



**Position**

Lecturer 1

**Institution**

Michael Okpara University of  
Agriculture, Umudike (MOUAU),  
Nigeria

**Country**

Nigeria

**Education**

PhD, Biochemical Toxicology,  
Michael Okpara University of  
Agriculture (MOUA), Nigeria

**Mentor**

Prof. Ojmelukwe Philippa  
Chinyere, Lecturer / Researcher,  
Michael Okpara University of  
Agriculture, Umudike (MOUAU),  
Nigeria

**Research Area**

Biochemical and environmental  
toxicology.

## Doris Akachukwu

### 2021 One Planet Laureate Candidate

Doris Akachukwu studied biochemistry as an undergraduate at the Federal University of Technology, Owerri, then completed her master's and PhD in biochemical toxicology at Michael Okpara University of Agriculture (MOUA) in Umudike, Nigeria.

Her work involves nature-based remediation approaches that are meant to forestall the introduction of pollutants into the food chain or ameliorate already polluted soils thereby preserving the ecosystem.

"I am from one of the states in the Niger Delta area of Nigeria where oil spillage is common," she says. "This has led to damage to arable farmlands. Some land has been abandoned, resulting in a loss of livelihoods, since residents are not able to engage in productive activities."

She is working hard in an effort to address these challenges and alleviate the resulting problems.

Now a research scientist at MOUAU, Doris's current research has her investigating different biochar projects for remediation of polluted soils in the eastern part of Nigeria involving the oil palm.

"We are using biochar to improve the production of *Telfairia occidentalis* (a green leafy vegetable), and our work has recently been published in a scientific journal," she says.

Doris would like to work with maize, cassava and yams, in an effort to find good sources and appropriate concentrations of biochar to prevent absorption of effluent by the plants.

"Biochar is made from natural organic sources," she explains. "You can even make it from animal dung, by heating in an oven up to 450 degrees in total or partial absence of oxygen, then grind it and apply it to the soil." This process can sequester carbon into the soil.

"We are also looking at nano-biochar and intend to check its ability to amend the soil to prevent uptake of heavy metals," she continues. "Nano-biochar is useful in removing contaminating materials from oil pollution, agricultural applications and sensing, and will ultimately increase sustainable agricultural programs, while addressing international food security and decreasing greenhouse gas emissions."

Doris says her mentor saw the call for applications for the One Planet Fellowship and shared it with her, so she quickly applied.

"I was excited to be selected," she remarks. She expects the program to provide her with unique skills and valuable linkages. "I am looking forward to doing my research and gathering data to contribute to being promoted as a senior lecturer," she reveals.

Doris is investigating different biochar projects for remediation of polluted soils in the eastern part of Nigeria involving the oil palm to preserve the ecosystem.

"I plan to share my ideas and thereby increase my visibility, and I believe this program also has the capacity to improve my research skills."

Doris says she is already developing time-management skills through her participation in the various meetings that have been scheduled thanks to the One Planet Fellowship program. "By meeting deadlines for submission of various assignments and documents, this is helping me to better balance my priorities," she remarks.

A key challenge she has experienced is that of getting funding for her research work. "In 2016 I got a grant for my post-master's work with Climate Impacts Research Capacity and Leadership Enhancement (CIRCLE), which enabled me to work in five communities teaching them to make biochar," she recalls. "Aside from a lack of funding, I also deal with a shortage of state-of-the-art facilities and equipment with which to conduct research."

As a One Planet Fellow, Doris hopes to have an opportunity to work in an advanced laboratory. She also expects to gain valuable experience in giving presentations and writing. "I have already acquired some valuable skills," she notes, "especially in terms of gender issues, and am seeing the effects." She says she always wears a "gender lens" when teaching and advising students.

**Doris Akachukwu** 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](mailto:oneplanet.award@cgiar.org)

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