icipe

e-bulletin

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icipe BY NUMBERS *(All figures are from January - October 2024)*

660,000
media mentions in traditional and social media

212
peer-reviewed journal articles, and 20 others published in books and other publications

3,500
people participating in-person and virtually in the Global Bioeconomy Summit co-hosted by *icipe*

>153
Training events, involving 34,751 participants (56% women)

500
The 6th PASET Forum and Rsif Annual Conference, co-hosted with the Government of Kenya, held in Nairobi, Kenya in April 2024

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FOREWORD

Prof. Kym Anderson
Chair, *icipe* Governing Council

Dear Friends and Colleagues,

We are very pleased to present this bumper issue of the *icipe* newsletter, which curates our activity so far in what is a transitional year.

In January 2024, *icipe* entered a new leadership phase as Dr Abdou Tenkouano assumed office as the fifth Director General (DG) of *icipe*. On 2-3 June 2024, the Centre convened an Inaugural Science Retreat, whose objectives were: to reflect on *icipe's* core science capabilities in delivering impact as envisaged in the *V&S 2021 – 2025* and beyond; and to generate ideas on ways to strengthen strategic partnerships so as to upscale the Centre's scientific outputs and innovations.

Over the past several months, we have commenced the implementation of the key outcomes of the Retreat. This process includes new appointments, highlighted under the Staff News section. Several of these positions are aligned to a new research for development (R4D) structure, which includes cross-cutting thematic research programmes, and new platforms that unify the Centre's research support units. The rest of the appointments help to close capacity gaps in R4D, as well as in the finance and administration functions of the Centre.

To boost partnerships and visibility, we have intensified a strategy of "Come see; Go tell", leading to numerous visits to *icipe* campuses and field sites by donors, development partners and collaborators. Meanwhile, *icipe* senior management and teams have been active in visiting partners and taking part in numerous local, regional and international fora. Worth highlighting is *icipe*'s presence in two key events: the Africa Fertilizer and Soil Health Summit (Nairobi, Kenya 7 – 9 May 2024), and the Africa Food Systems Forum 2024, (Kigali, Rwanda, 2 – 6 September 2024) (see Institutional News and Scenes section).

This newsletter also consists of our regular sections including Research Highlights, where we present project progress and milestones, as well as new initiatives. The Selected Recent Publications section provides a snapshot of the world-class knowledge generated at *icipe*. Particularly exciting is our discovery of a mealworm that can degrade plastic, a potential game changer in tackling this menace.

The Newsmakers and Recently Funded sections round up the awards and recognitions, and new investments to *icipe*.

Through the BioInnovate Africa Programme, *icipe* is co-hosting the Global Bioeconomy Summit, to be held in Nairobi, Kenya, 23 – 24 October 2024. This is the first time that the event is being held in Africa. The DG's Thought Leadership column reflects on this milestone, which is both necessary and timely.

In the Capacity Building and Institutional Development section, we report on *icipe's* revitalised collaboration with TWAS, The World Academy of Sciences. And we bring you heartwarming images of the annual Cultural Day, led by *icipe* scholars, which transformed our Centre into a mosaic of beauty and creativity that reflects our diverse heritage.

Under the Regional Scholarship and Innovation Fund (Rsif) section, we spotlight the 6th Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET) Forum and the Rsif Annual Conference, held in Nairobi, Kenya, from 23 – 25 April 2024. We also present the emerging science, technology and innovation capacity, with a special focus on the reciprocal relationship between Rsif and Nigeria.

We hope you enjoy these and many more stories in this newsletter.

GLOBAL BIOECONOMY SUMMIT COMES TO AFRICA

Dr Abdou Tenkouano
Director General, *icipe*

We believe that the coming of the Global Bioeconomy Summit to Africa is timely, as it is necessary.

This year, the Global Bioeconomy Summit (GBS), will be held in Nairobi, Kenya, marking the first time that the event is convened outside Europe. Scheduled for 23 – 24 October, the planning of the GBS 2024 is supported by the International Advisory Council on Global Bioeconomy (IACGB). *icipe*, through BioInnovate Africa Programme, is honoured to co-host the Summit, alongside the East African Science and Technology Commission (EASTECO), and the Stockholm Environment Institute (SEI).

Started in 2015, the GBS series brings together experts and stakeholders from all hemispheres and backgrounds, representing the interdisciplinary and diverse features of the bioeconomy. The forum fosters dialogue between actors to promote sharing of best practices and to identify opportunities for global innovation and collaboration.

Across the world, the ideal of bioeconomy is rapidly emerging as a growth pathway. No matter the definition, it is clear that bioeconomy can enable us to make the most of natural resources, thus creating a better ecosystem to address some of the world's biggest challenges. These obstacles include food and nutritional security, climate change, job creation, health, renewable energy and environmental resilience. It is also evident that, to gain a competitive advantage, countries and regions must harness the potential of a bioeconomy early. Also, to derive optimum societal and global value from the bioeconomy, partnerships are necessary across scientific disciplines, countries, regions and the globe.

Against this background, Africa must take a central place in the bioeconomy. The continent has an edge due to its rich biodiversity – one of the most diverse on Earth, which includes a wide array of ecosystems, species and genetic resources. In addition, Africa has 60% of the global arable land; a large and highly talented youth demography (70% of the entire polutation); and a good labour market.

Indeed, the ReSAKSS 2024 Annual Trends and Outlook Report (ATOR), titled 'Advancing the Climate and Bioeconomy Agenda in Africa for Resilient and Sustainable Agrifood Systems', calls for unity among African leaders, policymakers and global partners, to leverage Africa's vast renewable biological resources. This approach will drive innovation, upscale investments in new technologies, and support upskilling to drive a bioeconomy transition while adapting to climate change.

Adopting a bioeconomy development model requires various components such as scientific and technical capacity to produce and harness biosciences knowledge, generation of technologies and bioinnovations, transfer and uptake.

These elements will lead to stronger innovation ecosystems in Africa, unlocking gender responsive opportunities for all sections of society.

What is the Bioeconomy?

"The production, use, conservation and regeneration of biological resources to provide sustainable solutions (including information, products, processes and services) in and across all economic sectors" - IACGB

"The use of scientific knowledge to add social and economic value to biological resources in a sustainable way" - icipe

icipe CONTRIBUTION TO THE BIOECONOMY IN AFRICA

The vision of a bioeconomy in Africa is one that we at *icipe* embrace and support. We are helping to tackle crop pests and disease vectors, poor soils and climate change, through knowledge-led, nature-based, climate-smart solutions. These innovations consist of renewable resources: use of organisms like predators and parasitoids; biopesticides and botanicals; bait sprays; and naturally-derived attractants and repellents.

Our flagships include agroecological innovations such as the push-pull technology, which exploits insect-plant, insect-insect interactions, and is being integrated with black soldier fly farming, to create resilient, circular and regenerative mixed cereal-livestock systems. We are also developing a banana fibre paper technology to control nematodes and other soil dwelling crops. Also, *icipe* helps to conserve, protect, exploit and regenerate Africa's insect biodiversity. We are designing inclusive value chains for high-quality honeybee and stingless bee, honey and hive products.

These initiatives are supported by certifications for organic honey, fair trade and geographical indication. We are also integrating bee ecosystem services (like pollination) into agricultural systems. Additionally, *icipe* has created vibrant silk farming value chains that are producing authentic African inspired fabrics, and value-added products for food and nutritional security, health, food systems and renewable energy. *icipe*'s research activities promote equality of opportunity and outcomes for women, men and the youth, through engendered pathways of technology development and adoption; capacity development; and policy influence.

THOUGHT LEADERSHIP COLUMN BY THE DIRECTOR GENERAL

The *icipe* insects for food, feed and other uses programme is a stand-out example of our bioeconomy contribution. We are leading the way in translating the reality of insects to reshape the food system into a more sustainable and vibrant circular economy. Our innovations include use of insects for food-food biofortification; as alternative, more affordable, nutritious protein, healthier options for animal feed, thus unlocking the potential of the livestock, fish and poultry; effective recycling of organic wastes into high-value organic fertilisers that improve soil health and crop productivity, and help to control pests; and as a source pharmaceuticals (including antibiotics), cooking and cosmetic oils.

icipe's most explicit contribution to the bioeconomy is through the management of BioInnovate Africa Programme. Supported by the Swedish International Development Cooperation Agency (Sida), this is one of the largest regional bioscience research and innovation-driven initiatives in the continent.

BioInnovate Africa has partnerships with over 1,000 scientists and innovators in 200 organisations in eight countries: Burundi, Ethiopia, Democratic Republic of the Congo (DRC), Kenya, Rwanda, South Sudan, Tanzania and Uganda. A total of 25 innovation projects have been supported, with 17 products successfully tested, validated and launched in the market.

Moreover, BioInnovate Africa helped to develop the eastern Africa Regional Bioeconomy Strategy, the only such plan of its kind in Africa, and the second globally, after the European Union.

The Programme offers valuable lessons in tackling key constraints in innovation systems, and is highly regarded across Africa, and indeed in the world, as a leader in mainstreaming biosciences as a sustainable pathway for development.

WHAT TO EXPECT

The GBS 2024 will emphasise resilient and sustainable food systems, bioeconomy as a key model for sustainable transition to less fossil dependent economies, conservation of biodiversity, and using innovation as a driver for new economic opportunities, especially jobs for the youth.

We will showcase accomplishments from across the world, and the traction and momentum of bioeconomy across the world.

The Summit will provide a platform to discuss global bioeconomy issues in an inclusive manner; foster communication and understanding of global bioeconomy; integrate bioeconomy issues in global discussions on innovation, climate, biodiversity and achieving the UN Sustainable Development Goals (SDGs); and provide guidelines and recommendations for the way forward.

THIS JUST IN...

COMING SOON: *icipe* SCIENCE WEEK

One of the recommendations of the Mbita Science Retreat (3-4 June 2024), was the establishment of an annual *icipe* Science Week, to be inaugurated during the *icipe* Governing Council meeting (11 – 15 November 2024). Scheduled for 11 November, 8 - 2 pm, the event will celebrate *icipe*'s research and development activities, impacts and the people behind it; demystify insect science, engage, rejuvenate and inspire our teams, partners and stakeholders; demonstrate contribution to insect science and its impact on people's daily lives. The theme of the event is: 'Journeys through the intricacies of insect science'.

icipe DG APPOINTED TO WAF COUNCIL

Dr Tenkouano has been nominated to the Council of the World Agriculture Forum (WAF), a newly launched body that is dedicated to advancing agricultural development on a worldwide scale. The WAF has been conceived as a neutral, global platform for nations, industries, experts and institutions to converge, collaborate and catalyze sustainable agricultural development, fostering a culture of innovation, inclusivity, and collective problem-solving. Following extensive and in-depth consultations with experts and global leaders, a consensus was reached to establish WAF, modelled on the pattern of the World Economic Forum, to address the pressing needs and opportunities in the agricultural sector. The initiative brings together prominent thought leaders, innovators, policymakers, business executives, and heads of global institutions in the agricultural sector to address critical issues related to food and nutrition security, sustainable practices, policy, technology and trade agenda.

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NEWSMAKERS

STAFF

- **Dennis Beesigamukama**, a Postdoctoral Fellow, has been named the 2024 recipient of the Norman E. Borlaug Award for Field Research and Application, endowed by The Rockefeller Foundation. He is recognised for his role in the development of novel, low-cost technologies for recycling organic waste into nutrient-rich, disease- and pest-suppressing, insect-frass organic fertilisers. Read More
- **Abdou Tenkouano**, *icipe* Director General, who is a former Board Member of the Forum for Agricultural Research in Africa (FARA) and former Executive Director, CORAF, was awarded a certificate of gratitude by a delegation of African Agricultural Research, Innovation and Education Institutions (AARIEI) in recognition of his service and dedication to FARA and African agriculture.
- **Sunday Ekesi**, Interim Deputy Director General, Research and Partnerships (iDDG, R&P) has been appointed Adjunct Committee Member, International Congress of Entomology (ICE); Fellow of The World Academy of Sciences (FTWAS), and Extraordinary Professor, University of Pretoria, South Africa.
- **Menale Kassie**, Head, Social Science and Impact Assessment Unit (SSIAU), has been appointed by the African Academy of Sciences to serve in the Membership Advisory Committee for the Cultural Sciences, Humanities and Social Sciences.
- **Komivi Akutse**, Senior Scientist, Plant Health Theme, has been appointed Extraordinary Professor, North-West University, South Africa.
- The Kenya Education Network (KENET) has honoured three *icipe* scientists, in recognition of their Scival Scopus ranking, based on the number of publications by the scientists in agricultural and biological sciences, between 2018-2023. The scientists are: Sunday Ekesi, iDDG, R&P; Samira Mohamed, Principal Scientist, Plant Health Theme; and Sevgan Subramanian, Head, Environmental Health Theme.
- **Tobias Landmann** and the Data Management, Modelling and Geo-Information (DMMG) Unit team received the Food and Agriculture Organisation of the United Nations (FAO) award on 'Agrifood System Innovations and Stories of Capacity Development for Innovation' for the West and Central Africa (WCA) digital advisory project funded by the CGIAR.
- **Segenet Kelemu**, Emeritus Fellow, was featured in an eBook on Women in Science published on 9 February 2024 by Technology Networks on the International Day of Women and Girls in Science (11 February 2024); and in the *Africa Report* as one of Top 50 Influential Africans: The Brains.

SCHOLARS

- Rehema Gwokyalya (Uganda) PhD scholar, received the Best Presenter (Oral) award for the women scientists at ICE.
- Two early career *icipe* PhD students (below) received travel sponsorship grants from Elsevier, which will enable them to attend suitable conferences:
  - **Franck Bruno Tonle** (Cameroon), PhD scholar, registered at University of Dschang, Cameroon
  - **Peter Kimani Muchina** (Kenya), PhD scholar, registered at the Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya

INSTITUTIONAL NEWS

Abdou Tenkouano assumed office as the fifth Director General of *icipe*, on 1 January 2024. He has a distinguished career spanning more than three decades in agricultural research, supported by immense scientific knowledge production, technology development and dissemination. He took over from Segenet Kelemu, who held the Centre's helm from November 2013 – 31 December 2023.

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Angshu Sengupta joined *icipe* as Interim Deputy Director General, Corporate Services, effective 15 April 2024. He is a seasoned senior executive with extensive experience in the areas of finance, operations, strategy, project management and transformation. Previously, he was the Deputy Director General, Corporate Services, at the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) in India.

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Sunday Ekesi assumed the position of Interim Deputy Director General, Research for Development in April 2024. Previously, he was the Head, Capacity Building and Integrated Sciences. One of *icipe*'s homegrown scientific talents, he is an entomologist and integrated pest management (IPM) expert of global repute, and he has held a range of leadership and management positions at the Centre.

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icipe @AFSHS2024

icipe participated in a significant manner, in the Africa Fertilizer and Soil Health Summit, held in Nairobi, Kenya from 7 – 9 May 2024. The summit deliberated on Africa's recent widespread decades-long decline in soil quality of farmland – a phenomenon that continues today and negatively impacts the agricultural production capacity and food security in the continent. The Centre participated in a session convened by the European Commission (DG INTPA) and IFAD titled: 'Emerging Opportunities with Organic Bio-Fertilizers for Soil Health in Africa. Together with The Rockefeller Foundation and the World Agroforestry Centre (ICRAF), we organized a side event titled: Agroecological and Regenerative Innovations for Soil Health and Sustainable Production. And we also had an exhibition booth a wonderful site of interaction, learning and enthusiasm on our soil health activities and innovations.

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icipe and The Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), jointly known as The Alliance; have signed a Memorandum of Understanding (MoU).

This milestone creates a framework for the comparative advantages of our two organizations in science, services, locations and operational strategies, to boost climate action, sustainable agriculture, scaling of innovations and technologies and expansion of geographical reach.

WATCH VIDEO

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Global Bioeconomy Summit 2024

Between 23 – 24 October 2024, the Global Bioeconomy Summit (GBS), a high- level, international gathering of leaders of bioeconomy, will be hosted in Nairobi, Kenya, marking the first-time that the event is being held outside Europe.

The planning of the GBS 2024 is supported by the International Advisory Council on Global Bioeconomy (IACGB). GBS 2024 is hosted by *icipe*, the East African Science and Technology Commission (EASTECO), and the Stockholm Environment Institute (SEI).

The GBS 2024 is sponsored by: IKEA Foundation, University of Bonn Seeding, The Future Foundation, JRS Biodiversity Foundation, Schmidt Sciences, French National Research Institute for Sustainable Development (IRD), European Commission, BioInnovation Institute, AGRA and Circular Bio-based Europe Joint Undertaking (CBE JU). More than 500 people from around the globe are expected to participate in person and up to 3000 are expected to follow the proceedings via a live stream. Registration is ongoing at the official Summit website:

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icipe @ #AFSForum2024

icipe participated in the Africa Food Systems Forum 2024, held in Kigali, Rwanda from 2 – 6 September 2024. In collaboration with the Rockefeller Foundation, Inter-African Phytosanitary Council, Rwanda Standards Board, Rwanda Black Soldier Fly Farmers Association and InsectiPro Ltd, Kenya, we held a side event on insect farming and insect-based enterprises. The session deliberated on the shifting narrative and reality surrounding insects and explored how these remarkable creatures are driving transformative changes in African food systems, while creating gender responsive, ingenious employment and income generation opportunities. We also discussed role of diverse stakeholders including researchers, governments, development partners and the private sector in advancing the sector.

icipe Annual Report 2023

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WATCH VIDEO

For more information on external visits by *icipe* as well as visitors to the Centre, see pages 8—11

On 2 and 3 June 2024, *icipe* convened an **Inaugural Science Retreat**, to: reflect on science capabilities to deliver impact; and ways for strategic partnerships to scale outputs and innovations. Key outcomes: Re-positioning of *icipe* in the Delivery and Development space; 4 cross- cutting thematic research programmes (TRPs): Agriculture and Climate Change; Biodiversity and Environment and Enabling Policies and Impact; global health as a separate TRP; unifying of research support units into 3 platforms: Integrated Data and Analytics; Integrated Biosciences; and Capacity and Institutional Development; and urgency for *icipe* to expand reach and contribution regionally within Africa and globally, and key niche areas.

Pest management in South Sudan

icipe was subcontracted by FAO to provide service on Capacity building, Policy Review and Plant Protection Research, for the Directorate of Plant Protection of the Ministry of Agriculture and Food Security of South Sudan. Initially, the main focus was on the control of the desert locust, which invaded the country in 2020. This was in line with the Emergency Locust Response Project multi-phase programmatic approach (ELRP-MPA). Further research activities focused on key crop pests such as fruit fly, fall armyworm, the tomato leafminer and mealybug. The next phase of our partnership with FAO will advance research on these pests in South Sudan.

Seminal One Health initiative

With the support of Sida, *icipe* and partners have launched an initiative known as 'Accelerating One Health interventions for tackling pandemics at source'. The initiative will leverage on existing expertise and partnerships in Ethiopia and Kenya to respond to pest and diseases developmental challenges through integrated system thinking. Accelerate One-Health project is aligned with Sida's five perspectives of: contribution to people living in poverty; realisation of human rights; promoting gender equality and empowerment of women; environment and climate change; and contributing to conflict resolution and peace building.

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New grant for malaria transmission blocking research

Researchers from *icipe* have been awarded a USD 3 million grant by Open Philanthropy (www.openphilanthropy.org) to advance pioneering research on a microbe that is capable of blocking transmission of the disease from mosquitoes to people, as an effective and sustainable way to control malaria.

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Insects for the Green Economy

On 28 – 29 February 2024, *icipe* and the partners of the HEALTHYNSECT and FLYgene, funded by DANIDA, organised the 'Insects for the Green Economy' conference, held at the African Institute for Capacity Development (AICAD), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Kenya. The theme was sustainable food systems and livelihoods in Africa, aiming to explore into the multifaceted roles of insects in driving food security, economic growth, environmental sustainability, and innovation in context of African continent.

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Gender training workshop

In June, *icipe* and partners held a Gender Training Workshop of the Agroecological Innovations for Smallholder Pest Management (EcoPM) project, which is testing and locally adapting the Centre's fall armyworm control packages. EcoPM is supported by the Fund for the Promotion of Innovation in Agriculture (i4Ag), implemented by GIZ on behalf of BMZ. EcoPM is led by *icipe*, with partners: National Agricultural Research Organization (NARO), Uganda; Zambia Agricultural Research Institute (ZARI); and Total LandCare, Malawi. It aims to directly benefit 300,000 farmers (30% women). The gender training was attended by farmers, researchers, extension officers, private sector partners, communicators, NGOs and gender experts. We unpacked gender concepts; importance of gender in agriculture; tools and strategies to mainstream gender; and genderresponsive communication and outreach.

GI for Mau Forest Honey

icipe in partnership with the French Agricultural Research Centre for International Development (CIRAD) and Agence française de développement (AFD) through the Geographical Indications support fund, and cooperatives and producers in Kenya, have launched an initiative to create a geographical indication (GI) for the honey produced in Mau Forest. A globally recognised key biodiversity area and the largest remaining indigenous montane forest in East Africa, the Mau rain forest complex is one of Kenya's five water towers. Many communities in the region have a symbiotic relationship with the Mau Forest ecosystem and are involved in honey production.

Long-term system trials

Since 2007, *icipe* and the Research Institute of Organic Agriculture (FiBL), Switzerland, and partners who include the Kenya Agricultural and Livestock Research Organisation (KALRO), among others, have been implementing a long-term farming systems field trial (SysCom project) in two counties in Kenya. The aim is to assess productivity, profitability and sustainability of organic and conventional farming systems in the tropics. At a recent stakeholder workshop, the partners presented findings over the past 15 years, including insights of organic and conventional farming systems regarding their agronomic, economic and ecological performance under tropical farming conditions. A SysCom policy dossier: 'Cultivating change with agroecology and organic agriculture in the tropics' and policy factsheet summarise evidence from the SysCom trials.

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New support for Kakamega Forest

With the support of GIZ, *icipe*, in partnership with the Kenya Forest Service, have launched the Kakamega Forest Stingless Bee Research Station and Honey Marketplace. This milestone is remarkable, as it provides the first ever national training facility on stingless bees in Kenya. It also reinvigorates *icipe*'s support for the conservation of the Kakamega Forest ecosystem, a UNESCO world heritage site, the only tropical rainforest in the country, and the last remnant of the Guineo-Congolian rainforest that once spanned the continent. The milestone is aligned to the government-led 'Kakamega Forest Strategic Ecosystem Management Plan 2015 – 2040', which recognises *icipe* as a critical partner.

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Insect-based innovations awareness in Asia-Pacific

Between 26 June – 5 July, with the support of ACIAR, our team travelled to the Asia-Pacific island nations including Papua New Guinea, Vanuatu and Fiji, to raise awareness on the insect-based innovations, and potential collaboration for insect farming for feed, fertiliser and waste management. They also gave a keynote address at the University of Science and Technology, Papua New Guinea.

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WATCH VIDEO

Push-Pull CoP

icipe with the support of Biovision Foundation for Ecological Development, Switzerland, IKEA Foundation and the European Union's Horizon 2020 (through UPSCALE project), have launched a Push-Pull agroecology Community of Practice (CoP). It will expand applicability of the push-pull technology and other agroecological innovations to leverage their environmental and climate resilience benefits to smallholder farmers. The CoP will foster engendered empowerment and engagement, new knowledge of integrated agricultural as well as ecological practices to improve crop and animal productivity. This will help to restore and better manage ecosystems, and resilient agrifood

We were pleased to welcome deaf members of the Chemichemi Foundation, Kenya, for training on black soldier fly rearing and enterprises. We reaffirmed that B S F (black soldier fly farming), in any language, means opportunities for all people. We look forward to witnessing and supporting their journey in this exciting venture.

WATCH VIDEO

MORE YOUNG ENTREPRENEURS IN SILK AND HONEY (MOYESH) PROJECT

The MOYESH project was launched in 2019 by the Mastercard Foundation and *icipe*, in partnership with the Ethiopia Jobs Creation Commission (JCC). This five-year initiative aims to see 100,000 young people (60% of them women), in Ethiopia, secure dignified and fulfilling jobs along the honey and silk value chains.

IN NUMBERS

- 166,285 (61.2% female) **young people recruited**, trained, and provided with business starter kits for beekeeping and sericulture.
- 134,089 (61.1% female) **direct jobs created** through input and service provider small enterprises.
- 954,075 **indirect jobs created** for young people.
- 4,040 tonnes of **honey**, 14.33 tonnes of **Eri silk cocoons**, and 0.22 tonnes of **silk yarn produced and sold**, generating ETB 1,767 million (USD 31 million).
- ETB 124.16 million (USD 2.23 million) income **earned** from complementary businesses.
- 93% of the surveyed reported having gained **additional skills.**
- 91% of the surveyed reported having improved **entrepreneurship skills.**

BOOSTING B2B

The MOYESH project continues to boost business-to-business (B2B) partnerships with exporters and local honey traders for contractual supply of honey by the youth beekeepers' enterprises. In Oromia Region, 84 large traders and exporters purchased 187,387 kg of honey from our youth beekeepers, who generated ETB 88.2 million (USD 1.575 million). A total of 27 new local traders were linked with the youth enterprises and their marketing cooperatives. Four large traders and four large buyers bought 37,080 kg of table honey from the Southern Nations, Nationalities, and Peoples' Region. The youth partners generated ETB 13.97 million (USD 249,464). We are also exploring export market opportunities to the Middle East (Kuwait) through engagement of private sector partner (Green Face Trading PLC).

BIOINNOVATE AFRICA PROGRAMME

TEA COHORT IV

BioInnovate Africa and the Thayer School of Engineering, Dartmouth College, USA, are building capacity for technoeconomic analysis (TEA) in eastern Africa through a six-month tailor-made online course. The fourth cohort, consisting of eight students, undertook their studies from January – June 2024. They are: Emice Kioko, Kenyatta University; Seth Mutuba, University of Nairobi; Michael Magiri, Meru University of Science and Technology; Vincent Onyango and Eric Kariuki, Machakos University; and Gideon Kirui, from Jomo Kenyatta University of Agriculture and Technology, all in Kenya; as well as Cornelius Chen-Chen, University of Cape Town, South Africa and Kevin Nabukeera, Makerere University (both students are from Uganda).The skills acquired will enable the students to conduct TEA on selected BioInnovate Africa projects. They will also contribute to the design of bioentreprenuership projects in their home countries and institutions. The expansion of TEA capabilities in eastern Africa will facilitate the quantification of BioInnovate Africa supported initiatives. It will also boost the ability of scientists, innovators, policymakers, and other partners in Africa to strengthen infrastructure, financing, policies and standards for a more conducive innovation environment.

AFRICA WOMEN SCIENTISTS FELLOWSHIPS

In March 2024, 11 mid-career women scientists from eastern Africa commenced their journey as BioInnovate Africa Women Fellows. Their fellowship will continue until August 2025. The Fellowships aim to strengthen the participation of African women scientists in the emerging bioeconomy in Africa, through research stints outside their home country. Fellows work closely with BioInnovate Africa project implementing partners in the eight eastern African countries of Burundi, Ethiopia, Democratic Republic of the Congo (DRC), Kenya, Rwanda, South Sudan, Tanzania, and Uganda. Their work will focus on value addition to agroproduce and related bioresources, agro- and biowaste conversion, and biobased healthcare products and services.

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PASET Forum and Rsif Conference

The 6th Partnership for Skills in Applied Sciences, Engineering, and Technology (PASET) Forum and the Rsif Annual Conference, co-hosted with the Government of Kenya, held in Nairobi, Kenya, from 23 – 25 April 2024 concluded positively, charting a course towards a more skilled and industrialized Africa. This event brought together delegates from across the continent, united by a common vision: leveraging Technical and Vocational Education and Training (TVET) to drive Africa's industrial revolution. Celebrating a decade of PASET's achievements, the Forum highlighted PASET's success in training a new generation of scholars to address Africa's challenges. With 11-member countries on board, a call for broader participation was made, emphasizing the need for more African nations to join this transformative initiative.

Discussions underscored the essential role of TVET alongside the doctoral programmes led by the Rsif. The Forum emphasized that Africa's prosperity depends on investing in human capital to create skilled professionals capable of impactful research. It ignited a spirit of collaboration and inspired delegates with a mission to build a skilled and thriving Africa for generations to come.

Doctoral training impact

Between January – June 2024, 18 Rsif PhD scholars completed their studies, contributing to the Fund's vision of a sustainable pan-African science base for critical challenges, while advancing global knowledge and scientific knowledge. Read more about selected examples and their science and innovation breakthroughs as well as 'where are they now'.

The Accelerating inclusive green growth through agri-based digital innovation in West Africa (AGriDI) Annual Implementers Forum: 9—13 September 2024, in Abuja, Nigeria, marking the conclusion of the AGriDI project, which has advanced digital innovation for sustainable agriculture in West Africa. Outcomes of the forum include sustainability plans, case studies, and future initiatives for digital agriculture.

A symposium at the 13th African Crop Science Society Conference: 16—19 September 2024 in Mozambique, focused on enhancing PhD programmes in agri-food systems and climate action.

Dr Rachida Mamade, Director, Ministry of Science, Technology and Higher Education, Mozambique during the opening session of the symposium.

IN FOCUS: NIGERIA AND RSIF

- In 2022, the Government of Nigeria contributed USD 4 million to Rsif.
- There are 44 Rsif doctoral scholars (11 of them women) from Nigeria registered in 13 Rsif African Host Universities (AHUs).
- The African University of Science and Technology (AUST) in Abuja, Bayero University Kano (BUK), and University of Port Harcourt (UniPort), are Rsif AHUs hosting 46 Rsif PhD students from 11 countries (37% of them women).
- 42 peer-reviewed journal articles have been published by Rsif students hosted in Nigeria.

10 Rsif funded research and innovation projects are under implementation in Nigeria.

7 projects have been awarded to the Rsif AHUs in Nigeria to support: the innovation capacity of AUSTInspire; sustainable food security innovations in the drylands; new pathways for community flood risk communication; institutional infrastructure for an innovation ecosystem; development of orange mesocarp and red onion skin into multifunctional materials for oilfield applications; large- scale manufacturing of personal protective equipment for the medical industry in Nigeria and across Africa via 3D printing; characterisation of cleaved baryte surface- interfaces and computational study of interactions of baryte ore-based middling particles for mineral liberation and recovery.

3 projects in Nigeria are being supported through the AGriDI project: digital soil mapping in southwest Nigeria using artificial intelligence, led by the Federal University of Agriculture, Abeokuta; improving women's opportunities to access microfinance for solar-powered agro-processing equipment, led by Sosai Renewable Energies Company; and digitalisation of alternate wetting and drying systems of rice production in Nigeria, led by the University of Nigeria Nsukka.

CAPACITY BUILDING AND INSTITUTIONAL DEVELOPMENT

***icipe* has revitalized the Centre's collaboration with TWAS, The World Academy of Sciences. In 2024, through TWAS Fellowships, we have welcomed several researchers at various points of their professional and academic journeys. The fellows include:**

Akua Konadu Antwi-Agyakwa (Ghana), Research Scientist, Cocoa Research Institute of Ghana(CRIG), through the TWAS Seed Grant for New African Principal Investigators (TWAS SG- NAPI). Launched by TWAS and the German Federal Ministry of Education and Research (BMBF), the programmes help to strengthen the capacity of African countries lagging in science and technology. They are aimed at young scientists who are becoming established in their country or are about to return home to an academic position.

Alpha Kargbo (The Gambia), Biology Lecturer, University of The Gambia, through the UNESCO-TWAS Fellow for research and advanced training. The fellowships enable young scientists in developing countries to spend three to 12 months at a research institution in a developing country other than their own. The purpose is to enhance the research capacity of promising scientists, especially those at the beginning of their research career, helping them to foster links for further collaboration.

Read More

***icipe* is also partnering with UNESCO-TWAS in the PhD Climate Research Programme funded by the Swedish International Development Cooperation Agency (Sida). The Centre is currently hosting three PhD scholars through the scheme. They are:**

Aissata Sanogo (Mali)
(Pursuing registration) at University of Dar es Salaam, Tanzania.
Research topic: Influence of gene flow barriers on insecticide resistance, genetic variation, and malaria transmission by *Anopheles funestus*.
***icipe* supervisor**: David Tchouassi

Bhoke Marwa Nyaisaba (Tanzania)
Registered at: University of Dar es Salaam. **Research topic**: Valorization of biomasses using black soldier fly larvae and extraction of proteins and other bioactive compounds. ***icipe* supervisor**: Fathiya Khamis

Amine Mustapha Mahamat (Chad)
Registered at: University of Pretoria, South Africa
Research topic: Influence of gene flow barriers on insecticide resistance, genetic variation, and malaria transmission by *Anopheles funestus*.
***icipe* supervisor**: David Tchouassi.

Cultural day

With its >500 staff from 24 countries, *icipe* amalgamates a range of cultures. Each year, the *icipe* Scholars Association community holds a Cultural Day, which has become a 'must attend' event for all. This year's celebration was held on 12 July 2024, under the theme 'United by Science; Strengthened through Cultural Diversity.' The Centre's Campuses were transformed into a vibrant hub of cultural expression, a mosaic of the beauty and creativity that reflects our diverse heritage. The entire community congregated and celebrated, donned in with an assortment of attire and ethnic jewelry. Song, dance, drama, food, football – there was something for everyone.

Scaling fruit fly IPM

To improve the adoption of the *icipe* integrated pest management (IPM package for fruit fly, we have conducted a study to better understand the gendered barriers and opportunities for scaling the practices along the mango value chain in Kenya. The results show that inadequate access to IPM inputs, market constraints and training as key barriers. Insights on the interactions between mango value chain actors, gender dynamics, and the various factors influencing IPM adoption, will guide a comprehensive intersectional and multifaceted approach. Paper link

Tick-pathogens in camel

In a global fight, *icipe* and collaborators have detected tick-borne pathogens in the blood of dromedary camels. This finding broadens understanding of the potential transmission mechanisms of tick-borne pathogen. The insights also help to disentangle infection status from the ability of ticks to transmit pathogens. Paper link

Road map for DSS IPM technologies

We have assessed the effectiveness of 32 digital tools in disseminating IPM technologies, against key limitations. To overcome these hurdles, we are proposing a novel user centred Decision Support System (DSS) featuring offline access, data visualization and customized technology recommendations. Paper link

Global atlas of edible insects

Together with collaborators, we have compiled and analysed the fragmented database on edible insect species globally. We have also identified potential drivers that shed light on insect consumption. Our study identified 2205 insect species consumed in 128 countries worldwide. We note some common and specific practices related to edible insect access and use among countries and regions. We confirm that the practice of eating insects is linked to the culture of people, and edible insects are becoming increasingly important in the future of planetary food systems. However, proactive efforts are required to promote edible insects, to achieve sustainable production. Paper link

Fruit fly natural enemy benefits

We have conducted a study on the benefits of a fruit fly natural enemy, a wasp known as *Fopius arisanus*, which was released by *icipe* in Africa to control the invasive fruit fly, *Bactrocera dorsalis*. For every one USD invested, the return benefit is USD 33.92. The net present value is USD 13.7 million over a 16-year period, with an internal rate of return of 73% compared to the reference discount rate of 12%. Thus, further releases of the natural enemy could have a major impact on fruit production in Africa. Paper link

Trapping dengue mosquitoes

We have identified host-associated compounds and developed a potentially effective trapping technology for dengue virus-transmitting mosquitoes. When loaded on polymer beads, these compounds are more effective than commercial baits in trapping Aedes mosquitoes, the primary vectors of dengue. We have also noted sex-specific differences in the responses of mosquitoes to these chemicals. Thus, we can develop a selective trapping technology for mosquitoes. Paper link

*i*Pydisp – the future of biological control modelling

Parasitoids, insects whose immature stages develop either within or attached to the outside of other insects, are vital in ecosystems, especially in the biological control of agricultural pests due to their inherent ability to track target pests across agricultural landscapes. This tracking is influenced by several external factors such as environmental conditions, host availability and ability to evade predation. To model parasitoids in biological control, we are introducing *iPydisp*, an intuitive Python-based visual analytical framework. Paper link

Stable flies seeing red

Stomoxys flies, commonly known as stable flies, have a rather odd behaviour of being attracted to objects that 'offer no rewards', such as traps and targets that are devoid of blood or nectar incentives. We have exploited this behaviour to modify the existing blue Vavoua trap, which was originally designed to attract biting flies, to create an attraction system for stable flies. We note that Stomoxys flies are attracted to various colours, with red being the most attractive and selective colour. Interestingly, Stomoxys flies do not prefer a specific livestock fur colour. To create a realistic sensory impression of the trap in the Stomoxys nervous system, we incorporated cues from livestock odours. Overall, we have created a red trap baited with a polymer bead dispenser. Paper link

Malaria mosquitoes in Kenya

Anopheles coluzzii is the primary mosquito that transmits malaria in West and Central Africa. Its presence has hitherto not been documented in Kenya. In line with our ongoing surveillance efforts in the country, we have observed the presence of *Anopheles coluzzii* and that the species is an efficient vector of malaria. The mosquito can tolerate more arid conditions and thrive in both rural and urban settings. This species is potentially contributing to malaria transmission in Turkana County, northern Kenya and malaria control interventions currently in place may be ineffective against it. This finding, alongside the recent finding of *An. stephensi* in Turkana and other regions of northern Kenya, emphasizes the need to re-evaluate the various variables of malaria mosquitoes in the country. Paper link

Mealworm: the answer to Africa's plastic waste problem?

As Africa, alongside the rest of the world, contends with a growing challenge of plastic waste, *icipe* scientists have found a promising solution for the menace, in the mealworm. In a paper published in *Scientific Reports* journal, the researchers report that they have identified a new species, termed the lesser mealworm, which can consume plastic. The researchers have also established important bacteria in the gut of the mealworm, which help in the potential digestion of plastic. Globally, mealworms have been used in the degradation of plastic. However, this is the first time that a species that is specific to Africa has been documented to consume plastic. The researchers will embark on new studies on ways to harness the plastic degrading potential, either through the mealworms, or by exploiting the bacteria. Paper link

icipe DG Abdou Tenkouano (second left) and Thomas Dubois, Head, Plant HealthTheme (extreme left) visited the European Commission Directorate-General for International Partnerships (DG INTPA) on 22 January 2024. They are pictured with Ms Carla Montesi (second right), Director, DG-INTPA and Mr Christophe Larose (extreme right), Head of Sector: Sustainable Agriculture. The discussions centred on scaling *icipe* innovations, including biopesticides, insect-based frass fertiliser and the push- pull technology.

Ms Montesi (second right), and Mr Larose (second left), visited *icipe* in May 2024, ahead of the Africa Fertilizer and Soil Health Summit. They are pictured with *icipe* DG, Abdou Tenkouano listening to Chrysantus Mbi Tanga (right), Head, Insects for Food, Feed and Other Uses (INSEFF) Programme. The discussions focused on ongoing and potential areas for collaboration, including scaling up and technology dissemination.

On March 12, 2024, the European Union (EU) ambassador to Kenya, H.E. Henriette Geiger, and other ambassadors of EU member states visited the *icipe* Thomas Odhiambo Campus, Mbita. Front row (l-r): H.E. Mr Sebastian Groth (Germany); Abdou Tenkouano, DG, *icipe*; H.E. Henriette Geiger; H.E. Ms Caroline Vicini (Sweden). 2nd row (l-r) Mr Stephan Fox, Attaché – Infrastructure section, EU Delegation to the Republic of Kenya; Prof. Zeyaur Khan, Emeritus Fellow, *icipe*; H.E. Dr Christian Fellner (Austria); H.E. Mr Mirosław Godjz´ (Poland); Ms Irene Giribaldi, Head of Cooperation, EU Delegation to the Republic of Kenya. Back row (l-r): Dr Frank Chindawanyika, Scientist, *icipe*; Mr Jimmy Pittchar, Scientist and Manager, *icipe* Thomas Odhiambo Campus; Hon. Martin Opere, County Executive Committee Member, Homa Bay County, Kenya.

The DG paid a courtesy call to Mr Korir Sing'oei, Principal Secretary, Ministry of Foreign and Diaspora Affairs, State Department for Foreign Affairs, Kenya. The meeting contemplated the wonderful and reciprocal relationship between *icipe* and Kenya. Read more

H.E Mr Arnaud Suquet (left), the Ambassador of France to Kenya and Somalia, with *icipe* DG Abdou Tenkouano, during the signing of an agreement for the 'Biochar and Insect-composted Organic fertilizers in Kenya (BIO Kenya)' project, which is funded through French Ministry of Europe and Foreign Affairs.

On 13 August 2024, *icipe* DG, Abdou Tenkouano (third right) paid a courtesy call to H.E Christopher Thornly (third left), Canadian High Commissioner to Kenya. Also in the picture is Janine Cocker (left), Head, Development Cooperation and Hellen Oriaro (second right), Senior International Assistance Officer; Samira Mohammed, Principal Scientist *icipe* (right), and David Tchouassi, Senior Scientist *icipe* (second right).

Signing of the agreement of the CAD $20 million grant for the Integrating bean, fruit trees and beneficial insect farming and business enterprises in Africa (BRAINS) project, an initiative between *icipe* and the Alliance of Bioversity International and CIAT (The Alliance), funded by Global Affairs Canada (GAC). (Front row, seated): Marcia Colquhoun (centre), Executive Director, Pan-Africa Regional Development Program, GAC; Maya Rajasekharan (left), Managing Director, Africa, The Alliance; and Abdou Tenkouano, Director General, *icipe*. (Back row, standing, l-r): Hellen Oriaro and Hanif Pabani (GAC); Sunday Ekesi, *icipe*; and Jean-Claude Rubyogo, The Alliance.

In June 2024, Nikita Eriksen-Hamel (in blue shirt), Deputy Director, Global Affairs Canada (GAC), visited *icipe* in the context of the Building Equitable Climate-Resilient African Bean & Insect Sectors (BRAINS) project, a joint initiative of *icipe* and the Alliance of Bioversity International and CIAT (The Alliance). He is pictured on a tour of BRAINS project related innovations, with Juan Luca Restrepo, Director General, The Alliance, and several colleagues from GAC and *icipe*.

Sélim Louafi, Deputy Director General in charge of Research and Strategy, and Patrice Grimaud, Regional Director for East Africa, CIRAD, visited *icipe* in April for discussions on how to strengthen collaboration between the two institutions.

Visitors from the World Bank: Katie Kennedy Freeman (second right), Senior Agriculture Economist and Kaja Waldmann (left), Food Security and Food System Resilience Analyst, pictured with *icipe* DG Abdou Tenkouano (right), listening to Fathiya Khamis, Head, Molecular Biology and Bioinformatics Unit (MBBU) as she explains about the Centre's research and innovations.

Mr Gilberto Carvalho Silva (extreme left), Minister of Agriculture, Cape Verde, visited *icipe* on 1 March 2024. He is pictured listening to Fathiya Khamis (second left), Head, Molecular Biology and Bioinformatics Unit (MBBU), as she explains about *icipe*'s biopesticides research and development.

On 11 July 2024, a delegation from the Eritrea National Agricultural Institute (NARI), which included Dr Tsegay Berhane (2nd right), Director General, Dr Negusse Abraha (3rd right), Director of Crop Improvement Research Division, and Mr Tesfamariam Negusse (2nd left), Head of Planning and Statistics Unit, visited *icipe* as part of a fact-finding mission in Kenya. They are pictured listening to Nelly Ndung'u, Consultant Scientist, *icipe*, describe the commercial and benefical insects activities. Also in the picture is Sevgan Subramanian, Head, Environmental Health Theme and Takemore Chagomoka, Head, Technology Transfer Unit, *icipe*.

A delegation comprising of institutional leaders from West and Central African Council for Agricultural Research and Development (CORAF/WECARD), Forum for Agricultural Research in Africa (FARA), Centre for Coordination of Agricultural Research and Development for Southern Africa (CCARDESA), Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) visted *icipe* on 27 February 2024. They are pictured with *icipe* DG Abdou Tenkouano (third right).

In March 2024, Dr Abdou Tenkouano, *icipe* Director General visited Ethiopia where he met various stakeholders and discussed the potential of upscaling various *icipe* technologies.

Dr Tenkouano (second left) with Dr Fikru Regassa (centre), State Minister of Agriculture, Ministry of Agriculture Ethiopia, and *icipe* team members Workneh Ayelaw, Programme Coordinator, Tadele Tefera, Head, *icipe* Ethiopia Office, and Sevgan Subramanian, Head Environmental Health Theme.

The DG with Dr Tidiane Ouattara (left), Space Expert and Coordinator of The Global Monitoring for Environment and Security (GMES and Africa) at the African Union Commission (AUC).

The DG with Ms Tamara Mona (right), Swiss Ambassador to Ethiopia.

We welcomed a team of eight Vice Chancellors of leading universities in Kenya on a study tour to discuss scientific training, research and commercialisation of research outputs, with emphasis on technology transfer processes.The represented universities include: University of Embu, Meru University of Science and Technology (MUST), Riara University, Daystar University, University of Nairobi, South Eastern Kenya University (SEKU), Maasai Mara University and Rongo University of Science & Technology.

On 21 August 2024, *icipe* DG, Abdou Tenkouano (right) paid a courtesy call to Dr Yona Baguma (left) Director General, National Agricultural Research Organisation (NARO), Uganda.

icipe participated in the 14th Ordinary Session of the West and Central Africa Council for Agricultural Research and Development (CORAF) held from 16—18 April 2024 in Benin and showcased the insects for food and feed and other uses innovations. Pictured with *icipe* DG, Abdou Tenkouano are: Shapan Yong, Research Scientist (right), Menaga Meenakshisundaram, Postdoctoral Fellow (second left) and Dennis Beesigamukama, Postdoctoral Fellow (right)

From 9—11 April 2024, *icipe* as a Stockholm Convention Regional Centre, organised a sub-regional workshop to strengthen implementation of the Rotterdam Convention. The forum aimed to build on the executing capacities of participating nations, and to align regional strategies to better regulate chemicals that pose serious risks to both human health and environmental health.

In July 2024, the DG (fourth left) visited the Australian Centre for International Agricultural Research (ACIAR) offices in Canberra, Australia, where he met with Prof. Wendy Umberger (fourth right), CEO, ACIAR, for discussions on the ongoing support and partnerships with *icipe*. Also in the picture are (l-r): Roseanne Mwangi, Executive Director, The Insectary Ltd, Kenya; Bosibori Bett, Acting Director of Multilateral and Strategic Partnerships, ACIAR; Tanga Mbi, *icipe*; Anna Okello, Research Program Manager, Livestock Systems, ACIAR; Talash Huijbers, CEO, Insectipro Ltd., Kenya; Leah Ndungu, Regional Manager, Eastern and Southern Africa, ACIAR.

NEW APPOINTMENTS

***Angshu Sengupta (India)**
Interim Deputy Director General,Corporate Services (iDDG CS)

****Sunday Ekesi (Nigeria)**
Interim Deputy Director General, Research for Development

(Promotion)
****Thomas Dubois (Belgium)**
Director, Impact Delivery

****Daniel Masiga (Kenya)**
Head, Global Health Thematic Research Programme

****Subramanian Sevgan (India)**
Head, Biodiversity & Environment Thematic Research Programme

****Julius Ecuru (Uganda)** Head, Policy & Enabling Environment Thematic Research Programme

****Samira A. Mohamed (Sudan)**
Head of Agriculture & Climate Change Thematic Research Programme

****Menale Kassie (Ethiopia)**
Head, Integrated Data and Analytics Platform

****Fathiya Khamis (Kenya)**
Head, Integrated Biosciences Platform

****Everlyn K. Nguku (Kenya)**
Head, Capacity Building & Institutional Development (CBID) Platform

****Jandouwe Villinger (Netherlands, US)**
Interim Head, Animal Health Theme

****Komivi Senyo Akutse (Togo)**
Head, Arthropod Pathology Unit (APU)

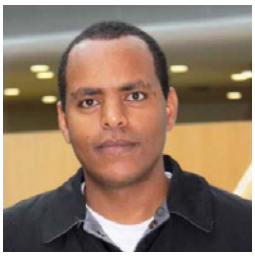
***Takemore Chagomoka (Zimbabwe)**
Head, Technology Transfer Unit

****Beatrice Muriithi (Kenya)**
Scientist, Gender and Impact Assessment, Social Science and Impact Assessment Unit (SSIAU)

****Elfatih Abdel- Rahman (Sudan)**
Senior Research Scientist & Interim Head of Data Management, Modelling and Geoinformation Unit

****Kristin Seljeflot (Norway)**
Resource Mobilisation & Advocacy Manager

****Tobias Landmann (Germany)**
Senior Research Scientist



***Kibrom T. Sibhatu (Eritrea)**
Research Scientist, Social Sciences and Impact Assessment Unit (SSIAU)

***Steve B. S. Baleba (Cameroon)**
Research Scientist, Behavioural and Chemical Ecology Unit (BCEU)

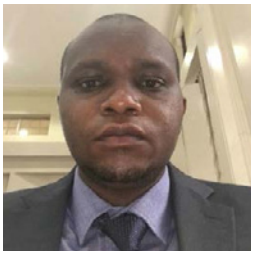
****Daniel Mutyambai (Kenya)**
Host Country Liaison Officer

***Priscille Barreaux (France)**
Postdoctoral Fellow, Human Health Theme (Symbiovector Project)

***Cynthia Muhavi Mudalungu (Kenya)**
Postdoctoral Fellow, Insects for Food, Feed and other uses Programme (INSEFF)

***Faith Oronga Amatika-Omondi (Kenya)**
Senior Business Support Officer II (Senior Legal Officer)

****Caroline Nungari (Kenya)**
Associate Human Resources Manager



***Simon Muthusi Mutua (Kenya)**
Senior Research Officer I Martin Luscher Emerging Infectious Diseases (ML- EID) Laboratory

* External appointment
**Internal appointment

For more details on new appointments visit the *icipe* website

Read More

Donor: Global Affairs Canada with funding from Canada's climate fund jointly led with the Alliance of Bioversity International and CIAT
Title: Building Equitable Climate-Resilient African Bean & Insect Sectors (BRAINS)
***icipe* staff**: Sunday Ekesi, Subramanian Sevgan, Samira Mohamed, Beatrice Muriithi, Thomas Dubois, Kiatoko Nkoba, Dennis Beesigamukama, Fathiya Khamis, Elfatih Abdel-Rahman, Peterson Nderitu
Collaborators: Alliance of Bioversity International and CIAT

Donor: Secretariats of the Basel, Rotterdam and Stockholm (BRS)/United Nations Environment Programme (UNEP) - Small-Scale Funding Agreement
Title: Pilot project on Polychlorinated Biphenyls (PCB) inventory updating and validation and opportunities for scaling up funding for PCB elimination
***icipe* staff:** Merid Getahun, John Bwire
Collaborators: Stockholm Convention Regional Centre in Kenya, *icipe*; National Environmental Management Authority (NEMA), the Stockholm Convention's Focal Point in Uganda; African Development Bank

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Donor: Novo Nordisk Foundation Title: Exploring the potential of locally led production of novel and super foods for improved nutrition in protracted crisis contexts
***icipe* staff:** Chrysantus Tanga, Dennis Beesigamukama, Shaphan Chia
Collaboratos: DanChurchAid, Kenya; Thriving Green, Kenya; MAAN Development Center, Palestine

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Donor: Food and Agriculture Organization of the United Nations (FAO)
Title: Specialized Technical Support to "STDF Project Grant (STDF/PG/809) - Regional approach towards addressing invasive quarantine pests of potato in East and Southern Africa"
***icipe* staff:** Solveig Haukeland
Collaborators: Food and Agriculture Organization of the United Nations (FAO); International Institute of Tropical Agriculture (IITA); Centre for Agriculture and Bioscience International (CABI); Kenya Plant Health Inspectorate Service (KEPHIS); International Potato Center (CIP)

Donor: Niigata University, Japan Title: Composition of fall armyworm, cereal stemborers, and their parasitoids in push-pull and conventional cropping systems across an altitudinal gradient ***icipe* staff:** Frank Chidawanyika **Collaborators:** Niigata University

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Donor: Postkode lottery (Postkodlotteriet) through We Effect, Sweden
Title: Waste for Cash Eco Project (WACEP)
***icipe* staff:** Dennis Beesigamukama, Shaphan Chia, Chrysantus Tanga
Collaborators: We Effect; Meru Central Coffee Cooperative Union; Meru County Government; Swedish University of Agricultural Sciences (SLU); Konsumentföreningen Stockholm (KfS); Lantbrukarnas riksförbund (LRF).

Donor: Food and Agriculture Organization of the United Nations (FAO)
Title: Assessment of livelihood, environmental and economic impacts of *Achea catocaloides* a transboundary noctuid moth pest in Liberia, Sierra Leone, and Guinea
***icipe* staff:** Beatrice Muriithi, Samira Mohamed
Collaborators: FAO sub-regional for West Africa; Ministry of Agriculture, Liberia; Ministry of Agriculture and Food Security, Sierra Leone; Ministry of Agriculture and Livestock, Guinea; International Institute of Tropical Agriculture (IITA), Centre for Agriculture and Bioscience International (CABI); Others in the project technical working group: WAVE/AAIS, ECOWAS, MRU, WFP, CARI, Africa Rice

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Donor: One CGIAR Secretariat and the project led by the International Maize and Wheat Improvement Center (CIMMYT)
Title: Fall armyworm Integrated Pest Management and scaling
***icipe* staff**: Thomas Dubois, Frank Chidawanyika, Komivi Akutse, Samira Mohamed
Collaborators:

Donor: The French National Research Institute for Sustainable Development (IRD) funded by the French National Research Agency
Title: Contract of services to develop a biocontrol solution for the corn borer *Sesamia nonagrioides* using the beneficial *Cotesia typhae*
***icipe* staff:** Thomas Dubois, Paul Calatayud
Collaborators: Bioline Agrosciences (France); Dudutech (Kenya); Evolution, Genomes, Behavior and Ecology (EGCE), France; Arvalis, France; Quantitative Genetics and Evolution (GQE), France

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Donor: The Swiss National Science Foundation (SNSF) and Swiss Agency for Development and Cooperation (SDC), Solution-oriented Research for Development (SOR4D) programme led by University of Neuchâtel
Title: Biological control of the fall armyworm with entomopathogenic nematodes for enhanced food security in Africa
***icipe* staff:** Fathiya Khamis, Baldwyn Torto, Beatrice Muriithi, Solveig Haukeland
Collaborators: Bioline Agrosciences Africa Ltd., Kenya; University of Neuchâtel, Switzerland; Centre for Agriculture and Bioscience International (CABI)-Switzerland

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Donor: Biovision Foundation led by Justus Liebig University of Gießen (JLU) Title: DYNADOPT: Understanding Adoption Pathways, dynamics, barriers, and Facilitators of push-pull agroecological Innovation in Eastern Africa ***icipe* staff:** Menale Kassie, Beatrice Muriithi, Amanuel Tamiru, Jimmy Pittchar, Frank Chidawanyika, Elfatih Abdel-Rahman
Collaborators: Kenya Agricultural and Livestock Research Organization (KALRO)

Donor: German Agency for International Cooperation (GIZ) Somalia and Kenya
Title: Implementation of a geodata training in Addis Ababa and Lima Peru - 83463350
***icipe* staff:** Tobiasl Landmann, Sokame Bonoukpoé
Collaborators: Consultative Group of International Agricultural Research (CGIAR)

Donor: Food and Agriculture Organization of the United Nations (FAO)
Title: Specialized Technical Support to "STDF Project Grant (STDF/PG/809) - Regional approach towards addressing invasive quarantine pests of potato in East and Southern Africa"
***icipe* staff:** Solveig Haukeland
Collaborators: Food and Agriculture Organization of the United Nations (FAO); International Institute of Tropical Agriculture (IITA); Centre for Agriculture and Bioscience International (CABI); Kenya Plant Health Inspectorate Service (KEPHIS); International Potato Center (CIP)

RECENTLY FUNDED

Donor: Organization for Women in Science for the Developing World (OWSD) 2023 Early Career Fellowship
Title: Transinfecting *Aedes aegypti* with a native Wolbachia strain for sustainable arbovirus control in Kenya
***icipe* staff:** Sheila Agha, Baldwyn Torto

Donor: African Women in Agricultural Research and Development (AWARD) - policy innovation project - catalytic funds
Title: Gender Responsive Policies for Inclusive Assessment, Design, Implementation, and Monitoring and Evaluation of Integrated Pest Management in East Africa
***icipe* staff:** Beatrice Muriithi
Collaborators: AWARD)

Donor: Lacuna Fund through Merdian Institute: Climate & Forests - 2023 Title: Data-enabled climate shock absorbance through agroforestry (Agrof4resilience)
***icipe* staff:** Elfatih AbdelRahman, Kennedy Senagi, Henri Tonnang
Collaborators: Strathmore University, Kenya; World Agroforestry Centre (ICRAF); CGIAR Centers (International Center for Tropical Agriculture (CIAT), International Potato Center (CIP), International Livestock Research Institute (ILRI), International Water Management Institute (IWMI))

Donor: Open Philanthropy
Title: SymbioVector (SMBV) Project: Development and implementation of a transformative and sustainabe strategy for malaria control in Africa using symbiont-based transmission blocking: Phase 2. Enhancing Microsporidia MB Transmission and Dissemination (SMBV-EMTD)
***icipe* staff:** Jeremy Herren
Collaborators: Kenya Medical Research Institute (KEMRI), Kenya; Imperial College, UK; University of Glasgow, UK
Donor: African Organisation for Standardisation (ARSO)
Title: Harmonization of African Standards for edible insects for food and feed and other standards related deliverables
***icipe* staff**: Chrysantus Tanga

Donor: JRS Biodiversity Foundation
Title: Bioeconomy Summit - Global Bioeconomy Summit 2024
***icipe* staff**: Julius Ecuru, Sunday Ekesi
Donor: Ministry of Europe and Foreign Affairs (MEAE), France and the Embassy of France in Kenya
Title: Biochar & Insect-composed Organic fertilizers in Kenya (BIO Kenya)
***icipe* staff:** Dennis Beesigamukama, Chrysantus M. Tanga, Sevgan Subramanian
Collaborators: Kenya Agricultural and Livestock Research Organization (KALRO), University of Embu, Kenyatta University, Egerton University, French Agricultural Research Centre for International Development (CIRAD), Institut de Recherche pour le Développement (IRD), and Koitaleel Samoei University College

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Donor: Georgetown University - Earth Commons Institute
Title: The impact of temperature on vector-borne disease transmission in staple crops
***icipe* staff**: Sokame Bonoukpoé
Collaborators: The Earth Commons Institute, USA; International Potato Center (CIP)

Donor: National Institutes of Health (NIH) -Tropical Medicine Research Centers (RFA-AI-21-004)/led by Ohio State University/through Kenya Medical Research Institute (KEMRI)
Title: A multidisciplinary approach to study ecotypes driving transmission and pathogenesis of Visceral Leishmaniasis (VL) and Post kala-azar dermal leishmaniasis (PKDL) in Eastern Africa
***icipe* staff:** Daniel Masiga **Collaborators**: Ohio State University, KEMRI, Addis Ababa University, US National Institute of Allergy and Infectious Diseases, and University of Sudan

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Donor: BMZ through Rheinische Friederich-Wilhelms-Universität Bonn (ZEF)
Title: Amendment to the Agreement (Ref. ZEF-PARI /ICPE/2023) - Program of Accompanying Research for Agricultural Innovation (PARI)
***icipe* staff:** Julius Ecuru
Donor: Australian Centre for International Agricultural Research (ACIAR).
Title: Strengthening Productivity in Agribusiness through Research in Kwale (SPARK)
***icipe* staff**: Beatrice Muriithi
Collaborators: Pwani University, Kenya; Kenya Agricultural and Livestock Research Organization (KALRO); PAVI Co-Operative, Kenya

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Donor: The Fulbright Specialist Program (sponsored by the U.S. Department of State with funding by the U.S Government, administered by World Learning)
Title: Science & Innovation Fund for Africa's green economy
***icipe* staff**: Julius Ecuru, Kristin Seljeflot Fulbright specialist: Dr James Hembree, Senior Director of Development, Assistant Vice President for University Initiative, University of Seattle, USA
Agreement and not a project
Title: Bee Bond - A first-in-class debt solution for pollinator conservation in Africa
***icipe* staff:** Sevgan Subramanian, Menale Kassie, Beatrice Nganso, Kiatoko Nkoba, Julius Ecuru
Collaborators: FORESTED; Sustainable Finance Coalition; *icipe*; TechnoServe

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icipe gratefully acknowledges the financial support of the following organisations and agencies

Core donors

- Swedish International Development Cooperation Agency (Sida), Sweden
- Swiss Agency for Development and Cooperation (SDC), Switzerland
- Australian Centre for International Agricultural Research (ACIAR), Australia
- Government of Norway
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
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