

The Chancellor of Ghent University has the honour of inviting you to attend the public defense of the doctoral dissertation of

### **Nathaline Onek Aapro**

Title of the doctoral dissertation:

#### *The potential of mobile phone technology for agriculture Perspectives from Ugandan smallholders*

The public defence will take place on 6<sup>th</sup> December 2024 at 2 PM (CET) in the Azalea, room A0.1 at Campus Coupure, Coupure Links 653, 9000 Ghent. The defense can also be followed online: [Click here for the link.](#)

There will be a contiguous reception to which you are heartily invited.  
Please confirm your attendance before 1<sup>st</sup> December to: [nathalineonek.aparo@ugent.be](mailto:nathalineonek.aparo@ugent.be)

#### **Dissertation supervisors**

**Prof. dr. Hans De Steur**  
Faculty of Bioscience  
Engineering,  
Ghent University

**Dr. Walter Odongo**  
Faculty of Agriculture and  
Environment,  
Gulu University

#### **Board of examiners**

**Prof. dr. ir. Peter Goethals**  
Chairman  
Faculty of Bioscience  
Engineering,  
Ghent University

**Prof. dr. Xavier Gellynck**  
Secretary  
Faculty of Bioscience  
Engineering,  
Ghent University

**Prof. dr. Koen Schoors**  
Faculty of Economics and  
Business Administration,  
Ghent University

**Prof. dr. Liesbeth Dries**  
Agricultural Economics and Rural  
Policy Group, Wageningen University and  
Research

**Dr. Fatemeh Taheri**  
Department of Material  
Engineering, Katholieke  
Universiteit Leuven

#### **Abstract of the doctoral research**

Smallholder farms are crucial to global food security, particularly in sub-Saharan Africa, where they supply most of the food and employ over 60% of the labor force. However, these farmers face persistent challenges, including low productivity, limited access to modern technologies, and vulnerability to poverty and food insecurity. Mobile phone technologies (MPTs), a subset of information and communication technologies, hold transformative potential to address these issues by enhancing communication, decision-making, and market connectivity. Yet, the adoption of MPTs remains low among smallholders.

This PhD research investigates how MPTs can advance smallholder agriculture in Uganda. It includes a systematic review of adoption determinants and empirical studies on performance perceptions (using the Technology-to-Performance Chain model), willingness to pay for smart farming innovations (via stated preference methods), and participation in smartphone-based data collection (using an extended Technology Acceptance Model). Findings offer actionable recommendations for fostering digital transformation, improving smallholder livelihoods, and achieving sustainable agricultural development.

#### **Brief Curriculum Vitae**

Aparo Nathaline Onek is a seasoned agricultural- and socio-economist with over seven years of experience in research, project management and policy advocacy in the academic, public and private sectors. She holds a bachelor's degree in agriculture from Gulu University, Uganda, and an International Master of Science in Rural Development from Ghent University, Belgium, University of Pisa, Italy, and the University of Pretoria, South Africa. Nathaline successfully managed and implemented agricultural and rural development projects funded by reputable donors such as SIDA, EU, USDA, ICCO and the Walmart Foundation while working for AVSI Foundation and MercyCorps Uganda. In doing so, she has demonstrated her expertise in leading research-driven initiatives and translating findings into impactful policy actions. Since 2020, she has been a PhD researcher in the Department of Agricultural Economics at Ghent University, specializing in digital innovations and technologies, especially mobile phone technologies, for smallholder agriculture. During her PhD, Nathaline presented at international scientific conferences, published high impact peer-reviewed journal articles and contributed to project proposals and consultancy assignments.