The pollinator information network newsletter

January 20, 2026. Vol. 9, Issue 1

Welcome to the first issue of volume 9 of the *Pollinator Information Network Newsletter*

A Happy New Year and a healthy 2026 to all of you!

The *Pollinator Information Network Newsletter* is one of the planned outputs of the project "Diversity of Pollinating Diptera of the Afrotropical Region" funded by the Directorate–General for Development Cooperation and Humanitarian Aid (DGD), as part of the Cooperation Protocol with the RMCA, implemented through the multiannual programmes 2019–2024 and 2024–2029.

This issue is fully dedicated to the participants of our sixth training course on the taxonomy and systematics of pollinating Diptera, held from 13–24 October 2025 at the Grootbos Environmental Centre in Gansbaai, South Africa. For this course, we selected 12 early-career and emerging entomologists from sub-Saharan Africa to receive intensive, hands-on training in Diptera taxonomy. In this issue, you will meet these talented and promising researchers and learn more about their work and aspirations.

The next issue will feature updates on our recent fieldwork, as well as highlights from upcoming conferences and symposia. We will also place additional students and technicians in the spotlight, and announce new MSc and PhD research opportunities for candidates from the Afrotropical Region.

We warmly invite all interested researchers to contribute to future issues of the newsletter. Contributions may include summaries of ongoing research or projects in pollination biology, recent or noteworthy publications, literature highlights, announcements of conferences and symposia, and opportunities for collaboration or funding related to plant–pollinator networks and ecological interactions.

Please send your contributions by 1 March 2026.

Enjoy reading!
the DIPoDIP team

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dipodip.africa

PhD Student Aynalem Gochera Sade – Arba Minch University, Ethiopia

Aynalem Gochera Sade

Selam! (Greetings in Amharic),

My name is Aynalem Gochera Sade, and I was born in the Gamo Highlands around Dorze in southern Ethiopia. Like many children growing up in rural villages, I spent my early years walking barefoot through farms and shrubs, often wearing hand-me-down clothes from my older siblings. Flies constantly buzzed around my face, and the elders would often say, “You’re lazy! Chase the flies away!” At that time, I saw flies only as annoying pests. But my journey through education changed everything. I was fortunate to attend school, something not all my childhood friends had the chance to do and it opened the door for me to enter the scientific world. After high school, I joined Arba Minch University, one of Ethiopia’s top research universities, where I earned both my bachelor’s degree in Natural Resource Management and Master of Science in Agroforestry. Arba Minch became my second home—a place where I learned not only science but also how to navigate Ethiopia’s rich diversity of cultures and lifestyles.

Surrounded by the region’s rich biodiversity and agricultural potential, I developed a deep interest in ecosystem services within agroforestry systems. This passion led me to pursue my current PhD in Biology at KU Leuven, Belgium, within the Unit of Ecology, Evolution, and Biodiversity Conservation. My doctoral research—supervised by Prof. Olivier Honnay, Prof. Bart Muys, and the late Dr Simon Shibru, along with Dr Yonas Ugo from Arba Minch University—focuses on “Ecosystem Services Provisioning by Agroforestry Systems in the Lowlands of the Southern Ethiopian Rift Valley.”

A key aim of my PhD is to study how agroforestry systems serve as habitats for beneficial insects. In our preliminary observations on mango-based agroforestry systems, we noticed visits by various Diptera (flies) and parasitic wasps, which, respectively, may act as potential pollinators and natural enemies of the mango white scale—one of the major pests affecting farmers currently.

A living laboratory: This productive homegarden, one of our key study sites for pollination research in the Arba Minch lowlands, demonstrates how agroforestry structures support vital pollinator habitats. Photo: Aynalem Gochera, August 13, 2025.

However, despite our interest, I realized that I lacked the skills to properly identify these insects. Many researchers at Arba Minch University face similar challenges due to limited training and resources in insect taxonomy, despite our strong commitment and governments areas of interest for our university to research and community engagement in Biodiversity conservation and management.

Aynalem collecting Diptera with a hand net at the 2025 DIPoDIP entomological training course.

This changed when I had the opportunity to participate in the Training on the Taxonomy and Systematics of African Pollinating Flies (2025), held at the Grootbos Foundation in South Africa. This intensive program completely shifted my focus and strengthened my passion for ecosystem and entomological research. Through the training, I gained practical knowledge in identifying pollinating flies, especially Dipteran families such as Syrphidae (hoverflies), Calliphoridae (blowflies), and Bombyliidae (bee flies) as well as techniques for preserving specimens and using various trapping methods, including hand netting, sweep netting, pan trapping, and Malaise trapping.

The training greatly improved my ability to identify insects from family to species level and inspired me to conduct more taxonomic, ecological, and pollination-related studies. I am now eager to share this knowledge with my colleagues at Arba Minch University and agricultural experts in the Gamo Zone so that we can work together to advance research and education on pollinators in the Abaya-Chamo catchment in south Ethiopian rift valley. This training also connected me with inspiring researchers in the field of Dipterology, and I am deeply grateful to the DipoDip Project organizers and all the collaborator for such an impactful course. If anyone plans to work on fly research in Ethiopia, count me and Arba Minch University in! Today, I am no longer chasing flies away, instead, I am chasing flies, eager to study and appreciate the delicate wings that whisper the secrets of our Earth.

Left: Moment of success and learning! Celebrating the successful installation of Malaise traps at the Grootbos Foundation in South Africa, an invaluable experience that brought new insights and positive feedback. Right: From fruitful talks to a beautiful backdrop! Celebrating a successful meeting and new partnerships with experts from across Africa in Hermanus.

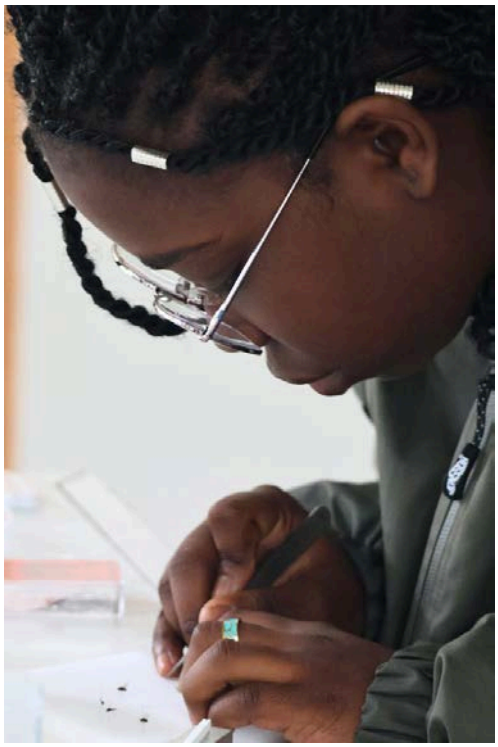
Research Intern Kgomotso Morake – Grootbos Green Futures Foundation, South Africa

Kgomotso Morake

I have always believed that if you study something for long enough, you begin to understand it deeply and, eventually, you might even fall in love with it. This is exactly what happened to me with flies.

My name is Kgomotso Morake and I am an aspiring Conservation Ecologist. I hold a degree in Conservation Ecology and Entomology and throughout my studies I have had numerous interactions with insects. While my fascination of them grew over time, flies were never high on my list of favourites – at least, not yet.

Currently, I am a Research Intern at Grootbos Green Futures Foundation, where my primary responsibilities include the collection, pinning and identification of insects. Even as I worked closely with many insect groups, flies remained somewhat under the radar for me. I knew that they played crucial ecological roles, but I hadn't yet discovered just how remarkable they truly are.



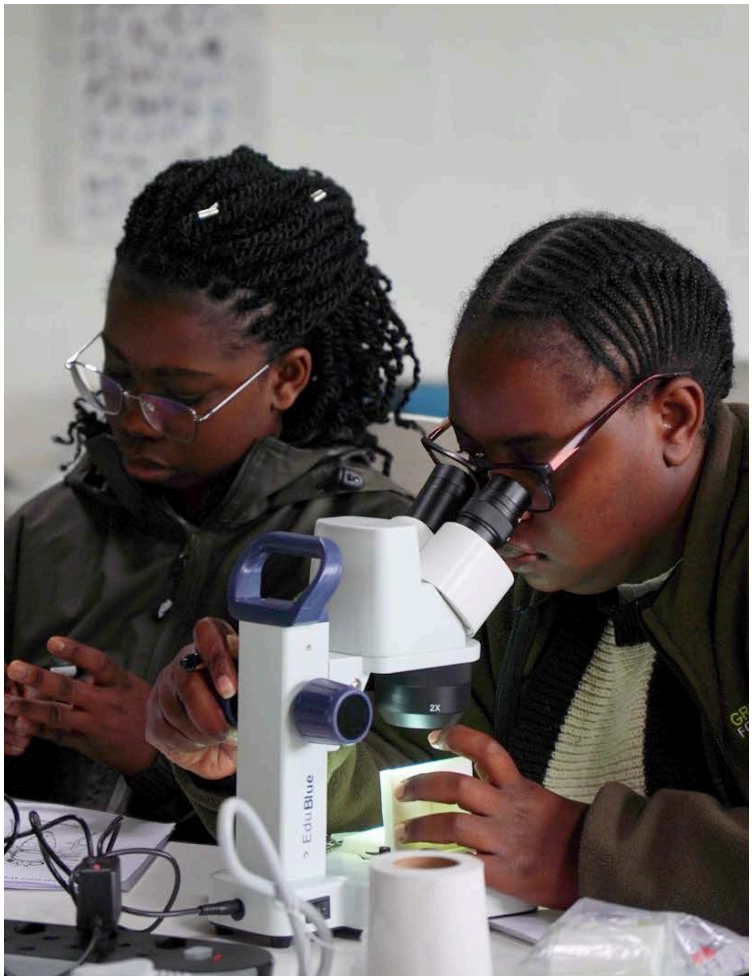
Kgomotso pinning.

That changed when I applied for the 6th Training Course in Taxonomy and Systematics of African Pollinating Flies as part of the Diversity of Pollinating Diptera in Afrotropical biodiversity hotspots (DIPoDIP) Project. I wanted to be able to identify and help to understand the fly assemblage found at my workplace, I was not expecting to completely fall in love with the intricacies of flies.

During the course we were trained in both passive (trapping) and active (using sweep nets and hand nets) methods of collecting flies. We were provided with all the equipment needed for collecting, my favourite being the pooter (aspirator), as it allowed for effectively collection of smaller insects without damaging them. We also refined our insect pinning techniques, learning invaluable tricks to make the process more precise and efficient.

The next challenge was identification. Using the Manual of Afrotropical Diptera book (Volume 1, SURICATA 4, 2017), which was graciously provided to us, we learned to key different flies down to the family and genus level. The process was demanding but deeply rewarding, as each specimen revealed more about the beauty and diversity of these often-overlooked creatures.

6th Entomological Training Course in Taxonomy and Systematics of African Pollinating Flies Group Photo, South Africa, 2025.



Kgomotso identifying Diptera at the 2025 DIPoDIP entomological training course.

During our off times we got to explore the valleys and mountains of Grootbos as well as the town of Hermanus. As the course was hosted at my workplace, I had the joy of showing everyone around. This was a great joy because it gave me the opportunity to explore and discover different insects and plants that I haven't seen before.

This course was truly an inspiration, not only did I meet some of the most amazing people from all over Africa and Belgium, but I also gained a skill that will stay with me throughout my career. I will be using my Diptera identification skills to identify the local population of flies and to understand the ecological dynamics of pollinating flies found within our region. The more we understand these dynamics, the more we can manage and conserve the whole system.

PhD student Natanael Ndilenga – Gobabeb, Namibia

Natanael Ndilenga

I am a PhD Student Associate at the Gobabeb - Namib Research Institute, Namibia, and a doctoral candidate at Stellenbosch University under the supervision of Prof. Allan Ellis. Gobabeb is one of the most remarkable places in Namibia, not only for its striking beauty but also for the unique convergence of three adjacent ecosystems: the Namib Sand Sea to the south, the ephemeral Kuiseb River's riparian savanna, and the gravel plains to the north. These sharply contrasting habitats support an exceptional degree of endemism in both flora and fauna, making Gobabeb a natural laboratory for ecological and evolutionary research. My PhD research investigates the pollination biology of *Acanthosicyos horridus* (!Nara), a dioecious, leafless cucurbit endemic to the Namib Desert. !Nara forms massive hummocks that stabilize dune sand and sustain desert wildlife, yet little is understood about how this species maintains continuous reproduction under extreme aridity. One of my dissertation chapters focuses on identifying the biotic and abiotic determinants of fruiting success in !Nara.

Nata in the frame of his PhD study species (*Acanthosicyos horridus* (!Nara)) at Gobabeb.

Gobabeb and the three beautiful ecosystems.

Under the same supervisor, I completed my MSc in Botany at Stellenbosch University in 2023, graduating cum laude for my study on the pollination biology of *Welwitschia mirabilis*. *Welwitschia*, the sole native gymnosperm of Namibia, is a living fossil and a true anomaly of the desert. Its reproductive ecology defies conventional expectations for both gymnosperms and desert plants. Beginning in 2019 with my Honours research at the University of Namibia, I focused on the role of insects in *Welwitschia* pollination. My MSc work confirmed that flies, especially Mythicomyiidae, are the primary pollinators, with wasps also contributing, while bees appear largely excluded. Unexpectedly, we discovered that *Welwitschia* exhibits facultative apomixis, a phenomenon previously unrecorded in situ in gymnosperms.

Left: Nata with Aynalem Gochera Sade from Ethiopia (and Kgomotso Morake in the background, from South Africa) collecting insects from a pan trap. Right: Nata practicing how to position a fly for pinning using a watchmaker's forceps.

From early in my academic journey, I realized that entomology is central to understanding plant-insect interactions. This insight, combined with my current research focus, led to my selection for an intensive training course on the taxonomy and systematics of African pollinating flies, held at Grootbos Private Nature Reserve, South Africa, from 13-24 October 2025. I was the sole participant from Namibia, which made this a particularly special experience. To my knowledge, Namibia currently has no trained dipterists, and I am the only researcher specializing in pollination ecology in the country. This places me in uncharted waters, but it also presents an exciting opportunity. With a deep passion for teaching and a long-term goal of becoming a lecturer, I aim to share the knowledge and skills I gained during the DIPoDIP course with colleagues and students in Namibia, and hopefully inspire the new generation to pursue entomology. During this life-changing training course, I gained hands-on experience in collecting, preparing, and identifying Diptera. I learned how to catch flies using sweep nets, entomological nets, and pooters; how to properly pin and curate specimens; and how to assemble and deploy both small and large Malaise traps independently. Before the training, insect identification was an intimidating task that I relied on external experts to perform. Now, I am confident in identifying flies to at least the family level, if not to genus level on my own.

I plan to share these skills with my colleagues at Gobabeb and to establish a reference collection of Namib Desert Diptera for future research. I hope that when my trainers (Dr Kurt Jordaens and his team) visit Gobabeb one day, they will see a tangible legacy of their mentorship. In just two weeks, I acquired knowledge and skills that will shape the rest of my scientific career. This experience deepened my passion for entomology and confirmed my desire to continue working with insects and pollination systems in the Namib Desert and beyond.

Left: Nata being assisted by junior trainer Dr Genevieve Theron with the Diptera identification key, while fellow participant Kim van den Heever attempts to identify a fly specimen under the microscope. Right: Nata being shown by Dr John Midgley how to tie a knot for the Townes style Malaise trap.

From Limpopo Grasshopper Hunts to African Pollinator Research - Growing a Career Rooted in Curiosity and Conservation

Nsovo Happiness Baloyi

Greetings! My name is Nsovo Happiness Baloyi, and I currently serve as an Assistant Researcher in the Conservation and Research Unit at the Grootbos Foundation. My journey with insects has been anything but linear, shaped by childhood experiences, academic exploration, and a renewed appreciation for the tiny organisms that hold ecosystems together. I grew up in Limpopo, where catching grasshoppers for a snack was a normal pastime. Back then, insects were simply part of daily life. Ironically, after moving to urban areas, I developed a fear of them, a fear that would later transform into deep fascination. My academic path began with studies in Botany and Biochemistry, eventually leading me to pursue an MSc in Agronomy.

My real re-introduction to insects came unexpectedly when I worked as a field assistant to a PhD candidate, helping collect and process insect specimens. It was during this hands-on work, peering through a microscope at even the smallest insects, that I discovered just how self-sustaining, complex, and beautifully adapted they are. That was the moment my appreciation for entomology took root.

Field collection of insects on Grootbos as part of the focal species insect survey project looking for syrphids, monkey beetles and ants.

Today, I'm privileged to work with insects professionally at the Grootbos Foundation, contributing to research and conservation efforts within one of South Africa's most ecologically significant landscapes. My role allows me to participate in specimen collection, insect monitoring, and biodiversity documentation, work that continues to fuel both my curiosity and passion.

In October 2025, I had the honour of participating in the 6th Training course in Taxonomy and Systematics of African Pollinating Flies. This experience expanded my skills beyond family-level identification, introducing me to specimen handling, field trapping techniques, processing methods, and even identification up to genus level, an exciting new territory for me. The training deepened my understanding of pollinating flies and strengthened my confidence as an emerging entomologist.

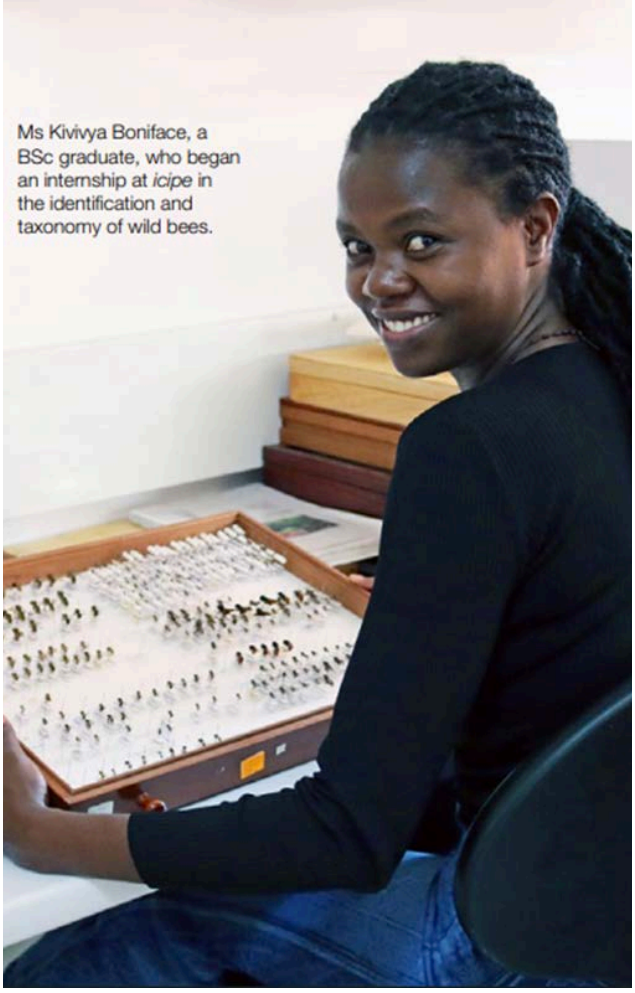
Going forward, I hope to use the knowledge I've gained to train interns in the entomology programme at Grootbos, contribute to community learning, and share my enthusiasm with visiting guests and school groups. Inspiring others, especially young people, to appreciate insects and understand their vital ecological roles is one of the most rewarding parts of my work. I remain committed to growing as a researcher, contributing to conservation through evidence-based practices, and helping foster a community where insects are valued for the essential roles they play in sustaining life.

Left: Pinning at Diptera training course with junior lecturer Carly Vlotman. Middle: October 2025 Diptera training course field day with volunteer Neriyah Dill. Right: Entomology experience with the kids who happen to be my daughter Nkateko and my niece Angela.

Insect Collection Curator Kivivya Boniface at the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya

Kivivya Boniface

Hello, I am Kivivya Boniface, currently serving as an Insect Collection Curator at the International Centre of Insect Physiology and Ecology (ICIPE) in Nairobi, Kenya. My professional interests focus on wild bee taxonomy, pollinator diversity, and insect biodiversity conservation.



Kivivya working in the Biosystematics Unit at ICIPE during het iintern-ship in 2023.

At ICIPE, I am responsible for the collection, sampling, pinning, labeling, and identification of insect specimens, particularly wild bee pollinators. I also train and mentor interns and students in insect taxonomy and general curation, which includes practical skills in specimen handling, preservation, and curation. Besides my laboratory work, I actively train farmers and local communities on insect biodiversity and conservation, emphasizing the ecological and agricultural importance of pollinators in enhancing crop productivity and maintaining ecosystem health.

I am currently involved in a project assessing pollinator communities associated with local crops in Kakamega Forest across three land-use types: urban, agricultural, and forest. The study aims to determine the identity, abundance, diversity and behavior of floral visitors that contribute to crop productivity. The findings will enhance our understanding of the functional roles of different pollinator groups, identify key species, and reveal seasonal and land-use related changes in community composition. This information is critical for guiding habitat management, improving pollination services, and supporting sustainable agricultural production.

Recently I had the opportunity to participate in an intensive training on the Taxonomy and Systematics of African Pollinating Flies, a program that significantly enhanced my understanding of Diptera pollinators. Through this training, I gained advanced knowledge in fly identification, taxonomy and systematics and specimen preservation, as well as a deeper appreciation for the diversity and ecological importance of African pollinating flies. This experience complemented my expertise in bee taxonomy and expanded my capacity to contribute to ongoing research on pollinator biodiversity.

I currently hold a Bachelor of Science in Biology degree from Kenyatta University and aspire to pursue a Master's degree in Entomology with a particular focus on pollinator communities and their role in sustainable agriculture. I am passionate about contributing to pollinator conservation, biodiversity research, and the promotion of ecologically sustainable farming practices.

Bridging Botany, Entomology, and Art

Marelise Faul

My name is Marelise Faul. I am trained as a botanist and entomologist, and in January 2026 I will begin my new role as a Florilegium Research Assistant at the Grootbos Foundation in Gansbaai, South Africa.

I am deeply passionate about plants and insects. During my studies at Rhodes University, I developed a strong interest in pollination biology and completed my Honours project on *Nerine humilis*. This is a plant frequently visited by various nemestrinid long-tongued fly species. This project introduced me to the fascinating and often understudied world of Diptera. These experiences deepened my interest in insects, particularly flies. It also highlighted the critical gap of taxonomic work still needed for this group.

Marelise holding pinned fly specimens for the 2025 DIPoDIP entomology training course.

After completing my Honours degree, I undertook an entomology internship at Grootbos, where I was involved in insect sampling, identification, and curation across several research projects. My work included vegetation surveys, weekly insect identification, and the establishment of a pollen reference collection. I also trained younger volunteers and regularly engaged with the public through science communication activities.

Marelise painting insects for the Grootbos Foundation entomology education room.

In my new role at Grootbos, I will be working closely with the Hannarrie Wenhold Botanical Art Gallery (Grootbos Florilegium). The florilegium offers a space to combine science and art, creating visual stories of the complex fynbos ecosystem. I will assist with research on local plants and pollinators to support the florilegium's expansion. I will draw on the skills I have developed as a scientist to integrate research into the visual world, while also continuing to work with the Foundation's ongoing insect and botanical research.

This year, I had the opportunity to attend a training course in the Taxonomy and Systematics of African Pollinating Flies. The course provided valuable insight into the intricacies of fly taxonomy, their remarkable diversity, and their broader ecological roles within ecosystems.

Looking ahead, I hope to continue working at the intersection of botany and entomology, with a clear focus on blending art, science, and research communication to support conservation and public understanding of research.

Marelise being joyous on a fieldwork trip in Namaqualand.

Curation and Digitization of Insect Collections at the Agricultural Research Council, Pretoria, South Africa

Sarah Mokwena

Hello, I am Sarah Mokwena, currently working as a Research Technician in the Entomology Department of the Agricultural Research Council, Pretoria – South Africa. My interests are in curations of entomological collections and Integrated Pest Management (IPM).

In my current role, I am in charge of the digitization of dipteran specimens, contributing to the preservation and accessibility of entomological data. I also assist with curation of insect collections, pest management activities, and the preparation and maintenance of entomological collections. I am currently working on a project surveying fruit flies (Tephritidae) pest species along the Orange River in the Northern Cape, South Africa. This work supports ongoing research, biodiversity documentation, and informed decision-making in agricultural and environmental management.

Pinning specimens during the 2025 DIPoDIP entomology training

I was happy to participate in the recent training on the Taxonomy and Systematics of African pollinating flies in 2025. This intensive program provided valuable hands-on experience in pollinator identification, the preservation of collected Diptera specimens, and the use of various trapping methods. This experience proved to be highly beneficial and impactful.

I am planning to study towards my masters next year, focusing on *Atherigona* (Diptera: Muscidae) species found in sorghum, examining their biology, population dynamics and their impact on agriculture. This course represented a valuable opportunity to enhance my technical skills, particularly in morphological identification, specimen preparation, and data management skills that will directly benefit ongoing and future research projects.

Fly identification during the 2025 DIPoDIP entomology training.

Looking for fly damage on cucurbits for rearing in the Northern Cape.

Researcher Ezéchiel Mvukiyemugakiza of the Burundi Office for Environmental Protection, Bujumbura, Burundi

Ezéchiel Mvukiyemugakiza

From 2019 till 2022, I obtained a Bachelor's Degree in Environment and Planning from the University of Burundi, with highest honors. From January 2025 to present I work at the Burundian Office for Environmental Protection (OBPE). The OBPE is a public institution that resorts under the Ministry of the Environment. The OPBE is responsible for ensuring the application of environmental legislation, protecting nature, managing forest resources, and implementing programs related to climate change through coordination, monitoring, and capacity-building.

I am a researcher seeking experience in the Diversity of Pollinating Diptera in Afrotropical Biodiversity Hotspots (DIPoDIP2) project .

My tasks at the OBPE are :
1. Collecting specimens in the field using entomological nets and coloured pan traps.
2. Building up a properly pinned and labelled insect collection at the OBPE zoological laboratory.
3. Identifying insect specimens.

We focus on the collection of insects with a role in pollination, and mainly work in Kibira National Park, which is one of Burundi’s famous national parks. Kibira National Park is a lush mountain forest in northwestern Burundi, covering 40,000 hectares on the Congo-Nile Divide. The park plays a crucial hydrological role and harbours an exceptional biodiversity, including chimpanzees, golden monkeys, and numerous bird species, despite threats such as deforestation, highlighting its ecological importance for the country's water and hydroelectric power.

Field collection of insects in Kibira National Park in Burundi.

From the beginning of my career at the Biodiversity Research Department of the OBPE, I understood that entomology is essential to understand plant-insect interactions. This conviction, combined with my current research focus, led to my selection for an intensive training course on the taxonomy and systematics of African pollinating Diptera, held at the Grootbos Private Nature Reserve in South Africa from October 13 to 24, 2025. I was the only Burundian participant, which made this experience particularly enriching.

To my knowledge, Burundi currently has few qualified dipterologists, and I am among them, a researcher specializing in pollination ecology in the country. This situation places me in unfamiliar territory, but also represents a tremendous opportunity. Driven by a deep passion for teaching and with the ambition to become a lecturer, I wish to share the knowledge, techniques, and skills acquired during the DIPoDIP training with my Burundian colleagues and students, and, I hope, inspire the next generation to pursue entomology.

During this transformative training, I gained hands-on experience in collecting, preparing, and identifying Diptera. I learned to capture flies using sweep nets, hand nets, and with various passive traps; to properly pin and preserve specimens; and to independently assemble and deploy Malaise traps of different sizes. Before this training, insect identification was a daunting task for which I relied on external experts. Currently, I am able to identify pollinating flies at least down to the family level, or even the genus level. I plan to share these skills with my colleagues, including students, and to establish a properly maintained reference collection of Diptera from Kibira National Park for future research.

I sincerely thank my instructors (Dr Kurt Jordaens and his team) and invite them to visit Kibira National Park someday so that they can experience the tangible legacy of their mentorship. This experience deepened my passion for entomology and confirmed my desire to continue working with pollinating insects and pollination systems in different regions of the country.

From Orchards to Insect Collections: Strengthening Pollinator Science for Africa's Food Systems

Anne Christine Ochola

I am Anne Christine Ochola, a PhD candidate in Pollination Ecology at the University of Chinese Academy of Sciences, Wuhan Botanical Garden, in the Laboratory of Plant Reproductive Ecology and Pollination Ecology. While my doctoral training is based in China, my research is firmly grounded in Kenya, where I work closely with the Sino-Africa Joint Research Center (SAJOREC) at Jomo Kenyatta University of Agriculture and Technology and the National Museums of Kenya's Centre for Bee Biology and Pollination Ecology, where I process samples and conduct pollinator identification.

My PhD research examines how pollination services influence avocado fruit quality and yield, and how landscape composition and configuration shape pollinator communities in Kenyan agricultural systems. This work is driven by a pressing question: how can pollination services be sustained to support food security while conserving biodiversity?

In October 2025, I had the privilege of participating in the training course on the Taxonomy and Systematics of African Pollinating Flies. This intensive, hands-on program addressed a critical gap in African pollination research—limited taxonomic capacity for non-bee pollinators. The training strengthened my skills in dipteran morphology, classification, identification, and field collection techniques, including pan trapping, sweep netting, hand netting, and malaise trapping, as well as specimen preservation, pinning, and curation.

Netting during the training and my fieldwork.

The program focused on key pollinating fly families such as Syrphidae, Bombyliidae, Nemestrinidae, Calliphoridae, Rhiniidae, and Tabanidae, deepening my understanding of their taxonomic and ecological roles in both natural and agricultural landscapes. This expertise directly enhances the scientific rigor of my research by enabling more accurate classification of pollinator communities and stronger interpretation of pollination services.

Beyond academia, I am the founder of the PolliGuard Initiative, a science communication platform that works with farmers, educators, and the public to promote pollinator awareness and conservation. I will integrate the knowledge gained through the training course into farmer trainings, outreach activities, and student mentorship, ensuring that this capacity is shared widely.

Insect identification at NMK.

Farmers outreach on pollinating insects.

Looking ahead, I am committed to strengthening my expertise in pollination ecology and insect taxonomy while building cross-continental collaborations. Through research, training, and science communication, I aim to continue to support pollinator-friendly agricultural systems, resilient food production, and the conservation of pollinating insects across Africa.

Building Skills for Nature-Based Solutions in South African Agriculture

Kim van den Heever

Greetings! My name is Kim van den Heever, and I am a Scientific Technician at the Western Cape Department of Agriculture in South Africa. My passion lies in agricultural entomology, agroecology, and understanding how insect diversity can guide us toward more sustainable farming systems.

In my role at Elsenburg, I conduct both field and laboratory work to support research and advisory services. My responsibilities include setting up and servicing traps, collecting samples, processing specimens, and identifying insects to family level and, where possible, to species level. I also monitor pest and beneficial insect activity across small grain production systems in a Mediterranean climate zone. In addition, I provide knowledge-sharing and informal training to colleagues, students, and visiting researchers, particularly in sampling techniques, insect preservation, and the significance of insect diversity within agroecosystems.

I am passionate about science engagement and actively participate in training sessions for scholars and farmers, where I translate scientific concepts into practical, accessible knowledge. I educate citizens about:

· Pest management using ecological principles
· Insect conservation, with a focus on flies
· Sustainable agriculture practices that protect both yields and ecosystems

These interactions are deeply motivating for me. I believe there is significant value in equipping farmers and young scientists with practical tools, accurate identification skills, and a meaningful appreciation for insect diversity and its role in sustainable agriculture.

This year, I had the privilege of attending the sixth training programe on the Taxonomy and Systematics of African Pollinating Flies, an intensive two-week course that was both inspiring and highly informative. The blend of theoretical instruction and hands-on practical sessions created a dynamic and enriching learning environment. The senior lecturers demonstrated a range of active and passive collection methods.

One of the most empowering components of the course was the practical examination, during which we were required to independently set up the various trapping methods. This hands-on experience significantly strengthened my confidence in applying these techniques proficiently within my own research fields back home.

We also received detailed training on using the Manual of Afrotropical Diptera (Volumes 1–3) to key out Diptera to family and genus level. Having lecturers guide us through morphological terminology using physical specimens was transformative. It fundamentally reshaped the way I observe and interpret insect features. I now approach my specimens with a sharper, more informed perspective.

Perhaps the most meaningful outcome of the program was realizing that I am now equipped to train others such as students, colleagues, and even fellow entomologists, in Diptera identification and entomological pinning techniques. Thus, the training has been a capacity-building milestone in my professional development.

The course also deepened my understanding of the ecological importance of flies in the Afrotropical region. I was particularly inspired by their role in pollinating Namaqualand's iconic wildflowers, as well as their contribution to agricultural systems such as blueberries and mangoes. These insights reinforced my commitment to advocating for the conservation of beneficial flies while promoting ecologically responsible management of harmful species.

I am currently pursuing a Master's in Nature Conservation, focusing on the diversity of Diptera across two contrasting farming systems. This baseline study examines which Diptera families are most abundant, identifies their seasonal activity peaks, and explores how different farming practices influence insect community structure.

The findings from this research will provide an essential foundation for future ecological studies and will inform sustainable pest management planning on the research farm.

Looking ahead, I aim to:
· Continue developing my taxonomic and ecological skills
· Expand my research on Diptera diversity and pollination
· Share knowledge widely through training, outreach, and collaboration
· Contribute to nature-based solutions that empower farmers
· Promote agricultural practices that minimize environmental impacts

The training I received has strengthened my confidence, expanded my network of young African entomologists, and motivated me to continue contributing to a future in which agriculture and biodiversity can successfully coexist.

Bridging the Gap: from Entomology to Sustainable Agriculture

Esther Sembeo

My name is Esther S. Sembeo, a dedicated Tanzanian public servant currently employed as a Research Assistant at the Tanzania Agricultural Research Institute (TARI) under a permanent contract. As a Researcher my passion lies in Agricultural Entomology.

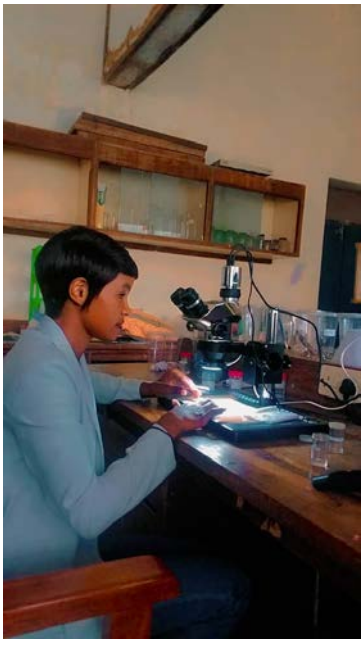
Responsibilities at TARI:
I have been engaged on research activities concerning about Entomology, on establishment of Agriculture trials related to insects. Also worked with Indonesia Palm Oil Association (IPOA) on collection of oil palm pollinating insect on diverse climatic condition of Tanzania. I am responsible for collecting, identifying, classifying, pinning, Labeling and preserving the collected insects from established experimental plots and palm oil trees. Also to take care and to multiplying in the laboratory according to their species.

Furthermore to establish each species to the selected and tagged oil palm plant. However I have been training the student who come for practical training at our Institute specifically on entomology based on collection methods, killing, sorting and identification for the collected insect. Despite my experience, I have been facing challenges in accurately identifying some of the insect especially dipteran flies collected at my workplace.

Hand netting practical at the 2025 DIPoDIP entomology training course.

My interest for insect diversity led me to participate in the sixth training on the Taxonomy and Systematics of African pollinating flies in South Africa in 2025. The training has significantly strengthened my capacity to support research activities at the Tanzania Agricultural Research Institute (TARI). Through this training, I gained practical skills in the collection, killing, sorting, identification, classification, pinning and labeling of pollinating fly species that play vital roles in crop pollination systems across Africa. I also learned modern taxonomic techniques, including collection methods: Sweep netting, hand netting, pan trapping, aspirator/pooter, and different variations of the malaise traps. Also modern taxonomy technique including specimen preparation, morphological analysis and the use of identification keys and digital tools for insect systematics. These skills have improved my ability to contribute to pollinator diversity communitiesto support Sustainable Agriculture Practices.

The knowledge acquired will further enhance my ability to field activities and will be used to train field practical student and farmers. Also enhance ongoing research programs at TARI, participate in regional scientific collaborations and contribute to conservation efforts aimed at protecting essential pollinator species. The training equip me with the necessary skills and help me overcome the identification setbacks I currently face in my work.



Insect identification at the TARI lab.

Pollination field experiment on oil palm.

Inspecting a field plot for insect damage.



Oil palm pollination study.

My PhD research examines how pollination services influence avocado fruit quality and yield, and how landscape composition and configuration shape pollinator communities in Kenyan agricultural systems. This work is driven by a pressing question: how can pollination services be sustained to support food security while conserving biodiversity?

Insect identification at the TARI lab.

Currently I work at Department of crop, I can now support the department in generating accurate and reliable data on pollinator diversity and their roles in enhancing crop yields and identify beneficial species that can be integrated into crops for breeding, agronomy, and ecological studies.

I am committed to promoting sustainable agriculture and integrated pest management (IPM) by advocating for practices that preserve beneficial insects while using ecologically friendly methods for managing destructive ones. However I am looking for MSc scholarship opportunities so I can expand my knowledge and skill in entomology field.

Strengthening Collections, Diagnostics and Research Capacity in South Africa's Diptera Diversity

Nomathamsanqa Mkhize

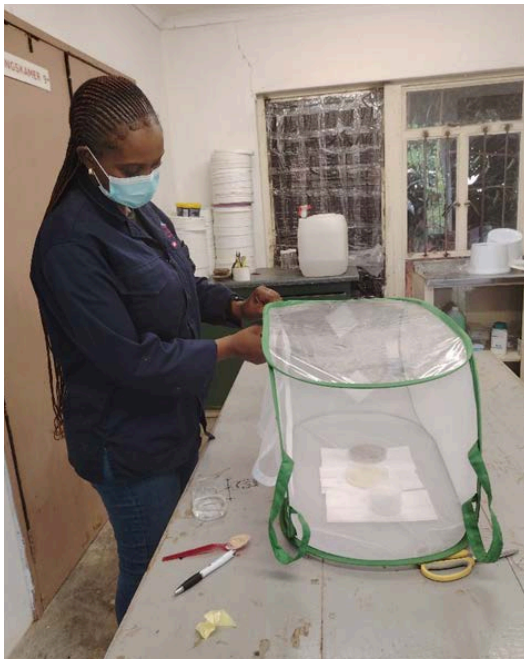
Greetings! I am Nomathamsanqa N. Mkhize, a Research Technician within the Biosystematics Division of Plant Health and Protection, Agricultural Research Council (ARC), Pretoria, South Africa. My professional work is rooted in Entomology, with a particular focus on insect collections management, Diptera diagnostics, and surveillance of economically significant pest species.

At the Agricultural Research Council, I contribute to South Africa's National Insect (SANC) reference collection by performing different curatorial tasks, which include specimen pinning, preservation, pest control monitoring, databasing, temperature regulation, loan management, and preparation of entomological material for molecular work. I also contribute to the national surveillance efforts by conducting trap servicing, identification, and data capture for Sternnoryncha (Hemiptera) pest monitoring, and I compile quarterly reports from the Natural Science Collections Facility (NSCF) for Biosystematics division.

Beyond the core curatorial work, my research interests are in the systematics and ecology of cucurbit-attacking fruit flies (Diptera: Tephritidae). I am currently the Principal Investigator of one of the department's projects, which is examining the diversity, population dynamics, and spatial distribution of fruit flies on different cucurbit hosts in South Africa since 2024. This research will enhance the early detection capacity, inform both morphological and molecular identification systems for fruit flies, and help guide the phytosanitary responses for exported agricultural crops.

Net sweeping practical at the 2025 DIPoDIP entomology training course.

My role also includes transfer of collection-based knowledge: I routinely train students, interns, and visiting researchers in SANC-standard curation, safe handling of entomological material, metadata capture, and diagnostic procedures. As someone who came through the curatorial pathway myself, I value investing in emerging entomologists to ensure the continuity and strength of African collections infrastructure.



Left: SANC visiting group presentation. Right: Fruit fly rearing cage training set up at ARC-TSC.

As an aspiring curator, my interest in Diptera has led me to take part in two training courses: advanced tools for the monitoring and identification of African fruit fly pests (Diptera, Tephritidae) in 2023, and the AfricaMuseum-funded sixth Training Course in Taxonomy and Systematics of African Pollinating Flies (2025). Both of these programs have provided me with taxonomic information, enabled me to distinguish between pollination families such as Syrphidae and Nemestrinidae and major Tephritidae pests while also sharpening my abilities in specimen preparation, handling, field trapping methods, and morphological identification. These trainings have significantly improved ARC's diagnostic support, boosted our participation in Diptera systematics across agricultural landscapes, and strengthened my curatorial skills.

Fruit fly trap set up in a greenhouse.

Looking forward, I am currently pursuing a PhD in entomology, with an emphasis on *Dacus* fruit flies. I want to contribute to research networks focusing on fruit fly taxonomy, pollinator systematics, and insect collection capacity building. I believe that by enhancing the identification frameworks, curatorial practices, and applied research collaborations, we can boost agricultural resilience, biosecurity measures and the ecological understanding throughout Africa.

About the DIPoDIP and DIPoDIP2 projects

The “Diversity of pollinating Diptera in South African biodiversity hotspots” project (DIPoDIP) was a five year project (2019-2023) financed by the Belgian Directorate-general Development Cooperation and Humanitarian Aid through a framework agreement with KMMA. It was a collaboration between the University of KwaZulu-Natal (UKZN), the KwaZulu-Natal Museum (KZNM), Stellenbosch University (SU), the South African National Biodiversity Institute (SANBI), and the AfricaMuseum (RMCA, Belgium). The project is continued as the “Diversity of pollinating Diptera in Afrotropical biodiversity hotspots“ (DIPoDIP2) project (2024-2029) with the following partners: KZNM, SU, the University of Pretoria (UP, South Africa), the Burundian Office for the Protection of the Environment (OBPE, Burundi), the University of Rwanda (UR, Rwanda), and the RMCA. Click on the logos for more information or read more on the project in the forthcoming PINDIP *Newsletters* and on our Facebook page: https://www.facebook.com/pollinatingdiptera/.

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Diversity of pollinating Diptera in the Afrotropical Region

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