



Jacky Amenan Konan Kakou

2021 One Planet Laureate Candidate

Position

Researcher and shea tree breeder at the Cashew, Mango & Papaya Program (AMP)

Institution

National Centre for Agronomic Research (CNRA), Côte d'Ivoire

Country

Côte d'Ivoire

Education

PhD, Bio-Technology and Plant Breeding, University Nangui Abrogoua (UNA), Côte d'Ivoire

Mentor

Prof. François Kouame N'guessan, UNA, associate professor, Abidjan (Côte d'Ivoire)

Research Area

Varietal improvement and domestication of the shea tree to facilitate its adoption, management, and sustainability, especially for women.

Since May 2020, Jacky Amenan Konan Kakou has been a researcher and shea tree breeder at the Cashew, Mango & Papaya Programme (AMP) at the National Centre for Agronomic Research (CNRA) in Korhogo in northern Côte d'Ivoire. Specializing in molecular biology and genomics, she intends to use these tools to accelerate the selection of the shea tree, a slow-growing species.

She is aware that the development of people dependent on the shea tree (a species threatened by climate change and human activity) is linked to the long-term sustainable management of the resources of this species. Therefore, her research focuses on this tree's varietal improvement and domestication to promote its cultivation and facilitate its management and sustainability, particularly for women. In this context, "I surveyed the Ivorian territory to update the distribution area of shea in the framework of the CNRA shea tree selection program. High-producing and potentially pest-tolerant trees were identified during these surveys," she explains.

In 2018, the geneticist participated in the international French-speaking competition entitled "ma thèse en 180 secondes" (my thesis in 180 seconds) and achieved second place in this national competition.

Born in Béoumi in central Côte d'Ivoire, Konan comes from a family of 11 children. Her father was a primary school teacher. She was a brilliant student and was continually noted as a high

achiever throughout her school career. She wanted to study medicine when she obtained her scientific baccalaureate in natural sciences in 2003 in Oumé, in the country's center-west, 250 km from Abidjan. Instead, she was placed at the University of Natural Sciences. She holds a degree in plant and environmental protection (obtained in 2007) from UNA in Abidjan, the economic capital of Côte d'Ivoire. She then obtained a master's degree and then a diplôme de l'enseignement supérieur (DEA) in 2009. With the advent of the LMD (license-master-doctorate) system, she did a master 2 in biology and plant protection (genetics option) in 2013.

She chose genetics because "I liked the subject," she states. "It's a revelation!"

She completed several scientific stays during her master's degree, including a two-month stay at the International Institute of Agriculture (IITA) in Ibadan, Nigeria.

Konan enrolled for a PhD in genetic improvement in 2014. She explains that natural selection in the shea tree is a long process, and she hopes to use molecular markers to shorten the selection cycles. The shea tree grows wild, but its development cycle is long, so people do not cultivate it. In addition, the felling of trees for firewood and the building of roads is putting a lot of pressure on the shea tree population, which is shrinking in size. Konan believes that the preservation and domestication of the shea tree are urgent matters. Climate change also affects the shea tree.

Jacky is a shea researcher and breeder specializing in varietal improvement and domestication of shea to facilitate its management and sustainability, particularly for rural women farming communities in Côte d'Ivoire.

It could become endangered as it represents a powerful reservoir of CO2. During her thesis, Konan completed an internship in Belgium and then went to France twice for the molecular part of her research. She was mainly fascinated by the study on genome sequencing of the different gourd varieties (this was the speculation she was working on at the time) and comparing them to the phenotypic differences observed between the types due to a change in bases.

She defended her thesis in genetics and molecular biology in October 2019. This brilliant student benefited from a scholarship from the Ivorian state throughout her university career, from the first year to her thesis. In 2020, her regional director sent her the call for the One Planet Fellowship applications.

By pursuing this direction in her career, Konan believes that she is being useful by contributing directly to improving producers' income and, therefore, their living conditions. Indeed, when carrying out experiments in the north, east, and center of the country, this female researcher works with rural communities, particularly women's groups. The shea tree is a vital resource because women make a living from it and use the financial resources generated to provide for their children. Another essential element is that the population consumes the shea fruit during periods of food shortage.

In the medium term, Konan plans to increase her scientific publications to become a research fellow, while in the long term, she aims to become a research director. In addition, she wants to build up a gene bank (to store a representation of all that exists as genetic diversity of the shea tree) off-site to secure this precious resource, which is currently under threat.

For Konan, this Fellowship represents an opportunity to help her set specific long-term goals and give herself the means to achieve them. Before this grant, she realized that she had not set goals in terms of timing.

"From now on, I will give myself the means, thanks to all the tools at my disposal," she confirms.

The skills acquired through this program will inevitably benefit her institution, as other colleagues will also benefit from it. Similarly, the sharing of knowledge will have a positive impact on producers.

Her father motivated her a lot in her professional career. Konan is grateful to her father, a young orphan who dropped out of school early to take care of his mother, while the rest of his generation all went on to have successful careers. Later on, her father sacrificed a lot for his family. Similarly, her mother had to work hard and make sacrifices to contribute to her children's education. In return, Konan wanted to honor them and make them proud, especially as she is the only scientist in the family and also holds a doctorate.

Some of the challenges faced by a scientist may be unexpected. Konan's thesis supervisor was Ivorian, but because her specialty was different, she had to call on a remote French supervisor. Unfortunately, at one point, her supervisor, who was very available at the beginning of her thesis, was absent due to a new assignment in Latin America. This event was detrimental to her. "It was a huge challenge to be left to my own devices and to work with tools (bioinformatics) that were new to me," she says. Konan had to do her own research.

Jacky Amenan Konan Kakou 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

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