

The faculty of Engineering of the Vrije Universiteit Brussel invites you to attend the public defense leading to the degree of

DOCTOR OF ENGINEERING SCIENCES

of **Hellen Aluku**

The public defense will take place on **Tuesday, 5th January 2021 at 2pm.**

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MANAGEMENT OF EVAPOTRANSPIRATION ALONG THE SEMI-ARID
AGRO-ECOLOGICAL ZONES OF SUB-SAHARAN AFRICA
ADVANCING THE UNDERSTANDING OF DYNAMICS AND COMPLEXITIES OF
AGRICULTURAL SOIL AND WATER CONSERVATION TECHNIQUES ADOPTION

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Abstract of the PhD research

Rainfed agriculture is the major source of livelihood in arid and semi-arid areas of sub-Saharan Africa (SSA). Increasing population puts further pressure on the already stretched agricultural food crop production systems. Moreover, crop yields in arid and semi-arid agro-ecological zones of SSA are low. The situation is exacerbated by inadequate and erratic rainfall, intra-seasonal rainfall variability and droughts, and high temperatures, leading to high rates of evapotranspiration. Extensive research on innovative agricultural practices to preserve soil water/moisture and hence raise yields of farmers have been carried out. Notwithstanding the several innovations, these techniques have hardly been adopted by smallholder farmers. The main objective of this PhD is to investigate using a multi-disciplinary approach how sustainable and innovative agricultural research outcomes can be adopted by smallholder farmers, and hence boost their livelihood and food security, and ensure sustainability in agriculture.