ELGON GROUP

AgriTech Summer School: Using drones for crop monitoring **Members: Ahmed, Albert, Ethelyn, Juliet and Junitor**

	Topic name	**Learning outcomes** **The participants should be able to:**	**Learning activities / Assignments**	**Basic learning materials**
Day 1	Introduction and overview of drone technology in agriculture	• Discuss the challenges faced in crop production • Describe basic concepts, terminology and overview of drones • Explain different types of drones based on purpose and propulsion • Discuss drone application in agriculture	• Lectures on the subject • Discussion in groups for challenges and drone application • Plenary session to bring closure	• PowerPoint slides • Web resources http://www.fao.org/3/I8494EN/i8494en.pdf • Training manuals
Day 2	Drone components, softwares, programming and Demos	• Familiarize with the components of the drone: camera, sensors, on-board storage capacity, Removable storage devices and Linked mobile devices • Discuss the maintenance: method of inspection, charging the battery and cleaning the drone storage • Outline the methods of drone programming • Demonstrate on installation of programs in the computer • Illustrate on running of the programs	• Lecture on the technical components of the drone • General discussion (to assess the learners' acquaintance into drone programming tools) • Demos on drone maintenance and components safety • Hands on practice on QGIS and R software	• PowerPoint slides • Web resources • Drones • Computer labs
Day 3	Hands on practicals: Learning by experience	• Visit the demo field • Calibrate the drones in preparation for flying • Operate drones in the demo field • Capture required data from the field	• Field work on the drone operation such as preparation for calibration and flying • Hands on practice (Participants to operate the drones on their own with backup from technical team) • Data collection for use the following day in groups	• Drones
Day 4	Guided data processing	• Know basic technical and methodological aspects in data visualization • Perform data processing • Visualize, manage and analyze data • Interpret the results	• Group discussion on visual imagery participants are familiar with • Hands on data processing with technical assistance from trainers	• Aerial images from the drones • Computer lab with QGIS and R installed • Image processing manual https://support.dronedeploy.com/docs/supported-drones
Day 5	Presentations, Evaluations and Conclusions	• Prepare presentation of results from the field • Present the findings • Evaluate the course	• Discussions on best way to present results as groups • Group work preparation • Presentations by different groups • Individual assessment of the course	• Computer and data • Projector • Evaluation forms