AgSpirations

AWARD
African Women in Agricultural Research and Development

AgSpirations: Inspiring Stories of African Agriculture

Volume 4

A Spotlight on One Planet Laureate Candidates

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Overview

When African Women in Agricultural Research and Development (AWARD) launched the inaugural Cohort of its One Planet Fellowship in 2019, its primary objective was to build a pipeline of African researchers leading development of climate change solutions for the continent. AWARD was cognizant of the fact that Africa continues to bear the brunt of climate change, with millions of its smallholders on the frontline of the economic and social consequences of climate change.

The One Planet Fellowship was designed to enhance the leadership, scientific and mentoring skills of its participants and nurture an understanding of the need to make conscious intentional efforts to help the vulnerable communities to not just survive but thrive. As one of the coalitions of the One Planet Summit, the Fellowship's goal was to mobilize young people to work for the planet.

The Fellowship participants are young researchers all under the age of 40 years [at the time of their selection] competitively selected to participate in an immersive experience that fostered intergenerational networks of scientists committed to work on the nexus of agriculture and climate change adaptation.

To date, 434 people from 28 countries have directly participated and benefited in the One Planet Fellowship as Laureate Candidates, Mentors or Mentees (commonly referred to as Learning Partners). The One Planet Laureate Candidates have testified that the Fellowship is turbo-charging their career growth, and sharpening their focus on how their research affects different groups of end users.

This edition of AgSpirations presents inspiring stories of how some of the researchers who successfully competed for a place in the Fellowship are fostering change in their communities, drawing on their experiences in the Fellowship to address one of the pressing needs in our world today.

These stories will give you a sneak preview of the some of the realities of African researchers and reinforce your understanding of why we need to continue investing in enhancing local talent to develop context-specific solutions for African agriculture.

You will meet researchers from the northern part to the southern part of the continent embracing different opportunities to deepen their engagement with communities, while remaining aware of the need to leverage global networks to enhance their work.

We invite you to journey with us across Africa and learn about some of the outstanding African researchers developing solutions for Africa to cope with the changing climate.

434

Number of people from who have directly participated and benefited in the One Planet Fellowship as Laureate Candidates, Mentors or Mentees to date

Algeria

A burning desire to return home and a front-row seat to farmers battling climate change

Sofiane Boudalia harbored a strong desire to collaborate with fellow African scientists for a long time. His work in sustainable food production in Guelma, a small town in the northeast of Algeria, presented limited opportunities for networking and collaboration, especially given that his early career experiences were honed while studying and working abroad in France. The turning point came when Sofiane discovered the call for applications by the One Planet Fellowship. Recognizing it as an opportunity to bridge the gap in a scientific collaboration he deeply desired across the continent, he promptly submitted his application.

But before Sofiane's application to the One Planet Fellowship, and even before his return to Algeria, his higher education journey began in France as he pursued his dream of becoming an engineer. He obtained a bachelor's degree in Biology and Cell Physiology from the University of Burgundy in 2008. He later pursued a master's degree in Food Quality at the National Institute of Agricultural Sciences, Food and Environment in Dijon. This academic journey culminated in a Ph.D. in Food Science, Food Safety, and Toxicology from the University of Burgundy in France.

Despite achieving academic success and living abroad for a decade, Sofiane's roots in Algeria tugged at him. In 2014, the former Algerian president called for citizens living abroad to return and contribute to the country's development. This prompted Sofiane's return and thus began a new chapter of his career in Guelma where he got a job as a senior lecturer at the Department of Ecology and Environmental Engineering at the Mai 1945 University of Guelma.

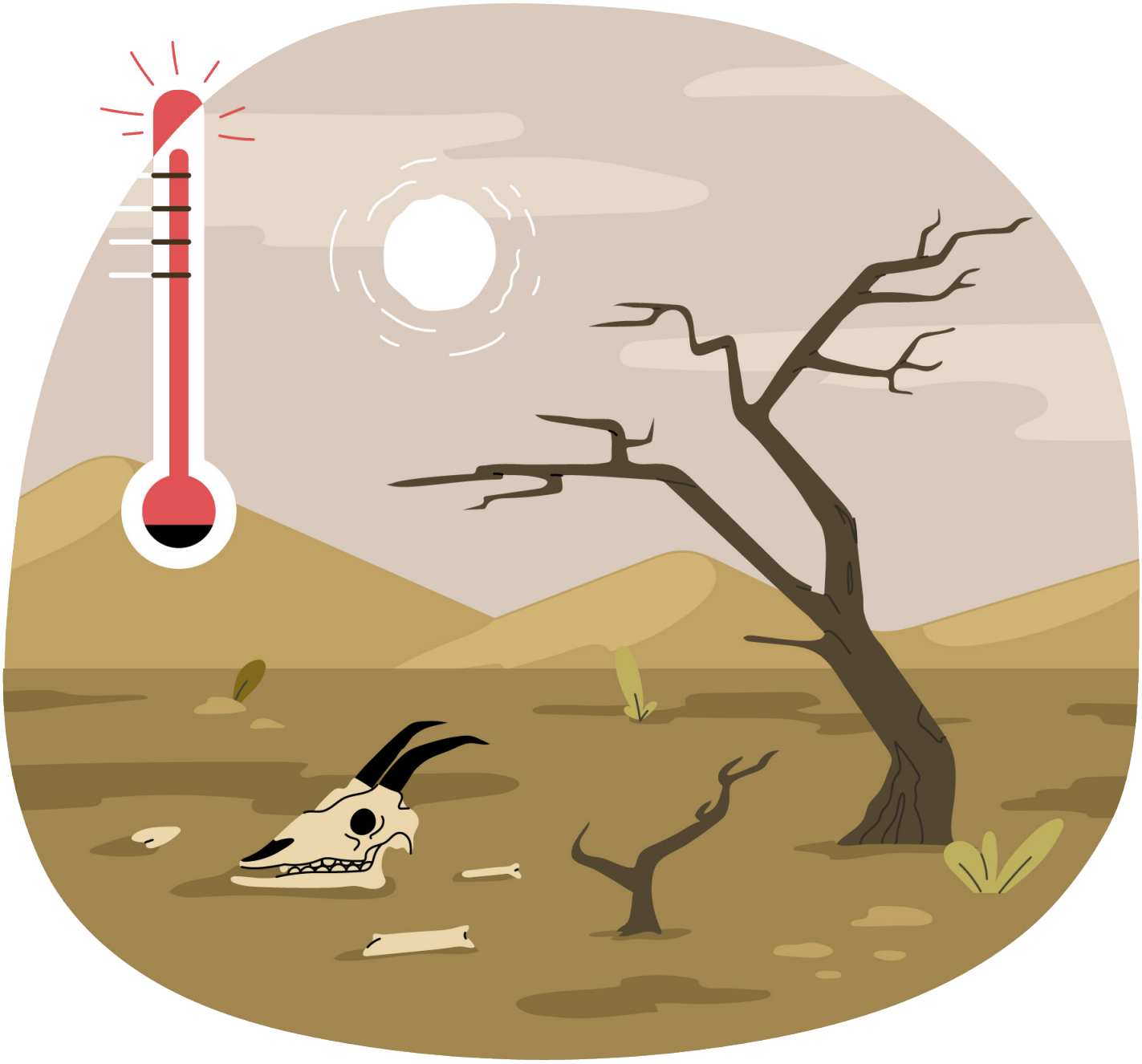
Living and working in Guelma made Sofiane a frontline witness to farmers' challenges, many of which are intensified by climate change. Focusing on the specific needs of the town's farmers, Sofiane redirected the course of his lab's program to address the pressing issues at the intersection of environmental challenges and agricultural practices. Beyond the theoretical realms of academia, he actively engages with the local community, conducting in-depth analyses of farming practices and identifying critical areas for improvement.

One of the standout initiatives that emerged from this hands-on approach was the BOVISOL program. This undertaking, aimed at protecting and reviving a local cattle breed, sought to rectify the unintended consequences of importing European cattle breeds post-Algeria's independence. Sofiane and his team delved into the intricacies of farming in Guelma, addressing the specific needs of small farmers by providing targeted training on aspects such as milking hygiene.

The impact of Sofiane's work extended beyond the laboratory and into the daily lives of Guelma's farmers. Training visits, implemented over three years, addressed immediate challenges, allowing farmers to navigate their struggles with newfound resilience. Through these initiatives, Sofiane demonstrated academic understanding and a profound commitment to creating tangible, positive change at the grassroots level. The parallel between his work in reviving the local cattle breed and the collaborative endeavors within the One Planet Fellowship highlighted the importance of grounding solutions in the unique landscapes they aimed to serve.

As a One Planet Laureate Candidate, Sofiane's journey was propelled across the continent well beyond Guelma, finally allowing him to have exchanges with fellow researchers across Africa. This mirrors the essence of Sofiane's localized efforts in Guelma, where addressing specific needs and understanding the intricacies of local contexts have been crucial.

In this journey back to his roots, Sofiane gained a broader perspective on the intricacies of localized solutions and a deeper understanding of the historical context that shaped agricultural practices in Africa. For Sofiane, the One Planet Fellowship has underscored the potential for positive change when individuals unite to build Africa's more sustainable and resilient future.



Benin

Combating Malnutrition with Baobab, the Tree of Life

Mariette Agbohessou's home was once a paradise of lushness. Her family tended to diverse plant species, from big trees to leafy vegetables. She knew she would recreate this in her own home one day, which kindled an interest in her.

Born and raised in north Benin, Mariette has been the epitome of academic brilliance since primary school. Her excellence in her Certificate of Primary Education (CEP)examination earned her a full scholarship from the state of Benin to study at the General Matthieu Kérékou Military High School for Young Girls (LMJF - GMK), located in Natitingou. In 2011, she graduated from secondary school with a scientific Baccalaureate.

Four years at the military school saw Mariette develop an interest in the force, and she even applied to join the army. Unfortunately, her application wasn't successful. This reunited her with agricultural sciences, and she decided to pursue Forestry and Natural Resource Management in the Faculty of Agronomic Sciences (FSA) at the University of Abomey-Calavi (UAC) on a partial scholarship from the Béninoise government.

Mariette's passion for plant science grew with every moment spent delving into botany and plant systems. In 2015, she graduated with stellar results, earning herself a full scholarship for a Master's in Forest Resource Planning and Management funded by the RUFORUM program at her alma mater.

For her Master's, Mariette chose to study the baobab, a tree treasured across Benin for its nutritional value. In 2018, as she was deep in the forest collecting data for her research, she encountered a scene that opened her mind to other perspectives she could consider when she came across a mother and child gathering fresh baobab leaves. Upon inquiry, she learned they were gathering them for a family meal.

Moved by the woman's determination to defy any peril in the wild to find the freshest leaves and ensure her family benefited from baobab's abundant Vitamin C, iron, and calcium, she felt compelled to make baobab more accessible to women. Mariette envisioned a Benin where each homestead had a colorful garden where trees like baobabs thrived alongside other vegetables. With this, she was confident communities would improve their diets and break free from the malnutrition that plagues the region.

As she laid the groundwork for the idea, she assessed its sustainability and moved from encouraging baobab planting to value-added production. As a result, her idea hatched a business instead, BAO LEAVES, defined by its dedication to producing, processing, and distributing the precious baobab leaves.

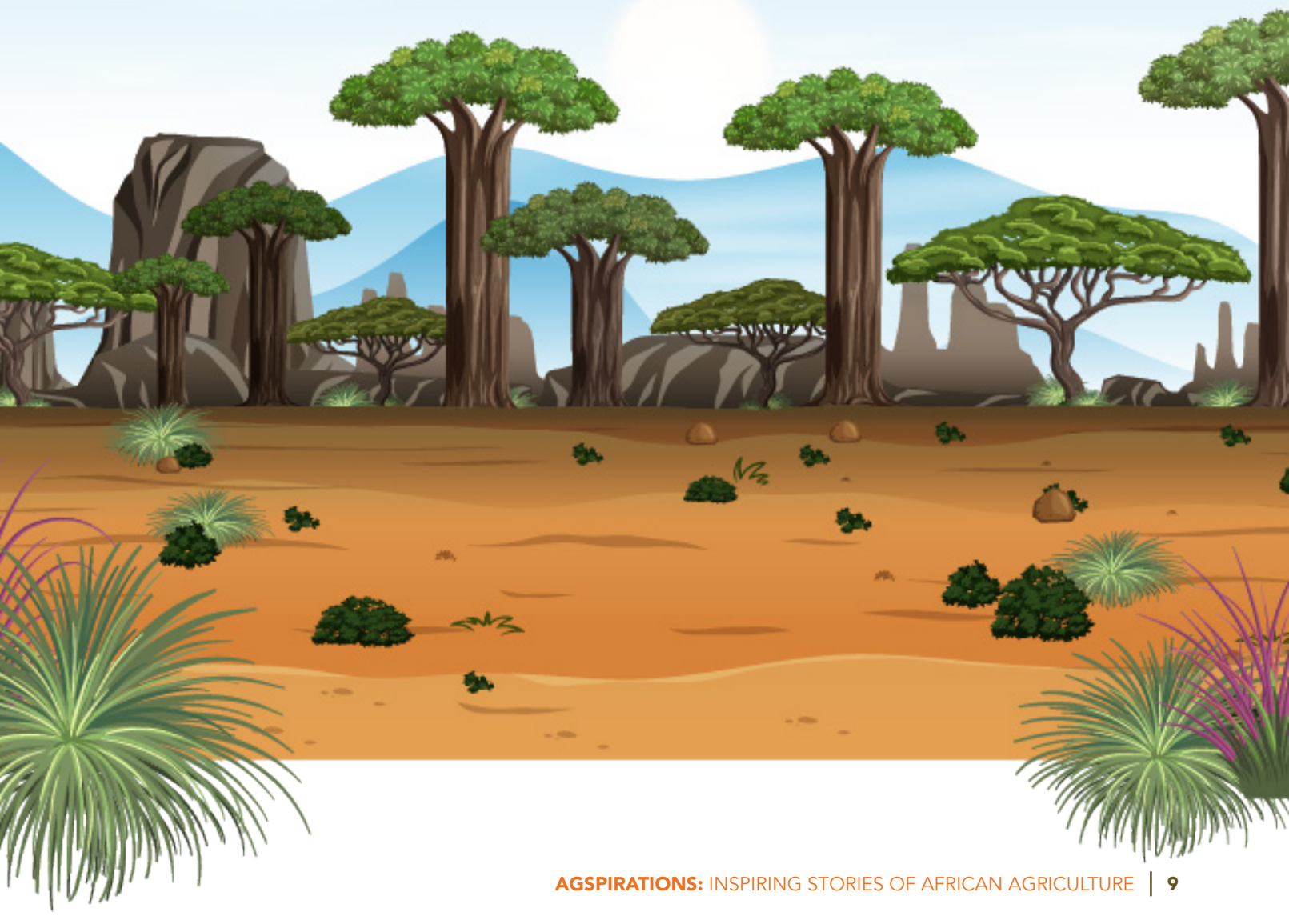
Mariette tested several vegetative propagation methods, such as grafting, layering, and cuttings, to get the ball rolling and reduce baobab's very long reproductive cycle. Afterward, she trained students at an agricultural high school on the different propagation methods. They then taught residents and even passed on the knowledge to parents. This commitment to sharing and infusing her research findings with her community was transformational and was reflected in her master's thesis, which was awarded a distinction in 2019.

Work at BAO LEAVES started officially with Mariette undertaking market gardening for baobabs. When she enrolled for a PhD in

Knowledge, Conservation, and Valorization of Biodiversity at the Botany and Biodiversity Laboratory (LBB) of Cheikh Anta Diop University (UCAD) in Senegal, she focused her research on the domestication and valorization of the African baobab in the face of climate change. She received an intra-African mobility grant from the European Union to facilitate her doctoral thesis. Mariette centered the research around how she could help rural populations adopt Indigenous agroforestry systems resilient to climate change, including processing fresh baobab leaves into dried and powdered form at BAO LEAVES, which ensures the longevity of baobab leaf products while preserving their nutritional value.

Mariette learned about the One Planet Fellowship on social media. She was accepted into the program at a critical point in her research when she needed to bolster her leadership and interpersonal skills to work effectively with rural communities. The Fellowship was a gamechanger for her as she achieved her goal and honed her scientific and research project writing skills. Mariette believes good scientific publications give the researcher more credibility in the scientific community and looks forward to using her refined skills to attract more funding for future projects.

Just like she envisioned growing up, Mariette has recreated her childhood experiences with her baobab market gardens and is inspiring individuals across Benin to nurture their own. She is leveraging her research superpower to promote a healthier, more sustainable, food-secure future for the Béninoise population.



A passion for biodiversity conservation fueled by an orchid

From a tender age, Eméline knew she was destined to follow a scientific path. Agronomy interested her; she was very observant and passionate about vegetation and wildlife. From this, she understood the concepts of conservation and sustainability quite early and placed immense value on nature's preservation for both her generation and those to come. When she earned a scientific baccalaureate focusing on Natural Sciences in 2001, she was admitted to the University of Abomey-Calavi (UAC) in the faculty of Agronomic Sciences.

Her interest in forest ecosystems blossomed, and in 2004, she participated successfully in the prestigious training on Tropical Ecology and Conservation with the Tropical Biology Association (TBA) in Madagascar. A year later, she graduated with a degree in General Agronomy, followed by a degree in Agricultural Engineering in 2006, and emerged as one of the top five in her year group who were awarded a German scholarship (BIOTAT - West Africa III) to pursue a two-year Masters in the Development and Management of Natural Resources.

During one of her inventory projects in November 2011, Eméline came across a small orchid plant of resplendent beauty in the middle of Kota Forest gallery, the forest lung of Benin's Natitingou town. The orchid had grown on the back of a tree and was the only one of its kind in the vicinity. Focused on her project, Eméline committed the flower to memory and promised herself that she would return after her project was completed to take its seeds and propagate the ornamental plant. Little did she know this would be her last time laying her eyes on the orchid and the forest gallery.

One day, at the end of one of her master's classes, where she had spoken about the orchid, an opportunity to visit the forest presented itself in the form of a student of hers who was enamored by her description of the orchid. The student - Nassirine, approached Eméline and expressed her interest in the flowering plant, saying, "I'd like to work on their (orchid's) reproduction for my final dissertation." Eméline was thrilled by Nassirine's interest, and they planned an exploratory visit to the Kota Gallery to collect the flower seeds. They embarked on a five-hour journey to the forest - three hours by road from Parakou to Natitingou and two hours on foot to the gallery, where strange phenomena met them. There was no forest in sight. Shattered, Eméline wept for her orchid and the lush greenery a corn field had now replaced.

As she processed her shock, an old man who had been engrossed in weeding shared, "My daughter, we had to cut down the trees to be able to plant the crop fields you see here. That's because there's no fertile land elsewhere except here and along the rivers, where the soil retains water a little longer. You know that rains are getting rarer these days, and the droughts are longer and harsher!"

When they returned to Parakou, she committed to channeling her efforts into advancing the course of conservation for natural resources in the wake of climate change and intense human activity. As a result, Eméline focused her doctoral research thesis on the Ecology and Conservation of Plant communities at UAC. She also published, alongside other articles, a feature on the conservation status of Orchids, emphasizing that this floral species sheltered in fragile habitats is threatened with extinction in Benin by continuous degradation of habitats. She went on to create awareness of the value of forests. She championed and researched how to improve soil fertility for better crop yields, a positive move for biodiversity conservation and local populations' well-being.

In 2014, she enrolled in a two-year postdoctoral program at the University of Pretoria in South Africa and, after graduating, was promoted to Assistant Master at the African and Malagasy Council for Higher Education (CAMES) Universities. Back home in Parakou, she was also promoted to Deputy Head at the Department of Planning and Management of Natural Resources in the Faculty of Agronomy.

Despite all these accomplishments, Eméline did not purposefully reflect on the learnings of her journey until she became a One Planet Laureate Candidate in 2021. As a Fellow, she could take stock of her achievements, develop a roadmap for her career, and define her goals for the years ahead. She now celebrates every win, be it a publication, supervisory duty for her students, or even participation in an event. Additionally, she attests to the powerful boost her leadership skills experienced at the Fellowship and is more appreciative of the key role played by her mentor in her growth.

Eméline is determined to use local solutions to address the impact of climate change on Africa's agricultural lands and help ensure farmers' resilience. She is currently working on developing an improved variety of Duckweed, a high-protein aquatic vegetable that's neglected in Benin, to help increase food security. She is actively using what she learned from her Fellowship to seek funding and forge international collaborations toward this goal.

At the University of Parakou, she is awaiting confirmation as a permanent Lecturer-Researcher and plans to become a full professor in the next few years. She also aspires to hold the position of Dean of her faculty to contribute to its development and increase the institution's visibility on the academic map.

As a member and leader in different bodies nurturing young talent in Benin, including the Academy of Young Scientists of Benin, she continues to inspire many and serve as a role model for young women in science. Eméline urges young people, especially those from humble backgrounds, to hold fast to their dreams as nothing is impossible where there is a will and determination to succeed.

Restoring Livelihoods with Geocarpa Groundnut

Kafoutchoni Konoutan Medard Thibault burns with a passion for success. Every move he makes is an intentional step towards elevating himself, and he seizes every opportunity that comes his way. Renowned for his extensive research travel experience, Medard, a Research Assistant in the Faculty of Agronomic Sciences at the University of Abomey-Calavi (UAC) in Benin, learned about the One Planet Fellowship from his colleagues who were part of the program's first cohort. He was drawn into the program by the transformational skills his colleagues had gathered and was intrigued by the mentorship training and capacity building it offered. He applied for the Fellowship and, in 2020, became a One Planet Laureate Candidate, bringing on board extensive knowledge of Agronomy and a desire to improve the livelihoods of smallholder farmers in the face of climate change.

Like every other person, Medard has a story underpinning his determination for self-improvement and entry into Agronomy. Hardship was the mark of his childhood, as he was born to a widowed and young mother whom his family cast away to the belly of abjection. They were often penniless, and he was often forced to go to school on an empty stomach.

Pushed to the limits by adversity, Medard decided to find ways to sustain his family. He began by growing vegetables and tubers in front of their house, which brought food to the table. This motivated him to cultivate even more; with time, his mother could sell some of the produce for an income.

This brought some stability into Medard's life, allowing him to focus on his education. He excelled in primary and secondary school. Unfortunately, he did not attain the pass rate for Medicine he deeply desired in his High School Diploma in Maths and Natural Sciences, so he enrolled in the CBG program (Chemistry, Biology, Geology) at the University of Abomey-Calavi in October 2007.

Once again, he was plagued by the challenge of finances, as the cost of university was out of reach for him. This time, he had the experience and determination to overcome this, so he tutored first-year students and, through recommendations, gave private lessons to senior secondary school students. In two years, he had managed to clear his school fees and even help his mother.

Medard's first academic victory came in 2012 in the form of a bachelor's degree in Natural Sciences. He was beyond delighted by this achievement and entertained the possibility of pursuing a master's degree in Genetics. Aware of the financial constraints before him, he held off on the idea and resorted to seeking employment to earn a livelihood.

Medard landed a job in computer maintenance at the Construction and Public Works (BTP) Company, where he served diligently for over three years, advancing from entry-level to a management role. During this period, a national pilot recruitment was launched in Benin, and being one to seize opportunities, he threw his hat into the ring. Despite appearing among the top 30 out of the 50 who were to be recruited and landing a scholarship for the same, Medard's position was awarded to another candidate. This crushed his hope, and instead, he redirected his focus to Agronomy.

With the money he had saved while working, Medard eventually enrolled in a master's degree in Genetics as he had desired and dedicated his time and expertise to improve people's response to climate change. He focused on the genetic improvement of Doyiwé (Geocarpa groundnut), a neglected legume indigenous to West Africa, grown by small-scale farmers in Ghana, Nigeria, Togo, and Burkina Faso and one of the most expensive nuts in the world. Medard recognized the nut's value from a nutritional and drought-resistance perspective as a food crop that could guarantee food security and help reduce extreme poverty as it is a high-value crop.

He aimed to develop resistant varieties of the nut. When he wrote his first paper on

the legume, his zeal to better the lives of smallholder farmers stood out, earning him a grant from the International Foundation for Science (IFS) to fund his project. Since then, Medard has been trudging upwardly. He obtained his master's degree in 2015 and received the Gregory Award for outstanding work as a young scientist.

When he first joined the Fellowship, he identified colleagues within his cohort with similar and complementary research topics and forged strong networks with them. The program boosted his knowledge of current issues on climate change and agriculture. It pushed him to develop new ideas on how to align his research objectives with the needs of communities. In December 2023, he earned his Ph.D. in Genetics and Plant Improvement, marking his first step on the journey to becoming a full professor as he desires. Today, he embodies the resilience every scientist should cultivate and is a testament to the power of relentlessness in pursuing our dreams.

Burkina Faso

Pioneering the Shift to Nature-Based Fungicides

> "Opportunity often comes in the form of misfortune."

This well-known adage carries profound wisdom, an encouraging beacon for those navigating life's obstacles. Its sentiment resonates deeply in Remy Kindanloun Bationo's childhood recollections. Hailing from a modest background in Réo, a city in Burkina Faso, Remy grew up observing his father's tireless efforts on the family farm. This labor supported Remy's education and fulfilled the family's basic needs. However, a crisis abruptly unfolded one year after a particularly abundant harvest.

One morning, as Remy's father opened a granary filled with freshly harvested millet and maize, a disheartening sight awaited him – mold. Faced with the daunting challenge of feeding his family, he reluctantly resolved to go to the market and buy other cereals. It was then that Remy's father disclosed the root of his aversion to shopping from the market – in his youth, he had fallen victim to poisoning from cereals acquired by his father, Remy's grandfather. Fortunately, Remy's grandmother, who was an herbalist, was able to treat her children after the poisoning using indigenous remedies.

Hearing these stories ignited Remy's curiosity about biopesticides. Eager to salvage his father's harvest, he sought guidance from his grandmother. She showed him an array of pungent-smelling plants, which they placed on charcoal embers in the granary before storing new crops. Inspired by this transformative experience, Remy vowed to one day aid other families in preserving their harvests. In this way, Remy discovered an opportunity amidst a great misfortune.

As his interest in eradicating cereal pests grew, Remy embarked on a career as a researcher. Following completing his high school diploma in 2007, Remy left Réo for Ouagadougou – Burkina Faso's capital. There, he enrolled in the Life and Earth Sciences program at the University of Ouagadougou, now known as the Joseph KiZerbo University. In his second year, he specialized in chemistry, earning a bachelor's degree in Pure Chemistry in 2010. Building on this foundation, he pursued a Master's in Phytochemistry in 2011, specializing in bioactive molecules with anti-fungal and anti-radical properties. Remy then enrolled for a Ph.D. in Phytochemistry at Joseph KiZerbo University, solidifying his commitment to studying and applying plant-based compounds to improve agricultural practices.

As a phytochemist, Remy is dedicated to advancing post-harvest food conservation by utilizing local products. His research is geared towards developing innovative solutions to enhance farmers' resilience against toxins present in cereals. Through extensive studies, he has unveiled a close correlation between climate change and the reliance on synthetic pesticides in agriculture. Remy's research not only aims to mitigate the impact of toxins on crops but also addresses the broader environmental and human health concerns associated with chemically synthesized pesticides. These synthetic compounds have been proven hazardous, adversely affecting the environment and human well-being. By promoting local products and organic alternatives, Remy envisions strengthening producers' resilience and elevating the overall quality of harvested food.

In recognition of his commitment and scholarly

contributions, Remy was selected as one of the laureates of the One Planet Fellowship in 2020. This prestigious Fellowship has significantly contributed to Remy's and his institution's capacity building and provided a platform for him to disseminate knowledge, particularly among young researchers and colleagues. The One Planet Fellowship continues to be a crucial pillar in Remy's journey, fortifying his mission to develop local solutions for post-harvest food conservation and advancing a more sustainable and resilient future for agriculture in Africa.

Côte d'Ivoire

Wielding the Power of Education for Agricultural Development

Education is the key to societal transformation and development and is the tool Fatoumata Ouattara, a young agricultural scientist from Côte d'Ivoire, is using to bring change to her people. Fatoumata's journey in education, however, is not just a self-driven pursuit; it has its roots in family history. As a young man, Fatoumata's father, Djoman, set forth from his lush, arable Famienkro village to the capital city of Abidjan, where he was so enraptured by vehicles that he sought a job as a taxi driver. Djoman fulfilled his driver duties passionately, eventually earning an interview for the coveted role of a private chauffeur. This was not just an opportunity for career advancement but could also change his life and family.

However, excellent driving skills were not enough, as Djoman soon found out. A requirement was that Djoman have a written test but having come from a village where education was unheard of, Djoman could neither read nor write. And so, his dreams of transforming his life through a new position were extinguished. Heartbroken, Djoman swore to ensure all his children received an education.

In time, Djoman's dream of educating his children came true, and Fatoumata, his youngest child, has taken the achievement of this dream to its highest level. She is currently pursuing a Ph.D. in plant production at the University of Ibadan, where she is researching plant breeding. When Fatoumata visited the village of Amenkro, she was fascinated by the enormous yams, fresh chili, and beautiful aubergine plants that flourished there.

Over time, Fatoumata was greeted by a distributing trend. She came across yam plantations with drooping stems that looked like they had been burnt and stripped of their leaves. On further investigation, she realized that the same phenomenon was common across half the farms in the village.

Yam is a staple food and commercial crop for the village, and to have blighted plants at a time when the village should be ringing with harvest songs and granaries full of the abundant blessings of their yield was unprecedented.

But literacy was the bridge from misery to hope, and it was time for Djoman's investment in education to bring hope back. After carefully assessing the yams and witnessing how affected her community was, Fatoumata approached the villagers with a promise to leverage science to address their issue.

After investigations, she informed them that the plague that had stripped leaves off their yams and jeopardized their harvest was a common fungal disease called anthracnose that was worsened by changes in their climate. However, the problem could be averted by investing in highly resistant yam varieties using a Multi-trait Genotype-Ideotype Distance Index that would enable the identification of yam types with the best genotypes and varieties that were immune to disease.

Although the villagers couldn't fully comprehend the scientific concepts Fatoumata shared with them, they were confident in their daughter's scientific knowledge to solve their problem. Fatoumata had rekindled their hope, and they happily provided her with all the samples and information needed for research.

With their blessings, Fatoumata set off to the International Institute of Tropical Agriculture (IITA) in Nigeria, where she identified six yam

genotypes from a panel of 389 for study. It was at IITA that Fatoumata learned about the One Planet Fellowship implemented by AWARD. Since becoming a One Planet Laureate Candidate, AWARD has been instrumental in steering Fatoumatta's goal of improving Côte d'Ivoire's agriculture. She has received leadership training and upskilling and met a vast network of researchers with whom she's actively collaborating.

Fatoumata aims to use the knowledge and skills she gained from the Fellowship to form a robust research team to disseminate effective agricultural practices to communities and promote sustainable agriculture.

Through the education her father so deeply desired for her, Fatoumata is changing the trajectory of her community through science-based solutions. She is a beacon of education's pivotal role in agricultural development and poverty eradication.

Ethiopia

From Soil Science to Social Impact

Agriculture in Africa is vital for economic development, food security, and societal well-being. Semira Mohammed Beyan is one of this sector's linchpins, driven by a passion for transforming challenges into opportunities. Hers is a remarkable journey, from an unexpected start in plant production to earning a PhD in Agriculture – a testament to her resilience, determination, and commitment to creating positive change.

Semira's academic journey began with a twist of fate. She aspired to become a pharmacist but, through fate, was enrolled in plant production and dryland farming at Hawassa University. Upon graduating with her first degree, her career took root as a crop expert at the Agricultural Bureau in Northern Ethiopia.

The turning point came when she pursued a Master of Science in Soil Science at Hawassa University, supported by a Canadian International Development Agency (CIDA) scholarship. There, she discovered a burgeoning interest in her coursework and began trying to succeed in this field. Following her studies, she ventured into academia by becoming a lecturer at Dilla University, teaching soil science courses and later moving back to her alma mater at Hawassa. Semira's academic journey reached new heights when she was awarded a scholarship opportunity for a Ph.D. in Agriculture at the Tshwane University of Technology in Pretoria, South Africa. By this time, she had fully embraced the path life had led her down, and she worked extensively on her research which focused on identifying the diversity of soya and common bean in Ethiopia. This endeavor was as challenging as it was rewarding, culminating in her successful doctoral graduation in April 2015.

Years of experience and firsthand observations of societal inequalities made Semira acutely aware of the gender-based disparities in the agriculture sector. Compelled to go beyond her academic achievements, she founded the Gate for Opportunity (GO), an NGO committed to improving women's and children's livelihoods through education, livelihood interventions, and capacity-building training. Her vision for GO is to make it a catalyst for change by creating opportunities for marginalized individuals and advocating for equality.

Semira's commitment to addressing critical issues in African agriculture aligns seamlessly with the objectives of the One Planet Fellowship. Introduced to the program through the AWARD Facebook Page, Semira was drawn to its unique approach, which integrated climate change with gender considerations and acknowledged women's pivotal role in agricultural sustainability. The mentorship component of the Fellowship provided a structured platform for Semira to learn, share experiences, and build networks while focusing on developing crucial soft skills that would help her successfully navigate setting up GO.

Semira envisions a future where she is pivotal in driving inclusive social, political, and economic development in Ethiopia. Her long-term goals include venturing into the business sector and accelerating technology and skill-transfer services to farmers, thus contributing to a vibrant agricultural landscape that drives economic empowerment and quality livelihoods.

Semira Mohammed Beyan's journey is a testament to the transformative power of education, resilience, and a commitment to addressing societal challenges. As she continues to make strides in African agriculture,

Semira exemplifies the spirit of change needed to cultivate a more sustainable and equitable future for the continent. The support provided by the One Planet Fellowship has served as a crucial catalyst in her mission to create lasting impact and positive change.

From a Father's Dream to Academic Triumph

> "Listen carefully; you are destined for the university, where you will earn a BSc and PhD. You will be known as Dr. Tifsehit."

Since her childhood, these words have been the wind in Tifsehit Solomon's sails, propelling her through different seasons and to the pinnacles of success.

Tifsehit was born and raised in a small town called Dembi Dollo in western Ethiopia. Her parents strongly believed that education was the only tool that could transform their lives. As a result, they instilled in all their children the values of determination and hard work as the lights to the future, irrespective of their gender, as was the cultural norm at the time.

Despite this strong belief, adversity plagued the foundational stages of Tifsehit's educational journey. Her family's income was unstable, and there were times when she and her sisters had to work to help their parents make ends meet. The need to bring in resources rivaled education, and finding a balance between the two demands was a great challenge for her.

However, the echoes of her father's words kept her on track. Midway through her secondary education, her mother secured a stable source of income, lifting the burden of providence off Tifsehit's shoulders and enabling her to focus all her energy on her education.

Ultimately, Tifsehit's perseverance paid off. She secured a position at Mekelle University, becoming one of the few female students from her hometown who were privileged to pursue university education. Even so, anxiety over her family's well-being masked her enthusiasm for attaining a four-year degree. She considered enrolling in a two-year diploma instead so she could finish school earlier and support her family, but leaning into her father's dreams, she found that within her lay a deep desire for academics, which propelled her for all her years towards completing her degree in Crop Science, and subsequently a masters in Horticulture at Hawassa University.

As envisioned by her parents, Tifsehit's ascent to excellence continued as she joined Wollega University as a Lecturer. Driven by the passion for finding solutions to the problems farmers face every day, she endeavored to be a research expert and a leader for farmers. So she went back to school to pursue a doctorate in Entomology at Addis Ababa University. This was the ultimate test of her determination, as she was not just a student but also a mother and wife. She triumphed with an outstanding thesis dedicated to her mother and other mothers who dimmed their dreams so their children could shine.

As time passed by, Tifsehit felt a deep yearning for research and began orienting her efforts towards finding practical solutions for the challenges devastating agricultural production in the west side of Ethiopia. She researched the impact of pesticides and climate change on agriculture, focusing on rehabilitating termite-degraded land through integrated management methods in western Ethiopia. While at it, she acquainted herself with different science groups, including the Organization for Women in Science and Development (OWSD). While at OWSD, she learned about the One Planet Fellowship and was keen to unlock the learnings it offered. She was accepted into the Fellowship, making her the first person in her institution to win such an award. This affirmed her strides as a scientist and boosted her confidence immensely.

Being part of the Fellowship refined Tifsehit's technical and leadership skills. She has enhanced her technical writing, data analysis, and presentation skills and curated a wide network of scientists who, like her, work to use science to effect change in their communities.

Currently, Tifsehit serves as the CEO of the Policy, Strategy Research and Studies Division

at the Ministry of Women and Social Affairs, a position she states is a direct result of the experience she gained through the Fellowship. In this role, she is actively working towards creating a seamless bridge between research and policy for the betterment of her community, as she knows, based on her experience as a researcher, the power and need for evidence-based policy formulation.

Verily, Tifsehit's story is about a determined girl who dared and was willing to dream. Dr. Solomon is her family's trailblazer, a scientist, and a passionate leader who embodies the resilience and sheer determination her father envisioned.

Kenya

Forecasting for Agriculture

Born and raised in Nairobi, Saumu Shaka grew up with a typical Kenyan urban child's upbringing. Her favorite bonding experience was listening to her father recount stories about his work as a meteorologist. Saumu admired his work and was captivated by the science of predicting weather patterns that he made come alive.

During her school holidays, Saumu often traveled to her parent's farm in Ndile, a small village in Taita Taveta County in the eastern part of the country. There, she worked on the farm, slowly gained an appreciation for nature, and slowly began observing the farm dynamics. Saumu realized, for instance, that the crucial harvesting period always coincided with the December school holidays. In high school, she saw the bumper harvests of maize, beans, and pigeon peas from her parents' farm, which were sold to local schools. In these moments, she began to understand the impact of weather on agriculture. As Saumu oscillated between these two worlds - Nairobi and Ndile, her appreciation for her father's work deepened, and she decided to follow in his footsteps. In pursuit of her dream, Saumu enrolled at the University of Nairobi to study Meteorology.

However, as she progressed through her undergraduate studies, Saumu observed a decline in harvests from Ndile, making her concerned for her community's food security. Once more, the correlation between the change in weather patterns and the agricultural harvest was clear. Deciding to focus on exploring this relationship, Saumu embarked on a 10-month course on climate change adaptation and mitigation. The project, centered in Ndile village, assessed risk and vulnerability, shedding light on the necessity for research on best agricultural practices aligned with food security and sustainable development.

During this period, Saumu also recognized a concerning trend among the youth in her rural community. Results from her project revealed a preference for white-collar jobs over agricultural activities, posing a threat to local food security. In response, she decided to lead by example, actively participating in farm activities during crucial rainfall seasons and working to influence the youth to view agriculture as a vital field for food security and sustainable development.

Now pursuing a Master of Science degree at the Institute of Climate Change Adaptation at the University of Nairobi, Saumu continues her journey to understand the changes impacting her village. As a climate scientist, her daily routine involves analyzing models to provide timely and accurate weather forecasts, which are crucial for the safety of life and livelihoods, especially for small-scale farmers relying heavily on rain-fed agriculture.

Saumu's involvement in the One Planet Fellowship reflects her commitment to addressing climate change challenges in agriculture. One of the Fellowship objectives is to equip scientists with a gender lens to assist Africa's smallholder farmers cope with climate change. Saumu seeks to utilize the soft skills gained from the fellowship to enhance the meteorology department's outreach, particularly targeting the youth through social media. Her vision is to create empowered and innovative youth leaders, including those with disabilities, providing them access to advisory services and climate-smart agribusiness technologies. In this way, Saumu contributes to building a resilient and interconnected network of scientists focused on ensuring food security and sustainable development in her corner of Africa.

Nigeria

Safeguarding the Planet from the Soil Beneath his Feet

Embracing collaboration and solution-based perspectives are Abubakar Halilu Girei's core values as a doctoral student and Soil Science lecturer. They are also the key principles that attracted him to the One Planet Fellowship. A Soil Scientist hailing from Nigeria's nomadic Fulani community, Abubakar has witnessed the negative impacts of climate change on the livelihoods of his community and other farmers in Nigeria. As a firm believer in the power of collective action, the One Planet Fellowship's program, which provides an excellent avenue for young African scientists like him to gather, brainstorm on climate change, and develop strategies communities can adopt for adaptation and mitigation, was ideal. A scientist burning with the urgent need to solve Nigerian communities' farming challenges, his journey into agriculture is one of paradigm shifts.

Abubakar's childhood in Girei village in Nigeria's Adamawa state wasn't typical of a child born into a nomadic pastoralist community. He had an educated father who enrolled him in the best of schools and nurtured his curious mind. Abubakar was a dreamer who yearned to discover what lay beyond the horizon and above his reach. He often marveled at the sight of aircraft that soared over his head, fascinated by their graceful glides across the sky, and he dreamed of becoming an aeronautical engineer who would rule the sky in these magnificent airplanes.

Unfortunately, none of the universities in Nigeria offered aeronautical engineering, and just like that, Abubakar's dream fizzled into thin air. He shifted his focus to medicine and surgery but was admitted to pursue Agriculture at Ahmadu Bello University instead. Unlike many of his classmates who were disappointed at being admitted to study agriculture, Abubakar embraced this opportunity and made the most of his fate. Guided by his Fulani heritage, Abubakar decided to specialize in Animal Science and become a modern Fulani, infusing science knowledge with livestock herding.

A few lessons into his course, he learned about climate change, its growing impact, and the need for urgent action to mitigate it. Emphasis on the essential role soil plays in forestalling the negative effects of climate change tugged at Abubakar's heartstrings, igniting his desire to make a difference in climate action. The awakening compelled him to switch from Animal to Soil Science. When he enrolled for his master's degree at the same university, he delved into soil health, erosion control, and carbon sequestration, funded by a Volkswagen Research Grant.

A year after attaining his master's degree, Abubakar enrolled for a PhD at his alma mater once again, specializing in Soil Physics with a focus on varying irrigation techniques and advanced fertilizer management on rice production for increased food security and environmental sustainability in the Nigerian rice production sector. This paved the way for new opportunities as he was awarded the Climate, Food, and Farming Network and Global Research Alliance Development Scholarships (CLIFF-GRADS) in 2018. This saw him go on a research visit to Colombia to work on rice – grains he had known since childhood. Here, he led research on increasing rice yields using less water and lowering greenhouse gas emissions.

This experience broadened his view on research application and shed light on the transformative power of collaborative, multidisciplinary engagement. As a result, he sought to team up with fellow African researchers to address climate change and impact action, specifically

through pioneering research on rice - a staple grain in Nigeria. The More Rice with Lower Emissions and Lower Water Consumption collaborative multidisciplinary research project was funded through FONTAGRO in Colombia (FEDERROZ), Chile (INIA), and Perú (UNALM). The pivotal findings served as a model that was replicated in several other countries.

The One Planet Fellowship met this need for him as he broadened his professional network, elevated his interpersonal skills, and increased his visibility as a researcher.

Abubakar currently serves as an Assistant Lecturer at the Federal University Dutse in Nigeria's Zaria Metropolis, where he continues to use the skills he garnered in the Fellowship to improve the institution's chances of accessing research grants, technical expertise, fellowships, and equipment and materials. He is also championing a mentorship program for all students who join the university.

Indeed, he is not just a leader in soil science and sustainable land use management. His journey is evidence that the world needs more than engineers and Animal Scientists. It also needs stewards of the soil who can heal the land. He shares, "I advocate for sustainable land management and a symbol of how dreams can adapt and evolve to meet the pressing needs of our time."

"I advocate for sustainable land management and a symbol of how dreams can adapt and evolve to meet the pressing needs of our time."

A Mother's Dream, A Daughter's Triumph

Öke l'aiye 'wa, isale ti kun.

In the echoes of Aramide Igbari's memories, her mother's words resonate like a guiding star: "There are unlimited opportunities at the top level. The lower level is filled to the brim." These words were her mother's north star, lit the path of Aramide's remarkable journey — a journey marked by the unwavering belief that education could transcend circumstance.

Despite being a woman of ambition, Aramide's mother was curtailed by financial constraints. Her parents could only provide her with an elementary school education, curtailing her opportunities. However, she seized control of her future and enrolled in typing and shorthand classes, opening the door to a junior typist position at the University of Lagos in 1976. Shortly after commencing her job at the university, Aramide's mother witnessed a convocation ceremony. The grandeur of the event, with graduates adorned in academic regalia, left an indelible impression on her. She channeled this ambition into a vow for her four children. No matter the hurdles, they would all receive a university education, thus breaking the cycle of humble beginnings.

The path to fulfilling this vow was not without challenges. Finances were always tight, but that did not deter her from seeking additional income sources to make ends meet. Aramide and her siblings shared this responsibility with her as they worked in their mother's little shop and even took to the streets of Lagos to hawk bread. Every coin earned was a step closer to their collective dream.

In school, Aramide proved to embody her mother's dream. Driven by a passion for the sciences, particularly biology, she envisioned herself studying medicine and one day becoming a doctor. Unfortunately, her dream was crushed when she did not attain the marks needed to qualify for admission to the undergraduate medical program. This dealt a heavy blow to Aramide, and for two long years, she remained at home, grounded in grief, unable to see a path forward for her education. It seemed her mother's dream – which had also become her own – would not come true. However, our journeys are rarely linear, and when one path leads to a dead end, there is always an alternative route.

In this period of uncertainty, Aramide found an unwavering anchor in her mother. As the fog of despair enveloped her, her mother's voice of reason cut through the darkness. With continued guidance, she enrolled for a diploma in Microbiology—a steppingstone amidst the challenging terrain of unmet expectations.

This period of study became a crucible of resilience for Aramide. She turned the page on her past setbacks with dedication and tenacity, earning a bachelor's degree in botany and a master's degree in Botany. Each achievement was a story of triumph over adversity, a testimony.

Upon embarking on a journey toward a doctoral degree in Molecular Systematics at the University of Lagos, Aramide faced new challenges. The initial years of the PhD program proved to be a struggle, as she faced constraints in securing funding for her research. Despite relentless efforts, each grant application or proposal was rejected, causing moments of doubt over her chosen career.

Yet, Aramide persisted, and a breakthrough came in October 2013 when she was selected for the UNESCO-L'Oréal For Women in Science International Rising Talent. This opportunity provided the necessary funding for her research bench work at the University of Reading in the UK, ultimately leading to her completing her PhD in 2017. The pinnacle of Aramide's journey unfolded during her convocation ceremony in 2018, where she was flanked by the mother who had instilled the dream and the drive that had led to this success. Aramide now serves as a lecturer at the University of Lagos, where her mother's journey commenced. This moment marked a full-circle realization of their dreams.

As a One Planet Fellowship Laureate Candidate, Aramide has crafted a roadmap that charts the course for the future she envisions

in her career. The invaluable mentoring and advanced science training she received have honed her research, proposal, and technical writing skills and elevated her capabilities to new heights. With a profound understanding of cutting-edge scientific methodologies, Aramide is poised to contribute significantly to her field.

Beyond scientific expertise, the Fellowship's leadership training and networking opportunities have transformed Aramide's professional journey. They have instilled confidence in her and expanded her professional circle, opening doors to collaborative ventures and fostering connections with like-minded individuals across the continent.

In a commendable display of commitment to the fellowship's ethos, Aramide has taken on the role of a knowledge disseminator. She actively imparts the skills and knowledge acquired from the One Planet Fellowship to her colleagues and students at her institution. Through research collaborations and training initiatives, she ensures that the impact of the Fellowship extends beyond her achievements, creating a ripple effect that enriches her academic community.

Changing Perspectives, Protecting Tradition

Before Geneva Evalee Anisiobi applied to the One Planet Fellowship in 2021, she had already conducted extensive research on the program, recognizing its profound benefits for her academic and professional journey. The Fellowship, known for sharpening research skills, building community, and broadening knowledge in climate-change technologies, became a pivotal point in Geneva's ongoing PhD program, where she is studying Soil Microbiology at the Nigerian Institute for Oil Palm Research.

But before the Fellowship, the doctoral studies, and the education that built a foundation for Geneva to be who she is today, she was a little girl from Southeast Nigeria whose cultural heritage gave her a deep appreciation for agricultural bounty, specifically palm oil. The festive seasons, such as the legendary new yam festival that ushered in the consumption of yam for that season, were always filled with the aroma of palm oil and the celebration of farmers showcasing their harvest. However, amid this cultural wealth, Geneva noticed challenges faced by farmers. The intense manual labor and the degradation caused by palm oil milling practices left a profound mark on her young mind. Even at an early stage, she sensed the environmental damage plaguing the tradition.

Geneva's interest in environmental health led her to pursue a bachelor's degree in Applied Microbiology and, afterward, a Master's in Public Health at the University of Ibadan. As Geneva commenced her job search, she secured several contract positions in public health before receiving an interview invitation from the Nigerian Institute for Oil Palm Research, where she presently works. The institute's agricultural focus sparked memories of her roots and the dedicated women in palm oil milling back in her hometown.

With her recollections of untreated wastewater causing mosquito proliferation, odors, and soil pollution, Geneva saw an opportunity to apply her public health background to address agricultural and environmental health challenges that arose from traditional palm oil production methods. Unfortunately, her academic track record and work experience at the time were deemed inadequate to make this career switch. Despite having to pursue a second master's in Agriculture for job relevance, Geneva embraced the challenge. Geneva chose to specialize in Soil Microbiology, aiming to use her research to address soil fertility and environmental pollution.

Maintaining the new trajectory of her academic career, Geneva commenced her PhD studies in Soil Microbiology, further delving into understanding the environmental threat posed by effluent wastewater in palm oil production. She began evaluating the potential of this effluent as an organic soil amendment and renewable energy source. Mobilizing local smallholder farmers, Geneva organized classes to teach them how to achieve this end. This resulted in significantly improved yields and adoption of biogas for domestic cooking. This technology not only transformed the narrative of effluent pollution but also contributed to environmental sustainability, agricultural productivity, and enhanced livelihoods and health conditions within the community.

As a recipient of the One Planet Fellowship, Geneva has come to a crucial juncture in her career. The program's emphasis on skill development in data management, interpretation, and scientific writing has complemented her ongoing work and positioned her to contribute significantly to the intersection of environmental health, agriculture, and economic empowerment. Above all, the Fellowship aligned with Geneva's belief in giving back. Now, she sees herself not just as a researcher but as a role model, inspiring others to contribute to the transformation of agriculture. Geneva envisions sharing her newfound expertise with younger colleagues through conducting training sessions and continuing in her pursuit of positive change.

Senegal

Pursuing Agroecology to save Dakar's largest Urban Forest

Forests are metaphorically described as the lungs of the earth, and rightfully so. This is the pivotal function that Mbao Forest plays for Dakar, Senegal. Within the expanse of this city, Mbao acts as a lung, ensuring the provision of breathable air for Dakar's diverse inhabitants. Unfortunately, challenges posed by rampant urban development in recent years have threatened Mbao Forest's vitality and its ability to serve the residents of Senegal's capital city.

Dakar is one of West Africa's most densely populated regions, with approximately 12 thousand inhabitants per square kilometer. As the city experienced urban expansion, there was a growing demand for space to accommodate new infrastructure. This often resulted in the clearing of large areas of forest land. Dakar's population pressure also intensified the need for arable land, given that agriculture is a vital source of livelihood for many communities. As a result, residents cleared sections of the forest to create fields for farming and cultivation. The combination of these factors led to the rapid loss of large swathes of Mbao Forest, posing significant threats to the ecosystem, biodiversity, and the forest's vital functions in mitigating pollution. Tired of witnessing the degradation of this essential green lung, Ahmadou Sow decided to channel his passion for the environment to initiate change in his city. As a dedicated scientist and researcher, his educational and vocational background equipped him with the right skills to tackle this issue.

Ahmadou's journey into the world of life and earth sciences began at an early age, fuelled by a deep-rooted fascination with the natural world. After two years of intensive studies at Cheikh Anta Diop University (UCAD) in Dakar, he earned a bachelor's in Animal Biology in 2011. Ahmadou further honed his knowledge by obtaining a master's degree in Animal Biology in 2012. He immediately followed this up with another specialization in agricultural entomology. Throughout his academic career, Ahmadou's focus was on understanding the intricate relationships between organisms within ecosystems.

In 2015, Ahmadou enrolled in a Ph.D. program in Population Genetics and Community Ecology at UCAD. His doctoral research, completed in 2019, contributed valuable insights into the entomology and ecology of millet pests and their natural predators. This background enabled Ahmadou to join the French Agricultural Research Centre for International Development (CIRAD) in Dakar as a researcher in entomology and ecology. Currently, his post-doctoral research is focused on climate change, specifically co-designing cropping systems with farmers to address its impacts.

His dedication and constant pursuit of growth opportunities earned him a place in the One Planet Fellowship which, coupled with his academic achievements, prepared him to work in Mbao. Upon learning about the degradation happening in this forest, Ahmadou initiated a research project to establish a participatory strategy for its protection and reforestation. His understanding of the intricate relationships between organisms and ecosystems enabled him to reconcile human agricultural practices with nature.

For his reforestation efforts to be successful, Ahmadou needed to plant a tree species that would not compete with crops. To meet this objective, he introduced Acacia albida trees to Mbao Forest. This species is known for its nitrogen-rich leaves, which contribute to soil fertilization and enhance the overall health of the forest floor. It also sheds its leaves during

the rainy season, mitigating farmers' concerns about planting trees that would block sunlight from reaching the crops below.

Despite facing challenges in changing farmers' perceptions and mobilizing decision-makers, Ahmadou's initiatives have borne fruit. In the short term, 25% of Mbao Forest has been reforested, thanks to his dedication and the collective efforts of those who share his sensitivity. Looking ahead, Ahmadou aspires to reforest 75% of the altered area and raise awareness about the importance of conserving this natural heritage. Inspired by the collaborative approaches and learnings that the One Planet fellowship has instilled in him, Ahmadou is focused on continuing to exemplify the power of merging education with action and underscoring the vital role that ecologists play in safeguarding the lungs of our planet and all the life it holds.

Academia: A pathway for Addressing Environmental Challenges

By the age of 5 years, Ndeye Aida Ndiaye had earned a reputation as a curious child, driven by a desire to unravel the intricacies of the world around her. School posed no challenge as she effortlessly grasped concepts and easily secured high scores. However, a familial upheaval disrupted her path, propelling her and her mother away from Dakar, where they had lived. For the subsequent two years, Ndeye lived on Senegal's Petite Côte, where she roamed freely, exploring the coastline, marveling at towering baobabs, enjoying sandy beaches, and indulging in carefree play—all without the constraints of formal education.

Upon returning to Dakar after this hiatus, Ndeye resumed her studies, yet the allure of the idyllic coastal lifestyle persisted. Games by the sea, swimming in the ocean, and wandering in the wilderness clashed with the rigors of structured learning. Fueled by hurt and anger over the abrupt changes in her life, Ndeye rebelled against the academic routine, adamantly refusing to absorb any knowledge. This rebellion resulted in her repeating each grade from 3rd to 5th, raising concerns within her family about the likelihood of dropping out of school.

Salvation came in the form of Mr. Ndiaye, a calm and pedagogical teacher who introduced Ndeye to the world of mathematics and unveiled her innate affinity for numbers. Under his guidance, Ndeye's resistance waned, and she gradually accepted her altered circumstances and returned to her role as a stellar student. Her newfound love for mathematics transcended into other scientific realms, laying the groundwork for her enrolment in a natural science course at Université Cheikh Anta Diop (UCAD). This academic path seamlessly blended her two cherished worlds rooted in her formative experiences — nature and science.

Upon completing her bachelor's degree, Ndeye continued her academic journey by enrolling in a master's degree program in earth life sciences. Her commitment to addressing environmental challenges didn't stop there; she pursued another master's degree, this time in the chemistry and biochemistry of natural products. During this phase, she delved into a critical issue, focusing on limiting greenhouse gases like methane by diverting them from organic waste.

Now a postdoctoral researcher at the Joint Microbiology Laboratory (IRD/ISRA/UCAD) in Dakar and a laureate of the One Planet Fellowship, Ndeye is on a mission to contribute to climate-resilient agriculture and tackle the pressing challenges of climate change. Her research aims to determine optimal methods for managing organic waste to curtail greenhouse gas (GHG) emissions while boosting crop yields. Ndeye's work involves recovering organic waste to generate energy and fertilizer, marking a significant stride in sustainable agricultural practices.

The lessons imparted through the fellowship enhance Ndeye's ability to disseminate her work and contribute to its refinement on a scientific level. This ripple effect extends to rural communities, where Ndiaye envisions her research making a tangible difference. The fellowship's influence also extends to her capacity-building endeavors and has resulted in more efficient work at the research institute, consequently elevating the visibility of the research laboratory. Ndeye's journey is an ode to the individuals who dare to question, stay tenacious, and ultimately dedicate their lives to making the most of their gifts.

Freed to Dream

The power of mentorship and support for women and girls in science is indispensable. Wane Yaye Deffa, a Senegal's Saint Louis Agronomist, is a testament to this. Deffa comes from the pastoral and largely patriarchal Fulani community whose culture doesn't place a high value on education for girls. However, her father's commitment to educating all his children handed Deffa the passport to her future and freed her to dream of excellence beyond traditional limitations.

As a result of this nurturing support, she developed a passion for biology in secondary school and even dreamt of becoming a doctor. In 2012, however, she followed in the footsteps of her Agronomist Engineer father. She enrolled in an undergraduate course at Gaston Berger University in the Agronomic Sciences, Agriculture, and Agri-food Technologies faculty.

Here, Deffa met Professor Mariama Dallanda Diallo, an agro-pedology teacher-researcher at the university, who played an instrumental role in her academic journey. Professor Diallo was a renowned scientist and the only female tutor in the university's Plant Production and Agronomy sector. She was pleasant and full of life and inspired Deffa to pursue Agronomy with pride, even when other students regarded her and her course mates as lowly every time they would come from the school farm dirty and hungry after a field day. To Deffa, she was more than just her Teacher-Researcher; she was the embodiment of the female scientist she wanted to be – one who broke glass ceilings, rose to the pinnacles of success, and wasn't afraid to get her hands dirty.

As such, she enjoyed Professor Mariama's classes a lot. Professor Mariama broke down science concepts into simple, easily understandable ideas, drawing her examples from everyday experiences and materials. Deffa vividly recalls how she explained the structure of phospholipids in a cell membrane using the sponge she used as a blackboard duster, captivating the class. She changed their perspectives on science concepts; her lectures always recorded full attendance.

Her passionate and nurturing teaching saw Deffa develop a deep interest in the impact of water and soil on food systems. Eager to follow in her footsteps and carve out her own path as a scientist, Deffa interned at the Society for the Development and Exploitation of River Senegal Delta Land (SAED) in Podor, where she wrote her thesis under Professor Mariama's guidance and Grands Domaines du Sénégal (GDS), a company specializing in the production and export of fresh fruits and vegetables. These experiences fulfilled Deffa's requirement to attain two master's degrees in Crop Production and Agronomy, which she was awarded in 2015 and 2016 respectively.

Having been ushered into the field of research, Deffa worked for over three years using her analytic skills for different companies, where she learned about the various challenges farmers in rural areas faced due to climate change. Throughout her work, she was continually guided by her lessons and academic experiences, especially those learned from Professor Mariama.

Driven by the desire to become a key player driving agricultural productivity and armed with industry knowledge on the needs of smallholder farmers, she commenced her Ph.D. in Agroecology and Sustainable Agriculture at Gaston Berger once again under her favorite professors' tutelage. Professor Diallo guided her in working on her thesis and strongly defended her case in the project, which focused on increasing the agricultural productivity of irrigated systems by improving soil fertility and irrigation management in the northern Niayes area, where smallholder farmers often unknowingly mismanaged water resources.

Just when Deffa had made plans for data collection, Professor Diallo passed on, robbing Deffa of her mentor and throwing her into the pit of grief. The impact of this loss was unbearable and destabilizing for Deffa, and she could not work on her project for an entire

year. She mourned the loss of her mentor's kindness, her passion for teaching, and her elevating company.

Ultimately, she mustered the strength to move on and found solace in her mentorship and the example she had set for her. She resumed her thesis as a Research Assistant in the WAGRINNOVA Project[3], which brought together multidisciplinary researchers to foster sustainability and resilience for small-scale farmers, and in 2022, she earned her Ph.D.

One Planet Fellowship's offering of a platform for collaboration and capacity building for scientists working on solutions for Africa's smallholder farmers in the face of climate change was everything Deffa needed. Indeed, the Fellowship delivered on its promise to build highly connected, inter-generational scientists and unlocked a new niche for her to leverage opportunities within research and development organizations.

As a result of the confidence instilled in her during the Fellowship, coupled with the healing nature of time, Deffa aspires to follow in Professor Diallo's footsteps and become a teacher-researcher. Having felt the impact of the loss of such a pivotal champion and steward, she deeply understands the gift her professor gave her. She is determined to pass it on and be a role model, source of inspiration, and mentor for young girls passionate about science.

[3] https://www.g-eau.fr/index.php/en/research/completed-projects/item/978-wagrinnova

Tanzania

Championing Water Efficiency for Sustainable Farming

It is predicted that by 2050, there will be a 71% deficit in water for agriculture due to climate change. This is almost Msigwa Anna Haji's mantra. Anna is a water and hydrology Associate Lecturer passionate about efficient water use, seeking to guide people through research and academia toward a sustainable and water-secure future.

Anna's journey to the hydrology field was seeded early. As a child, she was always mindful of the water she used, always bathing with half a bucket, unlike her other family members who used a whole bucket. Eventually, she understood her subtle yet powerful habit of efficient water use in secondary school.

Initially, Anna didn't consider water management a prospective career. She had her eyes set on telecommunications engineering and harbored dreams of working at an airport. Unfortunately, she wasn't selected for the course after high school, which devastated her. Instead, she secured a position in Environmental Engineering where she felt at home immediately, as water and the environment were the focus areas of the course.

Four years of learning rekindled Anna's passion for water management, propelling her to pursue a Master's in Hydrology and Water Resource Management. This led her to work with farmers in the rich agricultural farmlands of northern Tanzania.

While working with the farmers, Anna realized how inefficient water use was among them. "Why are you doing this?" Farmers once questioned her as she mapped the villagers' groundwater wells for irrigation. After explaining that she was monitoring water levels to determine longevity for usage, the farmers were taken aback. To them, the underground water system is like an ocean, where the water was impossible to run out.

Anna realized that the farmers weren't aware that groundwater is recharged by rainwater, whose frequency has been reducing sharply over the past years. This misconception explained why the farmers' irrigation practices had not adjusted to this reality. Unfortunately, she found out that this ignorance was not just confined to Tanzania; she also encountered it among farmers in Nigeria. Farmers didn't understand the importance of implementing water management techniques, especially those from areas without acute water shortages.

Realizing this was a widespread issue, Anna committed to devising science-based solutions for farmers. With the farmers she had met in mind, she focused her Ph.D. research on water availability at a basin level, its efficient use, and the need to promote awareness of the importance of water management at the grassroots. To achieve this, she localized her research to the Kikuletwa catchment area, a region within one of Tanzania's key watershed ecosystems, the Pangani Basin.

This dedication to helping farmers use their water resources prudently has yielded results. She and her research team developed an early warning system for drought to help farmers plan their planting seasons wisely. This tool also helps them manage the little water they get from rain. Recently, a few Ph.D. students from Vrije University of Brussels in Belgium are researching Anna's drought communication strategy.

At present, Anna wants to continue working with farmers and other scientists to tackle farm pests and diseases and climate change adaptation. She advises and trains farmers on the best irrigation methods and envisions owning a farming enterprise.

Anna is set on the part of her greater vision courtesy of the One Planet Fellowship. Her research work is valuable, and the Fellowship validated her dedication to the course, elevating her confidence. She has also garnered pivotal skills like grant writing that will foster her research and new mentoring skills that will be invaluable to her as a scientist and the students she teaches.

Togo

A lesson on the need to effectively engage farming communities

At its best, research is the most powerful tool for enhancing society through the advancement of knowledge. In many instances, though, research has yielded every result but this. For this reason, the relationship between researchers and other stakeholders—local communities especially—has deteriorated over time, hampering research even for crucial matters like food security. Bammite Damigou is a researcher whose experience at the nexus of this conundrum steered him to advocate for inclusive, participatory research.

Damigou's interest in research dates back to his childhood, when he'd watch his father tend to their home farm in Togo. His focus, however, was drawn to one plant called Taro, which his father treated with extra care. Damigou would learn that Taro was a useful plant whose leaves and tubers had medicinal value as a treatment for anaemia, especially among children.

Despite this significant value, Taro wasn't widely grown in Togo. Damigou was intrigued by this when he discovered that poor soil quality, irregular rainfall, and other negative impacts of climate change hindered the thriving of Taro.

Cognisant of the special attention Taro needed, Damigou endeavored to undertake detailed research on it through his doctoral thesis.

Damigou received funding from the International Foundation for Science (IFS) for his study and set off collecting data in his village. Unbeknownst to him, a roadblock awaited him. His eagerness to engage with the community members was met with hostility, and they had a powerful message for him. "We know why you're here. You're not the first and won't be the last to come. We also know you'll never return if you leave our home. But we want you to know that we're tired of always giving information and receiving nothing in return!" their spokesperson shared.

He was disheartened. The reality in their sentiments weighed on him, making him feel guilty for being part of the system that had overlooked the need to feed back to the community for years. This morphed into confusion as the premature end of his research looked imminent from his vantage point.

Thankfully, his determination to restore Taro on Togo soils outweighed the despair before him, and he shared his research objectives with the people. He explained to them the arduous process of seeking funding to implement projects. He told them that it's not any of the students' intention to seek knowledge from them and then never return with findings and solutions.

He then committed to becoming an agent for change in research by ensuring community members would be actively involved in his entire research process. In 2019, Damigou was privileged to become a One Planet Laureate Candidate, an opportunity he reckoned came at a crucial point in his career. With the help of an AWARD mentor, Damigou is confidently navigating how to further his project work. Additionally, the Fellowship has opened doors to more funding, accelerating his project of growing resistant Taro and widening his approach to encompass gender and climate lenses.

As of 2024, Damigou is in the evaluation stage of his project in collaboration with the community and is looking to establish a national collection of different Taro varieties, including improved varieties imported from Ghana and Vanuatu,

that are resistant to a particular disease and can be optimized for local conditions.

Courtesy of the One Planet Fellowship bolstering his technical expertise and leadership capacity, Damigou is confident he can work with farmers to restore the conditions for Taro to thrive in Togolese soils and thus harness the nutritional and medicinal value of the plant. The next step would be to create a company to produce and process Taro locally into infant flour, bread flour, crisps, and cakes, ultimately improving their incomes and thus showcasing the value of research at its best.

Zambia

A Father's Daughter Pursuing Excellence

Florence Chibuye, a Natural Resources Management lecturer and researcher, firmly believes that if a goal is good for someone and they focus on it, it can become theirs. This strong self-belief is not innate in any way. It is a lesson Florence learned following a setback that helped shape her core values and career path at a young age. As the only female child out of seven in her family, Florence was the apple of her father's eye. With a natural aptitude for sciences and a strong work ethic, Florence intended to pursue Computer Science at the University of Zambia.

Still, she could not after failing to pass some of the prerequisites.

She was determined to pursue tertiary education because she felt strongly that she had let herself and her father down. She ended up settling for the Natural Resources Management course, a program offered to her instead. Her father supported her shift and renewed her effort to succeed academically. It was not a popular course at the time, and not one she would have chosen for herself, but she was motivated by Vince Lombardi's words: "It is not whether you get knocked down; it is whether you get back up," she developed an enthusiasm for the course, ushering herself into a new realm of limitless possibilities.

While conducting field research for her course, Florence interacted with communities in rural areas. She learned that smallholder farmers struggled with declining agricultural productivity due to climate change. She felt compelled to find real-time solutions to this challenge, which led to a focus on research to develop mitigation measures for the farmers.

In 2019, her interest was piqued when a call for the One Planet Fellowship was shared in the Zambian Women in Agricultural Research and Development (ZAWARD) WhatsApp group she was part of. She promptly applied for the program driven by one goal: to expand her capacity to contribute towards increasing forest cover in Zambia by working with communities living near forested areas. Her acceptance into the Fellowship was a dream come true as she gained new insights into leadership management, broadened her science skill set, networked, and mastered the art of grant proposal writing, bolstering her research and work with farmers.

Before becoming a One Planet Laureate Candidate, Florence's work as a researcher and lecturer was often overshadowed by gender stereotyping. She remembers being one of the five female staff in her department of twenty-five educators and instances where respondents assumed she was a research assistant and not the key researcher. As a result of AWARD's facilitation of fostering inclusion in research, Florence's Ph.D. thesis went beyond enhanced adoption of sustainable agricultural practices among smallholder farmers to emphasize the need for gender-responsive research in the quest to help all farmers.

Armed with the practical skills the Fellowship gave her, Florence looks forward to passing on knowledge to smallholder farmers and the students she teaches at the university. She plans to establish a center of excellence in forestry at the University of Zambia (UNZA), a facility she'll use to train and facilitate knowledge generation through research for communities around the institution.

She treasures her interaction with students from different backgrounds and often reminds them that there may be obstacles, but there are no limits to what they can achieve. "I love being an inspiration to the younger generation of students with whom I share my knowledge

and take with me on the journey of addressing the challenges of climate change. I know the difference it makes having someone who wholeheartedly believes in you." Florence knows that she has a lot to offer young students at the early stages of their academic journey, but even more importantly, the effect of her research in helping communities of smallholder farmers withstand the ravages of climate change in Zambia, is the fuel that keeps her going each day.

About the One Planet Fellowship

The One Planet Fellowship seeks to build a vibrant, highly connected, and intergenerational network of African and European scientist leaders to lead next generation research aimed at helping Africa's smallholder farmers adapt to climate change. The Fellowship equips African researchers to deploy a gender lens to analyze the potential of their research to bridge the gender gap in African agriculture.

Inspired by the AWARD Fellowship Model, the One Planet Fellowship brings together an intergenerational network of scientists across Africa and Europe. It builds the leadership skills of emerging scientists from both continents, strengthens their scientific research skills, and catalyzes research partnerships and networks.

High-potential African agricultural researchers referred to as One Planet Laureate Candidates, are competitively selected and paired with more established African researchers, One Planet Fellowship Mentors, who are carefully chosen to match their area of expertise and career goals. The pairs commence a year-long mentorship relationship and are supported to build a successful partnership to enhance the Fellows' career growth.

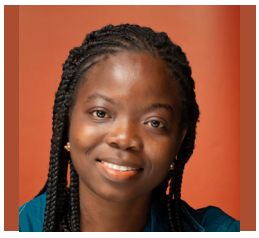
The pairs also receive support to attend various leadership and science research skills courses. During the Fellowship, the Laureate Candidates select emerging African scientists and emerging European scientists to whom they serve as mentors, creating a three-generational mentorship pod.

Laureate Candidates are further supported to enhance their research skills through research placement at leading European research Laureate Candidates are further supported to enhance their research skills through research placement at leading European research institutions with a strong emphasis and reputation for climate change science. Here, the Laureate Candidates are paired with outstanding European researchers who serve as supervisors to strengthen specific skills for Laureate Candidates.

The One Planet Fellowship is funded by the Bill & Melinda Gates Foundation, the BNP Paribas Foundation, the European Union, and Canada's International Development Research Centre (IDRC). African Women in Agricultural Research and Development (AWARD) and Agropolis Fondation jointly implement the Fellowship.

Meet the featured Laureate Candidates

Sofiane Boudalia
Country: Algeria
Position: Associate Professor
Institution: Université 8 Mai 1945 Guelma
One Planet Fellowship Cohort: 2020



Mariette Agbohessou
Country: Benin
Position: PhD Student
Institution: Université Cheikh Anta Diop de Dakar (UCAD)
One Planet Fellowship Cohort: 2021

Eméline Assede
Country: Benin
Position: Deputy Head of the Research Unit
Institution: Université de Parakou
One Planet Fellowship Cohort: 2021

Konoutan Medard Thibault Kafoutchoni
Country: Benin
Position: PhD Student
Institution: Université d'Abomey-Calavi (UAC)
One Planet Fellowship Cohort: 2020

Fatoumata Ouattara
Country: Côte d'Ivoire
Position: PhD Student
Institution: University of Ibadan (UI)
One Planet Fellowship Cohort: 2021

Semira Mohammed Beyan
Country: Ethiopia
Position: Managing Director
Institution: Gate for Opportunity (GO)
One Planet Fellowship Cohort: 2019

Tifsehit Solomon Tesfaye
Country: Ethiopia
Position: Associate Professor of Entomology
Institution: Wollega University (WU)
One Planet Fellowship Cohort: 2021

Saumu Tama Shaka
Country: Kenya
Position: Principal Meteorologist
Institution: Kenya Meteorological Department
One Planet Fellowship Cohort: 2019

Abubakar Girei Halilu
Country: Nigeria
Position: Senior Lecturer
Institution: Federal University Dutse
One Planet Fellowship Cohort: 2019

Aramide Dolapo Igbari
Country: Nigeria
Position: Lecturer
Institution: University of Lagos (UNILAG)
One Planet Fellowship Cohort: 2020

Geneva Evalee Anisiobi

Country: Nigeria

Position: Principal Research Officer

Institution: Nigerian Institute for Oil-Palm Research (NIFOR)

One Planet Fellowship Cohort: 2021

Ahmadou Sow

Country: Senegal

Position: Post-doctoral Researcher

Institution: Centre de coopération internationale en recherche agronomique pour le développement (CIRAD)

One Planet Fellowship Cohort: 2020

Ndeye Aida Ndiaye

Country: Senegal

Position: Entrepreneur

Institution: Laboratoire Commun de Microbiologie (LCM)

One Planet Fellowship Cohort: 2021

Anna Haji Msigwa

Country: Tanzania

Position: Lecturer and Researcher in hydrology and water resources Engineering

Institution: Nelson Mandela African Institution of Science and Technology (NM-AIST)

One Planet Fellowship Cohort: 2020

Damigou Bammite

Country: Togo

Position: Teacher

Institution: University of Lomé

One Planet Fellowship Cohort: 2020

Chibuye Florence Kunda

Country: Zambia

Position: Lecturer and Researcher

Institution: University of Zambia (UNZA)

One Planet Fellowship Cohort: 2019

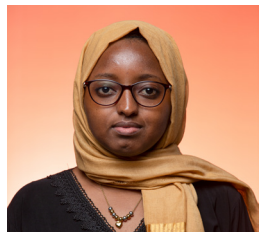
Remy Kindanloun Bationo

Country: Burkina Faso

Position: Senior Researcher

Institution: Institut de Recherches en Sciences Appliquées et Technologies (IRSAT)

One Planet Fellowship Cohort: 2020



Yaye Deffa Wane

Country: Senegal

Position: PhD Student

Institution: University of Gaston-Berger

One Planet Fellowship Cohort: 2019

AgriSpirations

AWARD
African Women in Agricultural Research and Development

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