



Miriam Coulibaly Diakité

2020 One Planet Laureate Candidate

Position

Food Research Engineer - PhD Student

Institution

Institute for Research in Applied Sciences and Technologies (IRSAT)

Country

Burkina Faso

Education

D.E.A, Microbial and Cellular Biotechnology, Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso

Mentor

Dr. Fabèkourè Cédric Kambire, Research Fellow, Institute for Research in Applied Sciences and Technology (IRSAT)

Research Area

Optimisation of *Parkia biglobosa* seeds (locust beans) processing through innovative technology that conserves resources reducing the work burden and increasing the resilience of women in the food-processing businesses in urban and rural areas.

Miriam Coulibaly is a researcher at the Western Regional Directorate of the Institute for Research in Applied Sciences and Technologies/National Centre for Scientific and Technological Research (CNRST/IRSAT/DRO) in Bobo-Dioulasso, Burkina Faso.

Since 2015, Miriam has been supporting small and medium-sized food-processing companies with training in best hygiene and manufacturing practices for food products, microbiological and physicochemical quality control of manufactured products, and research for the agri-food industry.

Her research focuses on optimizing locust bean processing to help remove some of the production constraints in urban and rural areas through an innovative resource-saving process. The process for transforming locust beans (*Parkia biglobosa*) into the fermented condiment, Sumbala, is an essential generator of income for women in rural and urban areas and an essential source of nutrients for nutrients in many poor households in Burkina Faso and West Africa.

However, the work involved is arduous and restrictive. The process consumes significant amounts of firewood and water,

and the cooking and processing stages take considerable time. Furthermore, the nutritional and therapeutic benefits of Sumbala have led to increasing demand, causing some women to adopt unhealthy practices to facilitate the cooking process and resulting in Sumbala of poor nutritional and health quality. These harmful practices include skipping some of the steps in the traditional method and the use of potassium carbide.

Miriam provides consulting services to associations of women agri-food processors in Bobo-Dioulasso and throughout Burkina Faso, often through N.G.O. partners of IRSAT, which is working on capacity-building for entrepreneurs, including women, girls, and young people in the agri-food sector.

Her work involves the scientific development of this innovative process which is tested compared to the traditional method. This process consists of a bean dehulling technique, a roasting stage, and butane gas for cooking. As a result, it considerably reduces energy and water consumption, cooking time (from 24h to 5-6h), and processing time, improving the flavor and, ultimately, the nutritional quality.

Miriam's focuses on optimizing locust bean processing to help remove some of the production constraints in urban and rural areas through an innovative resource-saving process.

Born into a large family in 1983, Miriam attended school in Bobo-Dioulasso until completing her High School Diploma in Maths and Natural Sciences in 2003. In 2003-2004, she moved to the capital, Ouagadougou, to study at the Joseph Ki ZERBO University. She opted for the Chemistry-Biochemistry-Biology-Geology (CBBG) stream in her first year. In her second year, she chose Chemistry-Biochemistry. The following year, she obtained a Bachelor of Science in Food Technology and Human Nutrition and was then awarded a Master's degree in 2007, where she finished top of the class.

In 2008, she was awarded a scholarship for a Postgraduate Diploma of Advanced Studies (D.E.A) in Microbial and Cellular Biotechnology at Joseph Ki Zerbo University. She obtained her D.E.A. in 2009 with a thesis entitled: "Research and Isolation of Bacteria- Producing Bioactive Molecules: a Case Study of NRPS Peptides (Non-Ribosomal Peptide Synthetase)."

At the end of 2014, she was recruited as a research engineer in agri-food for the National Centre for Scientific and Technological Research (CNRST) in Ouagadougou. Miriam is particularly interested in Research and Development, specifically in supporting local food processing operations. Additionally, she helps students at the Louis Querbes Secondary School organize activities about the effects of plastic bags on the environment, the sorting of household waste in collaboration with a waste recycling association, the school's general health, and the planting of trees.

Her main reason for applying for the One Planet Fellowship is the massive potential for capacity-building that this fellowship can offer because this is lacking at her institution. Miriam desperately wants to put her talents to better use.

In her view, the One Planet Fellowship will help develop her knowledge of climate change, the levels of intervention for each research skill, and the mechanisms for adaptation and mitigation. Miriam hopes to benefit from capacity-building and mentoring and leadership and gender mainstreaming to facilitate the effective and efficient transfer of skills.

Through networking, she hopes to gain access to specific laboratories to conduct in-depth research and establish fruitful collaborations. Upon completion, she would like to share her experience with colleagues at her institution. She has already begun to pass on her expertise to interns and through discussions with colleagues.

Networking will significantly benefit her institution, not only in Miriam's field but across the institution as a whole, as the diverse skills of AWARD laureates and trainers will be of interest to colleagues working in similar fields. Miriam hopes to become a leading researcher in agri-food and climate change and impact skills transfer.

Miriam hopes to become a leading researcher in agri-food and climate change and impact skills transfer. Above all, she would like her research recommendations to be adopted by communities.

Do you have any further questions? Send an email to : oneplanet.award@cgiar.org

An African woman in research faces many varied challenges. She is often left to their own devices due to a lack of knowledge about certain scientific approaches that prevent her effectiveness.

Moreover, there are limited projects to apply for. "For my part, I often contacted senior researchers in Ouagadougou at the time," she admits. Then, "I decided to design the projects myself," she says. Miriam also highlights the lack of equipment coupled with the inadequacies of capacity-building policy at the ministry level.

She often has to establish collaborations with other research institutes and better-equipped vocational secondary schools in the area.

Finally, in research, as a married woman with children, she has to work twice as hard while striking the right balance between family and professional life. For Miriam, a fighter, optimist, and mother of three, reconciling her family, social and professional life is significant.

For this reason, she is very active and involved in community life. At her institution in Bobo-Dioulasso, she is in charge of the social unit which supports colleagues with specific needs and is also a member of the Association of Women Scientists of Burkina Faso.

Miriam Coulibaly Diakit  is one of the growing number of candidates selected to participate in the One Planet Fellowship. The One Planet Fellowship is a career development initiative that is building a robust pipeline of highly connected, inter-generational scientists equipped to use a gender lens to help Africa's smallholder farmers cope with climate change. 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 are jointly implementing the Fellowship.

Do you have any further questions? Send an email to : oneplanet.award@cgiar.org

www.awardfellowships.org | www.oneplanetsummit.fr