

**Session A1** **Empowering Crop Monitoring System by GeoAI and Big Data for Smallholder and Marginalized Communities**

**Time: 15:30-17:00, 6th September**

**Room: 307**

---

**Co-Chairs**

Livia Peiser, Land and Water Division, FAO

ZUO Lijun, International Research Center of Big Data for Sustainable Development Goals, China

---

Opening, LI Lifeng (Director, NSL, FAO) and scene setting by chairs

Review of recent trends in the application of innovative technologies for monitoring smallholder agriculture

Mariana Belgiu (University of Twente, Netherlands)

---

Leveraging Remote Sensing and GeoAI for Crop and Water Monitoring in Smallholder Farming Systems in Mozambique

JOSE DO ROSARIO BOFANA (Catholic University of Mozambique and FAO)

---

Mapping 10-m monoculture and intercropped maize in smallholder area of Kenya by integrating crop phenology and GeoAI

YANG Chen (Aerospace Information Research Institute, Chinese Academy of Sciences, China)

---

A novel hierarchical semantic boundary-guided multi-task network for agriculture parcel delineation

ZHANG Miao (Aerospace Information Research Institute, Chinese Academy of Sciences, China)

---

Improving rice production capacity to ensure food security: a farm survey-based perspective

SHEN Yuan (Huazhong Agriculture University, China)

---

Global crop growth and pest monitoring by remote sensing

HUANG Wenjiang (Aerospace Information Research Institute, Chinese Academy of Sciences, China)

---

**Smart Governance and Intelligent Farmland Management**

KONG Xiangbin (South China Agricultural University, China)

---

**Precision Crop Mapping in Complex Agricultural Landscapes Using Multi-Source Remote Sensing and Deep Learning**

LIU Jianhong (Northwest University, China)

---

Flash talk: Precision Crop Mapping in Complex Agricultural Landscapes Using Multi-Source Remote Sensing and Deep Learning

---

Flash talk: Smart Governance and Intelligent Farmland Management

---

**QA to be adapted to final agenda**

---

**Panel Discussion**

**Topics:**

- 1) Identification of current technological and procedural gaps that limit application of big data for smallholder farming
  - 2) Potential innovations and future prospects on leveraging GeoAI and Big
-

---

Data for smallholder farming

3) Working mechanism of Group on GeoAI and Big Data for smallholder agriculture

---

**Panel Speakers:**

- 1) Sven Gilliams, GEOGLAM
  - 2) Yan Jia, World Food Programme
  - 3) Takaaki Masaki, Pamela Lapitan etc. Asian Development Bank
  - 4) Keith Shepherd, iSDA
  - 5) Li Jia, AIRCAS
  - 6) Qingfeng Meng, Chinese Agriculture University
-