



AfricaRice

33rd Ordinary Session of the Council of Ministers

Africa Rice Center (AfricaRice)

13-15 November 2024

**Report of the Director General (Secretary to the Council of
Ministers)**

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March 2022 – October 2024

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1. **Introduction:** The Africa Rice Center (AfricaRice), one of 15 international agricultural research centers of the CGIAR System Organization (CSO), is a pan-African Center of Excellence for rice research, development, and capacity building, and an intergovernmental Association of 28 African member countries¹.
 - 1.1 **AfricaRice, the Association:** The Association is mandated by its member countries to assist their governments by collaborating in rice research and development to overcome challenges faced by the rice sector in Africa. The Council of Ministers (COM) of AfricaRice, consisting of Ministers of member countries, is the supreme governing organ of the Center.
 - 1.2 **The functions of COM** are: (i) appointing the Director General (DG); (ii) examining the medium and long-term program of work; (iii) examining the annual and other major reports and reviews; (iv) assisting in resolving major relevant political issues in member states; (v) approving regular and special financial contributions by member countries; and (vi) establishing any subsidiary bodies necessary for the implementation of its functions. The COM meets biennially to review issues related to the Association's functions. COM may also meet in extraordinary sessions as may be required. The 32nd COM was hosted virtually by Egypt because of the international travel challenges linked to Covid19.
 - 1.3 **Issues to be addressed by the 33rd COM:** This 33rd ordinary session of COM will address among other issues, the biennial report of DG/Secretary to COM, endorse the Board of Trustees proposed amendment to the Constitution, the recommendations of the National Experts Committee (NEC) with the aim of passing relevant resolutions, and elect a new Council Chairperson, whose country hosts the 34th COM.
2. **Advocacy:** Intense interactions with high-level government officials of member countries have continued in 2022 through 2023 and 2024. The outcome of these interactions include:
 - 2.1 **Payment of annual dues by member countries:** Increased awareness by member states of their statutory obligation to pay annual contributions to AfricaRice. In 2022 a total of US\$ 0.659 million was realized; and in 2023 a total of US\$ 0.385 million in arrears was paid. However, only US\$ 0.018 million has been received since 2024 despite several appeals to member countries.
 - 2.2 **Deployment of AfricaRice expertise in response to member countries' priority requests:** AfricaRice has continued to deploy the requisite expertise in response to the needs expressed by member states. Including the deployment of AfricaRice scientists to Gambia in 2024 to work on the Presidential Rice Initiative.
 - 2.3 **New partnership agreements:** AfricaRice has signed over 50 new partnership agreements, notably with private seed enterprises in seven member states (Benin, Burkina Faso, Cameroun, Cote d'Ivoire, The Gambia, Ghana, Guinea Bissau, Mali, Niger, Nigeria and Senegal), to train technicians and farmers as well as enhance the production of quality seeds of improved rice varieties, thus increasing access by producers to quality seeds.

¹ Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Côte d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Gabon, the Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mozambique, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, Togo, and Uganda

- 2.4 International consultations with partners: AfricaRice’s advocacy activities include the Center’s continuing efforts in mobilizing international knowledge to bear on delivering rice agri-food systems in Africa. In this regard, AfricaRice participated in several CGIAR and other international forums including the following:
- 2.4.1 Africa Food Summit in Senegal in 2023,
 - 2.4.2 CARD General Assembly in Cote d’Ivoire in 2023,
 - 2.4.3 African Food Systems forum held in Tanzania and Rwanda in 2023,
 - 2.4.4 Korean-Funded KAFACI project General Assembly in Kenya in 2024,
 - 2.4.5 World Agri-Food Innovations summit in China in 2024,
 - 2.4.6 Korea-Africa Summit, Korea-Africa Agricultural Conference (5 June 2024, Seoul, Republic of Korea),
 - 2.4.7 6th General Assembly of KAFACI (26-29 August 2024, Nairobi, Kenya); and,
 - 2.4.8 African Food Systems Forum 2024 (2-6 September 2024, Kigali, Rwanda).
3. Awards: AfricaRice and its staff received the following awards for excellence in scientific research and innovation as a recognition of the Center’s efforts in striving for the attainment of food self-sufficiency in Africa:
- a. Awards in 2022:
 - i. **Quality of Research Discovery Award** for the publication entitled **“Contract farming and rural transformation: Evidence from a field experiment in Benin”** (<https://doi.org/10.1016/j.jdeveco.2021.102626>),
 - ii. **Best Publication of 2021 Award, first place prize winner**, for the publication entitled **“One Size Fits All? Experimental Evidence on The Digital Delivery of Personalized Extension Advice in Nigeria”** (<https://doi.org/10.1111/ajae.12151>).
 - b. Awards in 2023:
 - i. 2023 Presidential Citation of the Republic of Korea to Dr Baboucarr Manneh, Director General of AfricaRice for sustainable partnership.
 - ii. Recognition by Elsevier of Dr Aminou Arouna, Leader of the Policy Innovation and Impact Assessment program, for the contribution of five articles linked to the UN SDGs and helping to tackle some of the world’s greatest challenges.
 - iii. Borlaug Young Scientist Award to Dr Elliott Dossou-Yovo.
 - c. Awards in 2024:
 - i. Young scientist Award to Dr Elliott Dossou-Yovo from Japan.
4. Research and Innovation

- 4.1 AfricaRice Science Week: The Center’s Science Week is traditionally a period during which AfricaRice scientists, their counterparts from national research institutions, and other stakeholders meet to examine the outcome of the previous year’s collaborative research, critique it, and plan for the coming year. Prior to the Covid19 epidemic, the Center’s Science Weeks were always organized in person. Covid19 challenges introduced the imperative of virtual Science Week meetings. The 2023 Science Week was attended by more than 200 NARS scientists and partners at the AfricaRice M’Bé station, Bouake. It was—the largest gathering of NARS and AfricaRice scientists post-Covid19.
- 4.2 Genetic Diversity and Improvement: The highlights of achievements of the GDI program in the last few years include: a) The Center’s GeneBank, which is continually fostering a culture of Continuous Improvement and achieved notable milestones across various domains; b) Gene Discovery & Trait Deployment (Pre-breeding): Identified novel genes and traits in *Oryza glaberrima* and related species to develop new donors for global breeding programs; c) Transforming the AfricaRice and NARES Breeding Programs; d) Enhancing Food Security in Africa: AfricaRice-NARES Partnership Network for development of Climate-Resilient Rice Varieties; e) AfricaRice- HEALTH Network Launched in collaboration with JIC, IRRI, CIRAD, IRD, and NARES from Burkina Faso, Nigeria, Cameroon, and Uganda, AfricaRice – launch of the Plant Health initiative to improve diagnostic and surveillance efforts for rice diseases across Africa; and, f) Gender-Inclusive Product Development: Identification and incorporation of gender-preferential traits into breeding to improve adoption of new cultivars. Specifically, the GDI made the following advances within the last two years:
- 4.2.1 AfricaRice GeneBank: The GeneBank, Rice Biodiversity Center for Africa, now holds 21,035 rice accessions, preserving rare genetic diversity from diverse landscapes. It includes both cultivated species (*Oryza sativa* and *O. glaberrima*) and five indigenous African wild species (*O. longistaminata*, *O. barthii*, *O. punctata*, *O. brachyantha*, and *O. eichingeri*). This genetic repository is a vital resource for breeders globally, aiding in the development of high-yielding, climate-resilient rice varieties, particularly for Sub-Saharan Africa. Within the last year, 2023, global regeneration and distribution of 1,151 accessions was carried out for research purposes. Due to excellent management which resulted in the attainment of set international quality standards, the AfricaRice genebank is now qualified for long term funding from the Crop Trust, to the tune of half a million USD each year.
- 4.2.2 Gene discovery and trait deployment: The GDI program continues to conduct studies aimed at identifying novel genes and continually integrating donor traits into breeding programs to combat biotic and abiotic stresses, and enhance grain quality, and nutritional traits. Some of the biotic and abiotic factors being actively combated include resistance to AfrGM, blast, RYMV, and tolerance to iron toxicity, anaerobic germination, and submergence.
- 4.2.3 Transforming the Breeding Programs of AfricaRice and NARES: This thematic area aims to accelerate genetic gains and develop climate-resilient rice varieties for Sub-Saharan Africa. The third-party BPAT (Breeding Program Assessment Tool) assessment of AfricaRice's breeding programs, conducted in 2023, praised the rapid transformation of the programs. Key achievements include: a) effective market segmentation, b) developing market-aligned products, c) shortening breeding cycles, d) automating and mechanizing breeding operations, e) digitizing data capture and management, and f) strengthening the AfricaRice-NARES breeding networks, particularly the Breeding Task Force. AfricaRice has continued to dedicate to the transformation of NARES breeding programs, enhancing the capacity of NARES colleagues aimed at delivering higher genetic gains and faster varietal turnover.

- 4.2.4 AfricaRice-NARES Partnership Network for Climate-Resilient Rice Varieties: AfricaRice's global breeding programs, encompassing nine distinct pipelines tailored to specific market segments, cater to approximately 92.6% of the rice-growing area across 30 Sub-Saharan African countries. This is made possible through its strong and long-standing partnership with national programs (NARES) in these countries, facilitated by the Breeding Task Force (BTF). In the last two and half years, the AfricaRice global breeding programs have provided approximately 8,781 elite breeding lines to national partners (NARES) via the Breeding Task Force for on-station and on-farm testing, trialing, and the release of new climate-resilient rice varieties across Africa. AfricaRice's breeding programs, including KAFACI, in partnership with NARES through the AfricaRice Breeding Task Force, have successfully released and introduced 67 climate-resilient, high-yielding, and nutritious rice varieties across 13 Sub-Saharan African countries—Ghana, Madagascar, Côte d'Ivoire, DRC, Ethiopia, Malawi, Zimbabwe, Mali, Nigeria, Rwanda, Senegal, Uganda, and Zambia—over the past two and a half years (2022 to September 2024). This includes five new upland rice varieties with excellent traits—such as high yield, early maturity, drought tolerance, and blast resistance in the last two years.
- 4.2.5 AfricaRice-NARES Network Partners Knowledge Sharing: GDI program focuses on sharing knowledge, transferring technology, and empowering partners within the AfricaRice-NARES Breeding Networks to improve breeding efficiency and adopt globally recognized best practices. Between 2022 and 2024, hundreds of NARES researchers from over two dozen countries have visited AfricaRice's advanced breeding facilities at the M'Be Research Station, as well as research stations in Senegal, Nigeria, and Madagascar. During their visits, they received training in cutting-edge breeding technologies, including Rapid Generation Advancement, high-throughput SNP genotyping, electronic data capture, breeding management systems, data management and analysis, breeding analytics, and breeding modernization, along with best practices in the field.
- 4.2.6 AfricaRice-HEALTH Network Launched: The AfricaRice-HEALTH Network has been launched by AfricaRice's Plant Pathology and Germplasm Health Unit (PP-GHU) in collaboration with JIC, IRRI, CIRAD, IRD, and NARES research centers in Burkina Faso, Nigeria, Cameroon, and Uganda. This network links 19 countries and has the remit of enhancing diagnostic and surveillance efforts for rice diseases across Africa. Key achievements include: a) optimizing direct pathogen sequencing from field samples, b) characterizing emerging diseases like Bakanae and Brown Spot, and c) conducting epidemiological studies on rice blast. The PP-GHU supports global seed safety by analyzing more than 10,000 accessions each year for the benefit of the NARES.
- 4.2.7 The way forward: Genetic Diversity & Improvement (GDI): a) GDI would to define, develop and deliver market-preferred, climate-resilient, nutritious rice varieties and hybrids to achieve greater productivity under erratic climate change conditions; b) GDI will continue to expedite and modernize the Center's breeding programs and seed system landscape and that of the NARES partners; c) GDI will continue to consistently foster global partnerships, including CGIAR-NARES-SME breeding networks, to enhance access to vital genetic resources, innovative tools, technologies, and services; thus, optimizing the development of innovation; d) deploy continuous efforts in identifying and enhancing the strategic and operational capabilities of breeding networks, empowering them through knowledge sharing, technology transfer, and strengthened capacity-building initiatives; and e) continuously deploy efforts in promoting access to innovation and cutting-edge technologies like gene editing, AI, machine learning, ICT, drone-based imaging,

and disease forecasting to combat food insecurity and mitigate against climate change effects in Africa.

4.3 Sustainable Productivity Enhancement (SPE): This program has delivered the following results during the last two years:

4.3.1 Validation and out-scaling of RiceAdvice Lite: RiceAdvice Lite (RAL) is a rice digital advisory developed based on the results and experience gathered from a large scale use in Africa over the last few years of the full Android application version of RiceAdvice (RA). Analyzing thousands of “advices” made has enabled the development of RAL, which requires less information from a user than RA. RAL gives proven pre-season recommendations on fertilizer and other management practices, based on a very minimal amount of information to be provided by the farmer on location, crop, and environment, which will take around three minutes to complete—compared to 23 minutes when using RA. RAL has been validated in Burkina Faso, Mali and Nigeria with yield gains ranging from 0.4 to 1.7 t/ha (9-54%) and profit increases ranging from 137 to USD 404. From 2020 to 2024, 38,988 farmers used RAL in the three countries. RAL is currently being validated in Ghana, Cote d’Ivoire, Senegal, Sierra Leone, Madagascar, Rwanda, Tanzania and Cambodia.

4.3.2 Agronomic and economic evaluation of ratoon rice cropping systems with perennial rice varieties: The agronomic and economic performance of ratoon rice cropping systems and perennial rice varieties were evaluated at M’bé in Côte d’Ivoire and the Ndiaye in Senegal. The study identified two perennial rice varieties (PR23 and PR25) in Côte d’Ivoire and one perennial rice variety (PR107) in Senegal that achieved similar grain yield with reduced labor input and production cost, resulting in higher labor productivity and profit in the rice–ratoon–ratoon system compared to the local check in a rice–rice system—an existing usual double cropping system. The promise of ratoon rice is attracting investor attention.

4.3.3 Integrated rice-fish systems: This is an eco-friendly approach for enhancing food and nutrition security and combatting malaria in Africa and promoting circular economies from reduced fertilizer use and potentially reduced greenhouse gas emissions. AfricaRice and its NARES partners are actively implementing and expanding the validated integrated rice-fish system across Africa to enhance the environmental, economic, and social sustainability of rice farming.

4.3.4 Deployment of artificial intelligence (AI) to respond to farmers’ questions on improving rice cultivation: The limited number of agricultural extension agents (EAs) in sub-Saharan Africa negatively impacts farmers’ access to extension services. Artificial intelligence (AI) assistants have been found to be of potential aid in providing responses to farmers’ questions. AfricaRice’s evaluation of the ability of an AI chatbot assistant (ChatGPT) to provide quality responses to farmers’ concerns has demonstrated that overall, ChatGPT responses were rated significantly of higher quality than EAs’ responses.

4.3.5 Mapping-out countries that should receive higher priority for improving inorganic fertilizer use in rice fields in sub-Saharan Africa (SSA): following the recent situation of rapid increases in fertilizer costs, evidence-based prioritization for inorganic fertilizer use should be crucial information for policy makers and decision-takers. Recent studies by AfricaRice addressed this question by assessing the spatial variation in fertilizer use and its association with rice yields and yield gap in 24 SSA countries. The results showed a large variation in N, P, and K fertilizer application rates and rice yields, and an opportunity for narrowing the yield gap by increasing N and P rates, especially in irrigated rice systems. AfricaRice scientists identified clusters of sites/countries based on

nutrient input and yield, and suggested research and development strategies for improving yields and optimizing nutrient use efficiency in those sites.

- 4.3.6 Systematic review of paddy rice yield and greenhouse gas emissions: the overall effects of combined application of biochar and N fertilizer rates on Greenhouse Gas (GHGs) emissions, Global Warming Potential (GWP), rice yield, and Greenhouse Gas Inventories (GHGI); the determination of the quantities of biochar and N-fertilizer application that increase rice yield and reduce GHGs emissions and GHGI; and the effects of biochar and different types of nitrogen fertilizers on rice yield, GHGs, GWP, and GHGI were evaluated. The results indicate that a combination of low biochar (≤ 9 t/ha) and medium N (>140 and ≤ 240 kg N/ha) produced lower GHGs emissions, high grain yield, and the lowest GHGI. This could be recommended to smallholder farmers to increase rice yield and reduce greenhouse gas emissions from paddy rice fields.
- 4.3.7 Monitoring mycotoxins in rice through rapid detection and control: AfricaRice continues to monitor mycotoxin contamination of rice produced domestically in Africa as against imported rice. Recent studies conducted in five African countries and from a total of 54 marketers from which 590 samples were collected and analyzed for mycotoxin contamination in the laboratory at the M'Bé station, indicated that some 70% of the 540 samples tested positive for aflatoxin contamination. One third of the samples had contamination levels above the maximum regulatory limit (MRL = 4 ppb). To reduce mycotoxin contamination, therefore, agronomic practices, and the conditions of harvesting, and post-harvest handling and storage need be better managed.
- 4.3.8 Enhanced nutritional status of milled rice by parboiling: Out of 39 macro and micronutrients analyzed, parboiled rice recorded impressively higher quantities in 30 macro- and micronutrients compared with non-parboiled white rice including Folate, Thiamine, Fe, Niacin, Vitamin B6 and Ca. However, Zn concentration — another important micronutrient likely to be insufficient in many diets — was not improved by parboiling. Therefore, fortification and biofortification need to be combined with parboiling to address the deficiency of both Fe and Zn. Following the use of both meta-analysis and our experimental data, AfricaRice has demonstrated that rice parboiling has both economic and nutritional benefits compared to straight milling.
- 4.4 Policy, Innovation Systems, and Impact Assessment: This program has delivered the following results during the last two years:
 - 4.4.1 Policy options to transform rice-based agri-food systems: AfricaRice published a Policy Brief in 2023 aimed at providing policy options to guide member countries on how to handle India's ban on non-Basmati rice.
 - 4.4.2 Impact of ARICA 6 rice variety: Recent econometric studies in farmers' fields demonstrate that ARICA 6 rice variety has potential in tolerating iron toxicity - this variety not only maintained its yield capacity but also increased yield by 330 Kg/ha and income by US\$ 120/ha.
 - 4.4.3 Impact of GEM parboiling technology on women's income and nutrition: Socio-economic studies on the impact of adoption of the GEM rice parboiling system indicate that the GEM system enhanced parboilers' rice output – dehulling return – income and food security, and increased income.
 - 4.4.4 Knowledge improved in enhancing gender equality in the adoption of technologies: Multi-country studies conducted by AfricaRice demonstrate that women-to-women communication improved female farmers' access to Smart-valleys technology information and knowledge. This confirms the assumptions that involving female communicators will reduce gender inequality in technology dissemination and knowledge uptake. On-farm demonstration was identified as the most effective

approach, not only in Smart-valleys technology information and knowledge communication, but also in ensuring gender equity in both male and female farmers' access to technology information and knowledge.

- 4.5 Rice Sector Development: This program has delivered the following results during the last two years:
- 4.5.1 Eight diversified healthy diet labs (LL) targeting some 40 million beneficiaries created and being facilitated across Africa: This is to enhance the production, processing, marketing and consumption of healthy foods. They include the Bouake LL (Cote d'Ivoire), Ibadan LL (Nigeria), Abuja LL (Nigeria), Margibi LL (Liberia), Cotonou LL (Benin), Dschang LL (Cameroon), Nairobi and Makueni LL (Kenya) and Kajjansi LL (Uganda).
 - 4.5.2 Sixteen core climate resilient innovation packages spanning varieties, good agronomic and post-harvest practices identified and being integrated into country programs: These are being done through TAAT, REWARD, CAW-Adaptation and Mitigation and the African Emergency Food Production Facility (AEFPF).
 - 4.5.3 Four Youths in Agri-business Healthy Diet Hubs in Africa strengthened: These include (i) African Project Development Center-Gwagwalada, Nigeria, (ii) Opportunities Industrialization Center-Bouake, Côte d'Ivoire (iii) Agri-business Vocational Training Center-Dschang, Cameroon and (iv) Food Security for Peace and Nutrition-Nairobi, Kenya.
 - 4.5.4 1,108 youths (640 women and 468 men) in agri-business received diversified services in 2024, and 43 new healthy food startups created and supported: This action will continue up to 2028.
 - 4.5.5 Capacity development in seed production and management: AfricaRice provided capacity development in seed production and management for 163 institutions (36 public and 126 private) from Benin, Cameroon, Cote d'Ivoire, Ghana, Madagascar, Senegal and Uganda. The capacity development received by these countries also included seed processing, storage and marketing.
 - 4.5.6 Partnership with NARES and CGIAR centers to enhance food security: AfricaRice is partnering with CGIAR and NARES to ensure that seeds of diversified target crops and fish - rice, cassava, soybeans, coffee, fish – are being produced through AfricaRice-led third-party contracts with public and private institutions across Africa. In partnership with IITA and WorldFish - 47,000 tonnes of certified seeds of rice, 62,500 bundles of cassava cuttings, 4,800 tonnes of certified soybean seeds, 1,100,000 coffee seeds and 45 million large-size fish fingerlings have been produced and distributed to NARES.
 - 4.5.7 Involving private sector in production of post-harvest tools: AfricaRice catalyzed the production of 2,000 ASI-threshers by private manufacturers between 2023 and 2024 in Benin, Burkina Faso, Cameroon, Cote d'Ivoire, Mali, Liberia, The Gambia, Nigeria and Senegal.
 - 4.5.8 Popularizing the use of rice husks as fuel: 145 new GEM parboiling systems fueled by rice husk benefiting women groups have been produced and installed in seven countries – six in Benin; two in Cameroon; 20 in Côte d'Ivoire; six in Ethiopia; five in Mali; 100 in Nigeria; five in Madagascar; and, one in Senegal.
 - 4.5.9 Promoting low glycemic rice: 82,000 tons of milled white rice with low glycemic and high micronutrient rice have been produced and supplied to about 2 million consumers between Oct 2023 and 2024 (average per capita consumption fixed at 40 kg).
 - 4.5.10 Production of hermetic seed storage system: Some 900,000 farmers were supported to acquire hermetic systems for grain and seed storage in seven countries – Benin, Cameroon, Cote d'Ivoire, Liberia, Mali and Nigeria.

- 4.6 New MegaPrograms: The MegaPrograms are One CGIAR-led programs in which the centers play a significant role in conceptualization and planned implementation. AfricaRice is playing a significant role in the development and implementation of megaprograms in the following three areas:
- 4.6.1 Sustainable Farming Program: This program aims at realizing productivity, resilience, and sustainability at scale through integrated agronomy, plant health, and farming system solutions. The focus of this program is on a holistic approach to addressing challenges of agri-food systems, thus ensuring effectiveness and efficiency in sustainable food production.
 - 4.6.2 Digital Transformation Accelerator Program: This program envisions accelerating equitable transformation of food, land, and water (FLW) systems through digital innovations, data- driven insights, and impactful ventures. The program will support Science Programs to harness the power of digital technologies.
 - 4.6.3 Climate Action Science Program: This program seeks to transform food, land and water systems into climate-resilient, net-zero models, aiming to cut emissions by 1 gigaton CO2e annually by 2030 through science, innovation, and collaboration across five key areas of work that focus on policy, finance, data, climate risk management, locally led adaptation and low emission development solutions.
- 4.7 Scientific publications: The publication of research results constitutes one of the primary indicators of the intellectual productivity of AfricaRice scientists and their NARES partners. Results published include new or improved knowledge on rice technologies, tools, methods, practices, and policy options, which contributed to improving the performance of the rice value chain and bolstering rice productivity and production on the continent. A total of 220 articles were published between 2022 and 2024 (Table 1).

Trends in the number of journal articles produced by AfricaRice scientists and partners over the period 2022-2024

Year	Peer-reviewed journals	SCI & SCIE journals	Open Access journals	Total/year
2022	33	30	18	81
2023	28	23	19	70
2024	30	19	20	69
Total	91	72	57	220

5. Strategic Partnerships and Business Initiatives: AfricaRice, built on the foundation of partnerships, continues to strategically align with some development and technical partner ecosystems with the aim of ensuring continued growth in the Center’s science and innovation. In this regard, AfricaRice has made the following strides:
- 5.1 Scaling Partnerships: Five types of partnerships are highlighted- Partnership with IFIs (AfDB, Mastercard Foundation, etc.); partnerships with diversified public and private institutions (HealthyDiets4Africa Consortium), partnerships targeting specific companies with products of interest (GrainPro Inc - being reviewed for signing) and partnerships for production and marketing of specific innovations (private seed enterprises, processors, and equipment fabricators).

- 5.1.1 AfDB-AfricaRice partnership: AfricaRice has established a strong scaling partnership with the African Development Bank (AfDB), with a focus on accelerating the adoption of validated agricultural innovations through key initiatives like the REWARD, TAAT, and CAW-Adaptation and Mitigation programs. Through this partnership, AfDB provides critical funding that enables AfricaRice to scale up climate-resilient and high-yielding rice technologies across Africa, benefiting smallholder farmers and improving food security.
- 5.1.2 Mastercard Foundation-AfricaRice partnership: AfricaRice's partnership with the Mastercard Foundation through the RIZAO Program focuses on empowering young people, especially women and smallholder farmers in Africa's rice sector. The RIZAO Program aims to enhance rice productivity and improve livelihoods by providing youth and farmers with access to training, financial resources, and modern technologies. Through this collaboration, the program supports job creation, agricultural entrepreneurship, and the scaling of climate-smart practices, ensuring that Africa's rice sector remains competitive and sustainable.
- 5.1.3 HealthyDiets4Africa Consortium: AfricaRice is a key member of the 20-member HealthyDiets4Africa consortium, collaborating with international and African partners to promote food system diversification and improve nutrition across eight African countries with support from the EU. As part of this initiative, AfricaRice contributes its expertise in rice-based food systems transformation, helping to identify underutilized species, enhance farm productivity through integrated systems, and assess the nutritional value of different processing methods.
- 5.1.4 GrainPro Inc-AfricaRice partnership: The GrainPro Inc.-AfricaRice partnership is focused on scaling hermetic storage solutions for grain and seed preservation across Africa. Through this collaboration, both organizations aim to improve post-harvest management by promoting the use of GrainPro's hermetic technologies, which help prevent moisture, pests, and contamination from affecting stored grains and seeds.
- 5.1.5 Partnerships for production and marketing of specific AfricaRice innovations: : As part of its scaling strategy, AfricaRice made contractual agreements with private seed enterprises, processors, and equipment manufacturers to produce and market products across the rice value chain. By collaborating with private sector actors, AfricaRice facilitates the mass production and distribution of improved rice varieties, post-harvest processing equipment, and storage technologies. This approach not only ensures that farmers have greater access to high-quality seeds and innovative farming tools but also creates opportunities for local businesses to contribute to agricultural development.
- 5.2 Partners Influencing Policy: AfricaRice maintains strong relationships with Regional Economic Communities (RECs) - AU, ECOWAS, UEMOA, CEEAC - and Regional and Sub Regional Organizations – FARA, CORAF, ASARECA, CARDESA to promote policies that will ensure the transformation of the rice value chain in Africa to contribute towards food and nutrition security in the continent.
- 5.3 Capacity Development for Rice Value Chain Actors: Capacity development continues to constitute a core function of AfricaRice. The Center conducts a series of group trainings aimed at strengthening the skills and capacities of rice value chain actors across various regions in Africa. These capacity development sessions covered the following thematic areas: a) sustainable rice production techniques, b) good agricultural practices, c) mechanization, d) irrigation management, e) pest and disease control, f) climate-smart agriculture, g) business development., and h) data collection, management and analysis. Participants were also trained in the use of innovative digital tools such as RiceAdvice Lite, and in governance and management practices for multi-stakeholder platforms. The training sessions involved over 7,300

participants, including farmer organization leaders, researchers, extension workers, agronomists, and technical experts from member countries of AfricaRice. These capacity-building efforts continue to be central to AfricaRice’s mission to foster innovation and promote sustainable rice production practices across the continent, directly contributing to food security, economic development, and improved livelihoods.

- 5.4 AfricaRice has also continued to host post-graduate students in its laboratories and research fields. A diverse group of graduate students pursuing PhD and MSc degrees from various nationalities were hosted between 2022 and 2024. In 2022, a total of 13 PhD students and 11 MSc students were hosted at AfricaRice representing countries such as Benin, Nigeria, Uganda, Japan, Senegal, Korea, Liberia, and Madagascar. In 2023, the numbers were six PhD students and four MSc students from Benin, Uganda, France, Senegal, Liberia, Madagascar, and South Korea. These students are contributing to the advancement of rice research and development across different regions in Africa and beyond.
- 5.5 Host Country Agreements: No new host country agreement has been established during the period under review. However, management is negotiating with the government of Côte d'Ivoire to update the existing Host Country Agreement, aiming to secure improved privileges.
6. Finance: The Center continues to record positive financial results since 2021 and increasing the number of reserve days. The Revenue budget has been stable. Due to unrelentless efforts of the Management and the Board, the Center was able to record a notable improvement in financial results and growth in reserve days despite various challenges surrounding the funding environment. However, some challenges still persist like low payment of member state contributions, which have negative repercussions on the financial health of the Center.
- 6.1 Resource mobilization: As of October 2024, the Center’s resource mobilization pipeline amounted to a total of US\$ 208 million. The management has successfully mobilized a total of USD 149 million from 2021 to date. Out of the remaining proposals, around USD 42 million are of high probability contracts, i.e., approved but negotiations are still ongoing with the donors. The average duration of projects in the pipeline ranges from 3 to 5 years with around 70% of them being renewed.
- 6.2 Revenue, expenses, net results and reserve days: The annual budget of AfricaRice revenue has remained stable. It picked up from 2021, post COVID-19 effect, and has maintained almost the same level based on the current projection for 2024. Revenue for 2020 (actual), 2021 (actual), 2022 (actual), 2023 (actual), 2024 (projected) stand at US\$ 12.1 million, US\$ 19.4 million, US\$ 21.5 million, US\$ 15.2 million and US\$ 19.6 million, respectively. These figures are lower than their respective approved budgets for each year. Expenses for 2020 (actual), 2021 (actual), and 2022 (actual), 2023 (actual), and 2024 (projected) stand at US\$ 13.2 million, US\$ 18.9 million, US\$ 20.6 million, US\$ 14.9 million, and US\$ 19.9 million, respectively. Net results for 2020 (actual), 2021 (actual), and 2022 (actual), 2023 (actual), 2024 (projected) stand at US\$ (1.0) million, US\$ 0.5 million, US\$ 0.9 million, US\$ 0.3 million and US\$ 0.0 million, respectively. Reserve days are 79 days, 67 days, 80 days and 121 days in 2020, 2021, 2022 and 2023, respectively.

Trend in the Center’s revenue, expenditure, and financial results over five years

Year	Revenue	Expenditure	Result	Comments
2020	12.1	13.2	-1	Actual

2021	19.4	18.9	0.5	Actual
2022	21.5	20.6	0.9	Actual
2023	15.2	14.9	0.3	Actual
2024	19.9	19.9	0.0	Projection

6.3 Member state contributions: Expected member state contributions are estimated at a total of US\$ 0.701 million per annum for 28 member countries. The average amount collected per annum between 2020 and 2024 stands at US\$ 0.285 million. So far in 2024, only US\$ 0.018 million has been collected from one Country. The total amount of member state contributions arrears stands at US\$ 6.8 million. Outstanding contribution to capital development remains US\$ 1,795,917. Since 2009, the average number of member countries that are paying stands at 5.

Trend in the payment of membership dues over the last five year

ITEM	2020	2021	2022	2023	2024	Average
Number of Countries	28	28	28	28		
Estimated million (US\$)	0.701	0.701	0.701	0.701	0.701	
Amount received million (US\$)	0.129	0.236	0.659	0.385	0.018	0.285
Paid by (number of countries)	3	4	6	5	1	
Member state contributions arrears stand at million (US\$)						6.80

6.4 External Audits: Through good financial management practices, the Center continues to get unqualified audit opinions yearly, with all the Internal Control points indicated in management letters fully cleared by 2023.

7. Human Assets of AfricaRice: There has been a significant number of personnel movements driven by the various projects underway. The priority has been to expedite recruitment processes, ensuring that projects are equipped with the necessary human resources as quickly as possible. AfricaRice's current staff comprises of 37 Internationally Recruited Staff (IRS), with a gender distribution of 76% male and 24% female, 185 General Support Staff (GSS), of which 72% are male and 28% female, and 41 Consultants (CON), with a representation

of 83% male and 17% female. In terms of geographic distribution, 62% of total staff members are based in Côte d'Ivoire, followed by 24% in Senegal and 7% in Madagascar (Table 2).

AfricaRice staff distribution

	Total staff		% Total staff/ stations	Total IRS	Total GSS	Total Consultants
	M	F				
Cote d'Ivoire	164	124	62%	28	116	20
Senegal	62	49	24%	2	57	3
Nigeria	7	6	3%	3	0	4
Madagascar	18	9	7%	3	12	3
Uganda	4	2	2%	1	0	3
Home based	8	5	3%	0	0	8
Grand Total	195	68	100%	37	185	41

8. Institutional Risk Management: AfricaRice's risk register is reviewed every two years. The last review of the register was in 2023. The goal of the reviews remains the re-assessment of the effectiveness of mitigation measures being used in managing each of the identified risks, identify/define any new risks along with plausible mitigation measures, estimate the probability and impact of the identified risks, and prioritize risks based on projected impacts. In the process, new risk owners are also identified, and obsolete risks are removed from the register. The topmost risks are reviewed every six months.

8.1 The following topmost risks have been identified and are continuously reviewed and monitored.

Classification of the level of identified risk families

Risk Family	Level
Data risk	Top Risk
Funding risk	Top Risk

8.2 Some of mitigating risk

Infrastructure risk	Top Risk
Financial risk	Top Risk
People and talent risk	Top Risk
Health and safety risk	Middle Risk
Impact delivery risk	Middle Risk
Intellectual assets	Middle Risk
Ethics risk	Lower Risk
Business continuity risk	Lower Risk
Legal and regulatory compliance risk	Lower Risk
Transition implementation risk	Lower Risk

the measures being taken in the topmost risks include

8.2.1 Financial risks: Improvement in financial monitoring and management, including timely project fund disbursement and adjustments to cope with donor variability.

8.2.2 Operational effectiveness and efficiency: Enhancements in

project management: Procedures aimed at enhancing project management to address delays and improve responses that may be associated with changes with project timelines.

- 8.2.3 Data security: Continual strengthening of cybersecurity measured to mitigate rising digital threats.
- 8.2.4 Human resources: Improving resource planning and staff welfare initiatives to boost morale and retain talent.

- 9. Membership of the Association: The membership of the Association remains at 28 since the last COM meeting in 2022 – Benin, Burkina Faso, Cameroun, Chad, Côte d’Ivoire, Egypt, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mozambique, Niger, Nigeria, Uganda, Central Africa Republic, Democratic Republic of Congo, Congo Republic, Rwanda, Senegal, Sierra Leone, and Togo. A continuing drive to increase membership of AfricaRice remains one of the cardinal points of the the Center. Presently, there is increasing indication that the following countries will seek to join AfricaRice: a) Comoros, b) South Africa, c) Tanzania and d) Zimbabwe. These countries have been invited to participate in meetings alongside the 33rd COM and to participate as observers in the proceedings of 33rd COM.
- 10. Governance: AfricaRice continues to maintain its unique dual level of governance with the Council of Ministers as the highest policy organ of the Center, and the Board of Trustees as the oversight body in accordance with the governing instrument of the Center, the AfricaRice Constitution.
 - 10.1 Council of Ministers (COM): The 32nd ordinary session of COM was hosted by Egypt in March 2022 and preceded by a meeting of the National Experts Committee (NEC). The NEC examined all the dossiers meant to be presented to the 32nd COM and made recommendations which were passed as six resolutions by COM. The status of implementation of the six resolutions were presented earlier. It is noteworthy to mention that the meetings of the 32nd COM were held virtually because of issues related to travel restrictions caused by Covid19.
 - 10.2 Recruitment of a new AfricaRice DG and Fifth extraordinary session of the Council of Ministers meeting: The Constitution of AfricaRice requires the Center’s Board of Trustees to conduct a competitive search

and identification of a suitable candidate for the position of Director General when the position becomes vacant. The Board of Trustees then proposes the selected candidate to the Council of Ministers for appointment. On February 21, 2023, the 5th extraordinary session of COM was held under the leadership of the Minister of Agriculture and Livestock of Madagascar, Chairperson of COM. The extraordinary session of COM after examining the report of the AfricaRice Board of Trustees, and upon the recommendation of the NEC, resolved as follows amongst others:

10.2.1 *“Dr Baboucarr Manneh is appointed on a full-time basis to the position of Director General of AfricaRice.”*

10.3 2023 National Experts Committee (NEC): The 2023 National Experts Committee held on Thursday November 2, 2023, examined the status of implementation of the 32nd COM resolutions; the status of implementation of the COM approved Innovative Funding for rice agri-food systems research in Africa; involvement of AfricaRice in member countries projects and proposed a declaration and member states annual contributions for 33rd COM’s endorsement.

11. CGIAR System Organization Issues: Following the endorsement of COM for AfricaRice to join the One CGIAR in September 2020, the AfricaRice Board proposed amendments to the Center’s governance instruments. In March 2022, the 32nd COM endorsed the Board approved amendments to the Constitution.

11.1 Progress on the transition to One CGIAR: Following the amendment of the Center’s governance instrument, i) members of the CGIAR System Board were integrated into the AfricaRice Board of Trustees; ii) the CGIAR Audit Finance and Risk Committee (AFRC) was made to function as the Center’s AFRC. iii) AfricaRice Management worked and has continued to work with colleagues from sister centers in the various One CGIAR committees including the Transition Consultation Forum (TCF) and as a member of the Technical Advisory Group 5 (TAG5), iv) General Assembly of Centers; (v) Senior Management Team; (vi) Global Leadership Team; (vii) ICI Forum meetings on various aspects of the One CGIAR process, notably the following: a) development of the One CGIAR 2030 Research and Innovation strategy, b) development of the One CGIAR Structural Organization, c) designing of One CGIAR Integrated Research Initiatives and d) definition of One CGIAR leadership roles. Other roles being played by the Center include: vi) refining documents that outline the development and management of CGIAR portfolio and Initiative Budgets and the future, and (vii) establishing One CGIAR Unified Pipeline for bilateral projects; (viii) identifying processes and policies that should be integrated, coordinated or left independent across the Centers.

11.2 Alignment of AfricaRice activities with One CGIAR: The AfricaRice-led 2030 Rice Research and Innovation Strategy for Africa was designed to align to the One CGIAR 2030 Strategy. The Center has continued its interactions with various CGIAR entities including the Senior Leadership Team (SLT), Global, Regional, and Science Groups, focused on aligning the AfricaRice’s operations with the One CGIAR – including issues on the implementation of CGIAR research initiatives, project pipeline, FINPLAN for 2023 and 2024, corporate affairs, and on governance matters.

12. Impact of AfricaRice: Between 1991 and 2020, a cumulative value of more than **US\$ 433 million** was invested in R4D activities carried out by AfricaRice and its partners. Annual investments of around **US\$ 10 million** almost doubled in the aftermath of the 2008 food crisis to reach a peak of **US\$ 30 million** in 2013. Over the past five decades, most of the investment (around 65%) has been used to develop and disseminate innovative technologies and knowledge to boost local production, improve rice quality and competitiveness, and address the gap between supply and demand for domestic rice. Economists have proven that **US\$ 3.49** is generated for every dollar invested in research for development through AfricaRice.

12.1 Specifically, some of the impacts being made by the Center in the countries include:

- 12.1.1 Impact of ARICA 6 rice variety has been shown to not only tolerate iron toxicity but increase yield by 330 kg/ha in Guinea.
 - 12.1.2 Impact of drought tolerant varieties produced by the Center have proven to also ensure increased yields up to 790 kg/ha in Benin, Madagascar and Nigeria.
 - 12.1.3 ASI thresher introduced initially in 1999 in Senegal and 2015 in Nigeria has continued to facilitate post-harvest value chain activities. Rice processors owning ASI threshers have been found to be more likely to be successful in obtaining credit facilities from different financing institutions.
 - 12.1.4 Impact of the GEM - “Grain quality enhancer, Energy-efficient and durable Material” (GEM) allows the processing of quality rice with better physical and nutritional properties compared to traditional systems. The final products include the following characteristics – less broken grains, more nutritional rice and low glycemic index. Additionally, the impact of the GEM system is estimated at 14.38 kg of milled rice per 100 kg of paddy (21.46%), equivalent to US\$ 7.25 of additional income (17.77%) for the miller.
13. Challenges: Some of the challenges being faced by AfricaRice relative to food agri- systems development include the climate crisis. The latter affects production and productivity. Conflicts in parts of the region and internationally also have effects on supply chains; Funding is needed to implement the 2030 Strategy to ensure a significant contribution of the Center to a more sustainable rice agri-food system on the continent.
- 13.1 Collection of membership annual dues: AfricaRice continues to face the perennial challenge of collecting arrears in membership dues, which have always been a subject of COM meetings. The member countries of AfricaRice resolved during the 31st COM meeting (September 2018) held in Senegal that all members should pay up their arrears by 2019. Despite continuous reminders to AfricaRice member countries, a total of US\$ 6,119,109 of arrears in annual contributions is still owed by member States to AfricaRice as the of end of 2023.
 - 13.2 Challenges of receiving prompt feedback from countries: AfricaRice tries as much as possible to respond to requests from countries to the best of the Center’s ability and availability of resources for the request being made to the Center. However, receiving prompt feedback from countries, as may be desired, remains a challenge.
14. Outlook for rice-based food systems in Africa: AfricaRice will continue pursuing its strategic trajectory aimed at transforming the continent’s rice-based agri-food systems for food and nutrition security in Africa as enshrined the 2030 rice research and innovation strategy for Africa. To attain the Center’s mission which is “deliver rice-based innovations and transformed rice-based agri-food systems that contribute to the transformation of food, land and water systems in the face of climate change” the Center aims at the following:
- 14.1 Striving to achieve surplus budgets that will allow the Center to increase its reserves and maintain a balanced state, to carry out quality research for development activities.
 - 14.2 Progressively build it revenue base to attain an annual budget of at least US\$ 40 million by 2028.
 - 14.3 Consolidating partnership mechanisms involving stakeholders from the continent’s universities, advanced centers of excellence from the global north and from the global south with the aim of mobilizing global science for the enhancement of outcomes of research o rice in Africa and to ensure rice self-sufficiency.

- 14.4 Engage with the private sector aimed at more effective uptake of outputs from research to ensure competitiveness of domestic rice crop and derivable products.
- 14.5 Capacity development is one of the core functions of AfricaRice aimed at ensuring that member countries of AfricaRice have the requisite capacity to respond to the continuously changing business environment. The Capacity Building Unit will be strengthened to ensure that this core function operates as described in. In the same realm, the Center's Regional Training Center at St Louis, Senegal, would be made fully operational.
15. Conclusions: The following salient issues could be raised in the concluding part of this biennial to the 33rd COM:
- 15.1 The member states of AfricaRice have continued to indicate with great enthusiasm their rightful ownership of the Center. However, the decline in the member states honoring of their Constitutional obligation of paying the annual membership dues constitutes a concern. AfricaRice is owed a total of US\$ 6,119,109 by its member states. This debt needs to be paid by the concerned member states of AfricaRice. A one-off recovery of this owed amount would a long way consolidating the financial stability of the Center, enhance the confidence of ownership of the Center by member states given that some financial partners grapple to understand why such dues are not being paid states.
- 15.2 The 2030 Rice Research and Innovation Strategy whose development was led by AfricaRice constitutes a framework in which stakeholders researching and or developing innovations on rice on the African continent are required to focus on as the main cardinal point for their work to ensure a better coherence and coordinated drive to a attain the common goal of rice self-sufficiency on the continent as desired by the member countries.
- 15.3 Although some significant progress is being made by some countries such as in Egypt, Tanzania, Uganda, Madagascar, Mali and Democratic Republic of Congo in rice self-sufficiency with an average of 80% and above, the average rice self-sufficiency for the African continent remains at 58% at the end of 2023. This is an indication of the need for increased investments in research and increased private sector involvement in production. Public sector support by way of subsidizing inputs needed in production and other in other segments of the crop value chain.