



Wuletawu Abera Worku

2020 One Planet Laureate Candidate

Position

Landscape Hydrology Scientist

Institution

International Centre for Tropical Agriculture (CIAT)

Country

Ethiopia

Education

PhD, Environmental Engineering, Trento University, Italy

Mentor

Prof. Belay Simane, Professor of Environmental Studies, Addis Ababa University, Ethiopia

Area of research

Designing and implementing integrated water resources development and management practices to enhance soil moisture and promote small-scale irrigation in the different socio-ecological context in Africa.

Wuletawu Abera Worku was born in a farming community in a remote village in Ethiopia's central highlands. To access school, which was about 10 kilometers from home, required living in rented facilities near the school from grade 1 to grade 5 and walking that distance for the rest of his elementary school years. His family support and investment in his success made this hardship lighter.

In secondary school, which also was in a small town far from home, Wuletawu lived with a group of schoolmates, sharing responsibilities for the household's smooth running.

While carrying out his everyday duty of collecting water from a nearby spring, his awareness of the seasonal variation in water levels was raised, and his interest in the study of hydrology began. When he joined Mekelle University for undergraduate studies, he enrolled in geography and environmental studies to understand how the physical processes work.

For his double Master in Science degree, supported by a European Union scholarship, he studied environmental forestry at Bangor University in the United Kingdom and watershed management at Padova University in Italy. He earned a Ph.D. in environmental engineering-hydrological modeling from Trento University in Italy.

Wuletawu is a postdoctoral scientist with the Alliance of Bioversity International and International Center for Tropical Agriculture (CIAT), working on estimating ecosystem functions, including water, soil, and energy resources productivity in different agroecological zones.

His research aims to improve estimation procedures of ecosystem variables and their error quantification. These processes are even more challenging under the changing climate, which requires Wuletawu to use various tools such as biophysical models, big data analytics, artificial intelligence, geographical information systems, and remote sensing, plus a combination of different in situ and satellite data.

He finds the application of mathematical models in the estimation of biogeochemical processes interesting because this is new and can predict levels even for the unmeasurable quantities; as he notes, "It is exciting for me when this model fits the actual processes because it allows the generation of data to help decision-making by smallholders. For example, soil water and fertilizer requirements can be made for crops and shared with farmers. This can improve their farming practices and their lives."

Wuletawu's upbringing in a small farming community underlies his choice of research,

Wuletawu aspires to be a leading scientist in biophysical processes, focusing on water and soil management and other natural resources, to produce impactful science that will guide agricultural digitalization practice and policy in Africa.

and his solutions are intended to solve problems facing farmers like his family. His projects involve rural farmers with a focus on sustainable management of natural resources using climate-smart technologies. He is designing research practices with farmers' inputs and how a change in the landscape fits their interests.

Wuletawu wanted to be a research scientist ever since he discovered that scientists were paid for raising ideas and conducting research to solve societal problems. "I think this is the most important job I could ever have had," he remarks.

He aspires to be a leading scientist in biophysical processes, focusing on water and soil management and other natural resources, to produce impactful science that will guide agricultural digitalization practice and policy in Africa. He envisions an opportunity for youth involvement in agriculture and plans to implement capacity-building initiatives to equip them with agricultural production skills.

The One Planet Fellowship will contribute to Wuletawu's realization of his career goal through building his research, proposal writing, and interpersonal skills. Mentoring will provide him with the support system to grow as a scientist and have a broad impact through his work.

The networking opportunities will link him with others in his area of research and expose him to developments in methodologies and technology. He will be a valuable asset to his institution, and through mentoring, he will support the next generation of African scientists to grow.

As an African scientist, Wuletawu has to deal with the frustration of funding shortages that prevent him from pursuing specific research topics of his interest.

Opportunities for long-term research on one topic are rare, so a researcher ends up covering a multitude of issues but without much depth in any of them. Maintaining a good life-work balance has been challenging for Wuletawu because the early stage of a scientist's career is demanding. He does not spend as much time with his two young children as he would like, especially when traveling to the field and outside the country.

Wuletawu Abera Worku 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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