OnePlanet FELLOWSHIP

Building a robust pipeline of scientists leading climate change research in Africa

Candidate Profile

Faye Awa

2021One Planet Laureate Candidate

Position

Researcher

Institution

Regional Study Centre for the Improvement of Adaptation to Drought (ISRA/CERAS), Thiès-Senegal

Country

Senegal

Education

PhD, Regional Center for the Study of Adaptation to Drought (ISRA/CERAS)

Mentor

Dr. Mariama Ngom, Associate Professor, Cheikh Anta Diop University of Dakar (UCAD), Senegal

Research Area

Food security and crop management.

Faye Awa is a postdoctoral researcher at the Regional Study Centre for the Improvement of Adaptation to Drought (ISRA/CERAS) in Thiès, 70 km east of Dakar in Senegal.

As a research associate, she works on the anatomics project.

Her research is based on improving drought adaptation for cereal crops via their root systems. Her work focuses on improving the productivity of millet under drought conditions. She uses various approaches such as high-throughput phenotyping of millet in the field followed by phenotyping by laser ablation tomography (LAT) and genetics.

The ultimate goal of this research is to help accelerate the selection of new millet varieties with improved drought tolerance and stable yields despite climatic constraints. The biostatistician hopes to have markers.

She explains one of the reasons for her interest in this exciting project in terms of professional experience is that she can improve her knowledge of several subjects and disciplines.

Born in M'bour, a town in western Senegal located on the Petite-Côte, about 80 km south of Dakar and bordering the seaside resort of Saly, Faye comes from a family of teachers and scientists.

Her father is a teacher at UCAD and director of a public maritime school, and her mother is a primary school teacher. All of her siblings completed master's level education.

Her older sister has a master's degree in aquaculture and teaches natural and life sciences at the secondary level. Her younger brother defended his thesis in pharmacy. Finally, she has an older sister who teaches in a vocational training school in Fatick.

Faye attended school in M'bour. Since primary school, she has dreamed of becoming a research scientist like her father. This dream will be her motivation throughout her academic career. She applied herself particularly well to scientific subjects from secondary school onward and obtained her baccalaureate in science in 2010.

As a scholarship holder, it was a natural progression to enroll at UCAD in Dakar, the capital of Senegal. In the first year, her DEUG (foundation degree) focused on natural sciences: chemistry, geology, geosciences. Afterward, she took a competitive examination for a bachelor's degree in bioinformatics and biomathematics in 2013. The following year, during her master's, she specialized in bioinformatics. She did a ' 'master's internship in the Gambia for six months thanks to a scholarship excellence Faye rd from the University of Brussels in Belgium. Her research focuses on the animal domain. It involves the structural modeling of the protein complex involved in malaria infection in pregnant women.

After this six-month internship, Faye graduated with a ' 'master's degree in bioinformatics in 2016, and set her sights on the next step: postgraduate studies.

In 2016, when Faye began to reflect on millet, she sought to make her contribution by finding solutions and taking into account the problem of climate change in general and drought in particular. The issue began to arouse her interest.

Faye's research explores plant biostatistics and bioinformatics to accelerate the breeding of new millet varieties, improving drought tolerance and stable yield despite climatic constraints.

In 2016, just after her master's degree, Faye was selected for a PhD with a scholarship at IRD (Institute for Research for Development) in Dakar for modeling research on millet. She then left the animal world to commence work in the plant world.

This transition was millet, a food widely consumed in the Sahel context, particularly because of its resistance to drought. However, one of the weaknesses of millet is its low yield compared to other cereals.

So Faye thought, how can millet productivity be improved in the event of drought? Her real motivation is to understand the mechanism at the root level. She had no previous knowledge of the root aspect of plants (related to nutrition). In her research, she considers root architecture and anatomy in the context of drought.

Faye was a Senegalese state scholarship holder from her first year of study through to her PhD (2011 to 2019). Currently, Faye does not work directly with rural communities at the postdoctoral level because the studies are not carried out in rural areas: the research work is carried out in experimental stations. However, rural communities will be the beneficiaries.

She wants to be a research director in her career plan, preferably in a national institution.

Her main objective is to develop tools and technologies that can improve the productivity and resilience of cereal crops in the event of drought or climate change in general through their root system, using her knowledge of plant biostatistics and bioinformatics.

Faye aims to accelerate the breeding of new millet varieties with improved drought tolerance and stable yields despite climatic constraints. Faye heard about the One Planet Fellowship just after defending her thesis from a group of researchers at her institute.

Through the fellowship, she is beginning to receive training, especially on career development and road mapping, which allows her to better define her interpersonal skills and ultimately improve herself.

This fellowship provides an opportunity to take advantage of and helps to define and pursue research goals fairly quickly.

The knowledge Faye has acquired thanks to the fellowship increases visibility, which is beneficial for her institution. She believes the other benefit for her institution is that it will be more operational.

Training helps to improve communication and, therefore, relationships within ' 'one's community. The challenges of being a research scientist are many and varied.

Firstly, it is important to learn new tools at the level of academic knowledge due to the change of domain.

To fill in some of the gaps, threw herself into working hard and continually learning to improve her knowledge in the field. Professional integration can be difficult in terms of a career in an academic environment. She has not yet been recruited.

Regarding projects, researchers face difficulties in writing projects and finding funding.

From an administrative point of view, project management can be challenging for junior researchers. Finally, for this married mother of two, reconciling family and professional life requires perseverance, diligence, and patience.

Faye Awa 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.