

NEWSLETTER

INSIDE THIS ISSUE

- **Fostering scientific excellence: WAVE invests in training the next generation of African researchers**
- **The silent sentinels: How African Women Researchers are securing the food future of sub-Saharan Africa**
- **WAVE makes a splash at JOBIM 2025 in Bordeaux, showcasing scientific results and the pioneering CIBiG initiative**

EDITORIAL

Dear friends,

In this latest issue of our newsletter, we will take you to the heart of our recent research for development activities and explain how we are bringing our vision of "disease-free crops for food and income security for all in Africa" to life.

Join us as we explore WAVE's contributions to food security in Africa and discover the various ways we tackle plant diseases.

We hope you enjoy reading about our work!



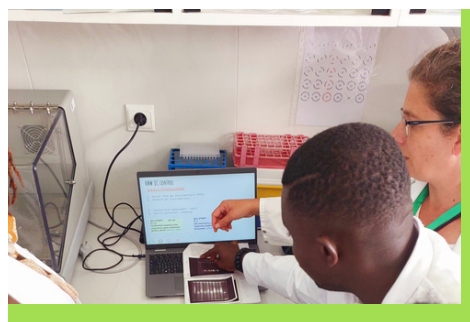


FOSTERING SCIENTIFIC EXCELLENCE: WAVE INVESTS IN TRAINING THE NEXT GENERATION OF AFRICAN RESEARCHERS

Bridging the scientific gap in the fundamentals of molecular biology and biotechnology for modern agriculture in Africa

The WAVE Regional Center of Excellence is at forefront of addressing Africa's most pressing agricultural challenges through scientific innovation and capacity building. Recognizing that 70 to 80% of rural employment in sub-Saharan Africa remains linked to agriculture (Source: World Bank, FAO), WAVE understands that securing production is fundamental to sustainable economic development.

Therefore, WAVE has committed on an ambitious mission : training the next generation of African researchers. This mission includes comprehensive fellowship programs, dedicated mentoring initiatives, and the establishment of an internationally recognized certificate in bioinformatics and genomics. These efforts aim to create a sustainable pool of scientific talent capable of addressing current and future threats to plant health while promoting food security, economic growth, and sustainable development across the African continent.



Adopting a hands-on approach

WAVE emphasizes practical research experience from the early stages of doctoral training. Master's and Ph.D. students, selected from universities in WAVE member countries, address issues affecting agriculture in their respective countries, producing results that directly contribute to development. This practical focus ensures that young researchers acquire theoretical knowledge and skills that can be applied in the field and used by communities. By emphasizing fundamental research skills and applied technological solutions, WAVE equips beneficiaries to address concrete problems in African agriculture.

WAVE has established a multi-level mentoring framework that connects students with experts at various career stages. In addition to university thesis committees, each doctoral student benefits from an advisory committee that provides specialized expertise as needed. This comprehensive support addresses research challenges, career development, and professional growth.

Women researchers have been well represented in WAVE programs, reflecting the center's commitment to gender equality in scientific training. The center actively encourages female applicants by implementing support policies that address the structural barriers women face in scientific research. As a result, a large group of female scientists has emerged, conducting innovative research in plant protection using molecular biology and biotechnology tools across Africa.



A pillar for sustainable research capacity development

The WAVE Regional Centre of Excellence is a comprehensive model for developing sustainable research capacity in Africa. By providing support for doctoral training, a specialised certificate (the CIBiG: International Certificate in Bioinformatics and Genomics), short training workshops and ongoing mentoring, WAVE creates multiple professional development pathways to meet the needs of individuals at all stages of their scientific careers. Its focus on local research and practical applications enables young African researchers to address current challenges and anticipate and respond to future threats to plant health.

Investing in training the next generation of plant health researchers is arguably the centre's most significant long-term contribution to agriculture and food security in Africa. By equipping young scientists with the necessary skills, knowledge and networks to drive innovation in plant health, WAVE is helping to build a resilient scientific workforce that will be capable of responding to the ever-changing challenges and opportunities of African agriculture for decades to come.



THE SILENT SENTINELS: HOW AFRICAN WOMEN RESEARCHERS ARE SECURING THE FOOD FUTURE OF SUB-SAHARAN AFRICA

In Africa's vast and dynamic agricultural landscapes, an invisible war is raging. The combatants are not soldiers, but microscopic pathogens (viruses, bacteria, and fungi) that threaten and decimate crops, destabilize food security, and sometimes destroy local economies. On the front lines of this battle is a formidable army of scientists, increasingly made up of women. Their work, often carried out in remote fields and underfunded laboratories, is nothing short of revolutionary.

Nowhere is this more evident than in the fight against plant diseases in Central and West Africa. Here, initiatives such as the WAVE program are at the forefront, and within them, a cohort of brilliant female researchers is leading the charge. Their stories are not only about science, but also about resilience, innovation, and a deep commitment to their communities.

The Cornerstone of Food Security: Why Plant Health Matters

In regions where village farming is the main source of livelihood and food for the day-to-day, a poor harvest can be disastrous. Diseases such as cassava mosaic disease (CMD) and cassava brown streak disease (CBSD) can destroy entire cassava crops, which is a staple food for over 500 million people. Similarly, viruses that attack crops such as bananas, potatoes and sugarcane pose a constant threat. The work of scientists specialising in plant health is therefore essential for national and regional security. By monitoring and identifying these plant diseases and developing solutions, they protect the foundations of the African food system.

Meet our sentinels: pioneers in their field

Professor Angela Obiageli ENI: the bridge builder

Based in Côte d'Ivoire, Professor Obiageli is the Deputy Executive Director of WAVE. A virologist by training, she embodies the powerful synergy between academia and practical solutions in the field. As a key figure at WAVE, she plays a role that is both diplomatic and scientific. She establishes networks and builds capacity to ensure that scientific knowledge reaches those who need it most, including policymakers, national agricultural research systems, extension workers and farmers.

A model of resilience and leadership, Professor Eni plays a decisive role in strengthening national and regional capacities for disease surveillance and diagnosis. She also helps to create a united front against common threats by strengthening the network of scientists and institutions across Central and West Africa.

She is a prime example of the holistic epidemiological approach that is essential to achieving sustainable food security in Africa, bridging the gap between complex phytosanitary data and practical plant health strategies.



Dr. Monique SORO: the plant tissue culture expert

Dr. Monique Soro is the Head of the tissue culture laboratory at WAVE Burkina Faso. She has developed her career under the mentorship of WAVE.

A highly qualified scientist, she balances mastering meticulous manual techniques with leading innovative research, managing complex production systems and applying powerful technologies to address challenges related to food security and conservation.

Dr Soro's research also focuses on potatoes, a key crop in Burkina Faso. Her work plays a crucial role in conserving and micropropagating plant heritage in Burkina Faso.



Dr. Assion Setu MIVEDOR : the field virologist

Deputy Country Director of WAVE Togo, Dr. Mivedor is a trained virologist and a true product of WAVE. She works directly at the source of crop epidemics, such as those affecting cassava. Together with her team, she collects samples of affected plants and interviews farmers about how the disease is spreading.

This field research is challenging but essential. It generates real-time data revealing how pathogens spread, the vectors responsible and the environmental factors contributing to the spread and persistence of cassava diseases.

Dr. Mivedor can then deploy her expertise in genetic sequencing, a meticulous process of mapping the genome of viruses to understand their origin, evolution and spread. This work is not purely theoretical, but operational intelligence. It translates abstract scientific concepts into the practical information needed to implement response strategies and formulate recommendations for farmers, agricultural extension workers and policymakers.



Building a Resilient Future

The journeys of these women are not without unique obstacles. They often work in fields traditionally dominated by men, where they must balance enormous professional responsibilities with deeply ingrained cultural and family expectations. Yet they persevere, leveraging their unique perspectives to gain the community's trust and taking a more holistic approach to problem-solving that considers the socio-economic realities of the farmers they serve.

They are breaking stereotypes and inspiring a new generation of girls to consider a future in molecular epidemiology and agricultural biotechnology.

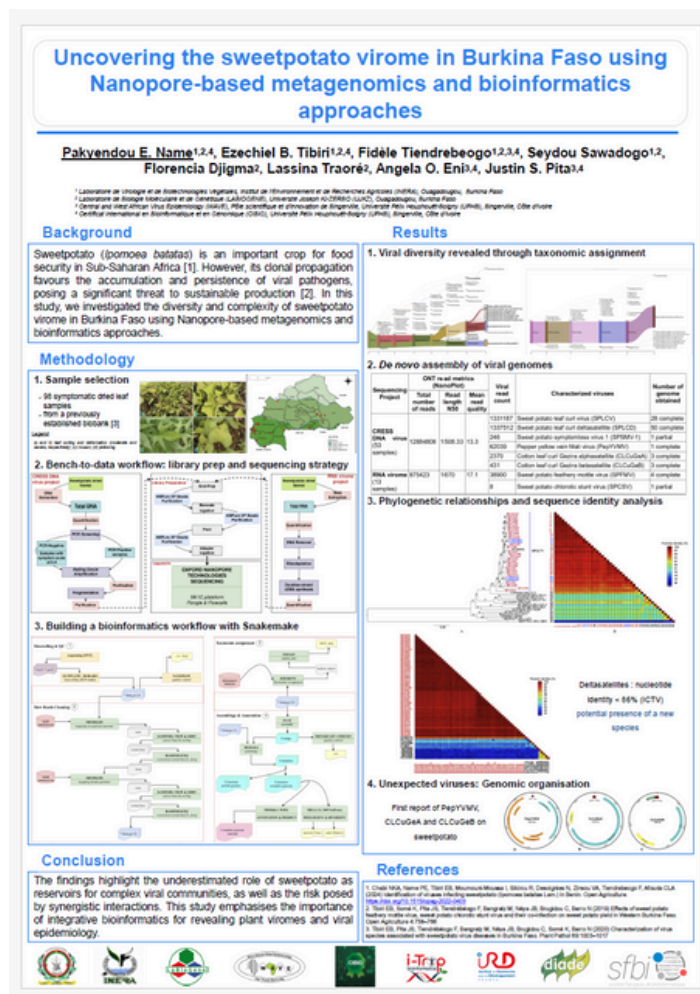


WAVE MAKES A SPLASH AT JOBIM 2025 IN BORDEAUX, SHOWCASING SCIENTIFIC EXCELLENCE AND THE PIONEERING CIBIG INITIATIVE

The **WAVE Regional Centre of Excellence** made a strong impression at **JOBIM** (Open Days in Biology, Computer Science and Mathematics), held from 8 to 11 July at the prestigious University of Bordeaux.

The event brought together researchers, engineers, doctoral students and professionals specialising in digital and life sciences from various continents to explore the latest advances in bioinformatics and computational biology.

For WAVE, a research centre dedicated to food security in West and Central Africa through plant disease control, participating in JOBIM presented a valuable opportunity to connect with the global bioinformatics community. JOBIM provided WAVE with an ideal platform to showcase its cutting-edge research and its CIBiG certificate.



Showcasing scientific results

The WAVE team made a substantial contribution by displaying two posters and giving an oral communication.

These presentations enabled the team to share the results of their cutting-edge research, entitled:

- **Co-creation of a sustainable training programme in bioinformatics: International Certificate in Bioinformatics and Genomics in West Africa**
- **Study of the sweet potato virome in Burkina Faso using metagenomic and bioinformatics approaches based on nanopore technologies**

The quality of the research and clarity of the communications further established WAVE as a leader in bioinformatics in West Africa.



The pioneering CIBiG initiative

The title of the oral presentation was “A decade of capacity building in bioinformatics in West Africa: HPC infrastructure, training, and scientific collaboration”.

As well as presenting specific research activities, WAVE's presence at JOBIM provided a tremendous opportunity to showcase CIBiG. Presented to an audience of international experts, CIBiG was recognised as a unique global initiative, not just an African one.

In a world where biology is increasingly influenced by big data, CIBiG empowers African teams to independently generate, analyse and interpret genomic data, significantly reducing their dependence on teams from the north.

WAVE's achievements at JOBIM 2025

Presenting our work at JOBIM was an invaluable experience that allowed us to showcase significant scientific advances in genomic research in West Africa, driven by data.

The reaction to CIBiG was particularly gratifying; many were impressed by its scope and vision. This paves the way for potential partnerships and establishes WAVE as a hub for innovation and attraction in bioinformatics having a direct impact on local skills development, as well as generating robust scientific data to ensure food and nutritional security.

WAVE's participation in JOBIM 2025 showcases two key accomplishments: the production of world-class scientific research and the development of transformative digital infrastructure. By bridging the gap between computational biological sciences and development challenges, WAVE contributes to the global debate on bioinformatics.