 607 farmers supplied with improved seeds, trained in good agronomic practices and planted 134 acres of the groundnut crop.
- 275 farmers in 19 groups were trained in harvesting and post-harvest management during the year 2021
- 15 Demonstration plots established
- 21 seed multipliers identified and supplied with inputs to establish approximately 10 acres of seed
Key Achievements:

- 6 collection points fully established
- Five Groundnut shelling units were fabricated at Siaya Agricultural Technology Development Center and thereafter used to provide shelling services at the collection centers.
- Purchase of a Market Information System (MIS) by Jetlak Foods Limited to register farmers and provide a platform for traceability.
- Jetlak Foods Limited installed a solar system to help run the Groundnut processing unit.
- Refresher trainings on food safety, marketing and Human Resource management along with setting up of HR systems at Jetlak Foods Limited.
- 2,000 branded brochures on groundnut production printed during the year 2021 and distributed across the implementation wards.
The Blossom Story

Blossom Markets Development Ltd (BMDL) is a subsidiary company, 100% owned by Africa Harvest. It was launched in April 2019 to support enterprise development along the whole value chain. It is headquartered in Nairobi, Kenya. Blossom will leverage Africa Harvest’s 18 years of experience in streamlining the whole value chain, including marketing and aggregation.

Goal:
The goal of BMDL is to provide business support to different value chain players including seed suppliers, processing and value addition businesses and marketing intermediaries.

Target Groups:
Farmers, companies both public and private, private investors, non-governmental organizations, and government institutions.

Scope:
Blossom will be a one stop shop for smallholder producers for: agricultural innovations; services; training; capital access; financial linkages; extension services; and market linkages both local and international.
MEET OUR LEADERS

Mrs. Silvya Banda
Chair, Board of Directors

Mr. Joseph Kibe
Board Vice-Chair & Treasurer

Dr. Om Dangi
Board Member

Ms. Larkin Martin
Board Member

Dr. Paco Sereme
Board Member

Dr. Walter De Milliano
Board Secretary

Dr. Ephraim Mukisira
Board Member

Dr. Florence Wambugu
Chief Executive Officer

Dr Rose Gidado
Board Member
FINANCIALS

Grant income 2020: % income per donor

- Crop Life International: 7%
- German Devt Cooperation: 9%
- Africa Rice Center: 27%
- INFAS: 50%
- Individuals: 2%

Grant income 2021: % income per donor

- Crop Life International: 9%
- Africa Rice Center: 20%
- European Commision: 26%
- Self Help Africa: 37%
Contact us

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